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Psychological Specialties in Historical Context
Enriching the Classroom Experience for Teachers and Students

Edited by:
William Douglas Woody
Richard L. Miller
William J. Wozniak

Society for the Teaching of Psychology
Division 2, American Psychological Association
2016
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Introduction/Preface

Purpose of this E-book

Histories of psychology often start with Wundt and date psychology to 1879, but this provides only a general start to our multifaceted field. Many of our research areas, such as sensation and perception, have roots that predate Wundt. Similarly, many other areas emerged later than 1879 or even much later. Some areas, such as industrial/organizational psychology, arrived on the scene soon after the founding, but community psychology didn’t appear until the mid-twentieth century and others, such as peace psychology, did not emerge until fairly recently. The histories of these subdisciplines of psychology weave a complex tapestry for both teachers and students.

Too many of us lament that students and instructors remain unfamiliar with the history of their own specialty areas as well as with the interactions of our psychological history and the larger cultural history. In particular, we are too often unaware of the histories of our own areas of scholarship and teaching, and arguably no single instructor of General Psychology could keep pace with the emerging historical scholarship across the multitude of topics in an introductory course. To address these challenges, we invited authors to contribute rich and illustrative chapters for inclusion in Psychological Specialties in Historical Context: Enriching the Classroom Experience for Teachers and Students.

This project emerged from talks among the editors about history and from our experiences teaching the history of psychology as a stand-alone graduate or undergraduate course, teaching the history of disciplines within our classes, and incorporating external or contextual historical perspectives into our courses. We sought a rich, textured, accessible resource specifically directed at teachers and students, a source that could provide historical events, perspectives, and examples for instructors who are not themselves historians or who are teaching classes or topics outside of their historical expertise. Our motivations are exemplified by the following events.

In the late 1980s, when I (Wozniak) taught in both the Psychology Department and the Computer Science Department, I had the experience of teaching Memory & Cognition to a room full of advanced psychology majors and Artificial Intelligence to a room of advanced computer science majors in the same semester. I took the opportunity to request from each class some information: “call out the names of as many people in your field as you can.” The psychology students easily produced a dozen or so legitimate movers and shakers of the field. (I excluded the media therapists, the fictional psychologists, and members of the UNK Psychology Department.) It was a different story for the Computer Science majors. At the time, they could only produce one or two names, Bill Gates and Steve Wozniak (which I discounted because of priming related to the name of the instructor in the room); furthermore they looked mystified that I would ask such a question. How could history connect to current learning and scholarship in computer science?

This book addresses a central challenge in our field: there is a lot of “stuff” that students must learn in a Psychology course, and students often ask whether they must memorize names and other details, especially historical details. Textbooks, by and large, do a very good job of covering the “stuff,” and typically include lots of prominent names. Perhaps textbooks are so successful that students leave the course with their heads brimming full of facts, data, concepts, theories, but no idea of, nor room for, how the stuff came to be. This resource makes an attempt to connect the “stuff” of psychology to the human events that caused the “stuff” to be there in the first place. Perhaps this book can help instructors to humanize psychology by describing the sociopolitical and cultural forces, changes, and events, the technological developments, and the personal quirky
stories of the people who made psychology. Maybe learning names and activities of prominent psychologists won’t be considered an added burden if it is connected to the bigger historical and cultural picture.

Our primary goal for this work is to provide teachers of psychology with accessible resources that reflect historical influences on several subfields of psychology. Therefore, we invited each author or group of authors to prepare a concise overview of the history of their subfield, and we sought chapters that were illustrative rather than comprehensive. In other words, instead of seeking an all-inclusive history of each area, we asked authors to emphasize rich, textured historical events and potential teaching examples. Additionally, we asked authors to draft three vignettes to provide concise, accessible, poignant teaching stories or examples for classroom teachers who are unfamiliar with the history of the subdiscipline. Each topical area of psychology has a historical path that has been affected by forces both external and internal to the typical scientific progression of hypothesis testing and theory refinement. We provided authors freedom to fit their vignettes to their fields and their interests, and we provided some general encouragement for them to address the interesting (and sometimes unexpected) developments that related to three general factors. We asked that one vignette discuss the influence of a technological innovation on this subarea of psychology (e.g., the development of IATs) and that a second vignette address the effects of larger cultural changes on this subfield of psychology (e.g., the murder of Kitty Genovese). The third vignette was to describe the impact of an individual (e.g., Kurt Lewin) on his or her subdiscipline.

Beyond these goals, we asked contributors to consider aspects of history that they wish they had encountered in textbooks or classes as a student or as an emerging teacher of psychology. Additionally, we encouraged authors to consider external cultural factors and internal disciplinary factors that have shaped the questions we continue ask within our discipline. We hope this rich, detailed, teaching resource can provide many accessible, interesting, and even surprising teaching examples for instructors across a broad range of classes.

**Organization of the Book**

The book consists of 27 chapters that describe a wide range of psychological subdisciplines. We lead off with a chapter by Barney Beins that provides an historical review of how the history of psychology has been presented, beginning with historical references in journals up to E. G. Boring’s formal history first published in 1929. In addition, the chapter includes three short vignettes, the first of which describes American psychologists’ reaction to the theories of Jean Piaget. The second vignette describes how the work of Noam Chomsky sounded the bell for the decline of behaviorism as the dominant force in American psychology. The final vignette provides a short biographical sketch of psychology’s preeminent historian, E. G. Boring.

Richard L. Miller’s short history of research ethics begins in 2400 BCE and ends with the policies and documents that govern contemporary research practices including the Declaration of Helsinki and the Belmont Report. The first vignette provides a brief biography of Henry Beecher whose article in the New England Journal of Medicine exposed several egregious violations of ethical research practices. The second vignette provides a description of the acts that led to the Nuremberg Code and a list of each of the Code’s basic principles. The third vignette describes the ethical concerns connected to research on the Internet.

In the next chapter, Eric Landrum explores the history of the teaching of psychology so that we can better understand the future of the teaching of psychology. He starts by reviewing the emergence of laboratories, organizations and teaching conferences, and definitive textbooks and articles, and he connects these to early work to forge a model curriculum for psychology (starting in the 1950s)
and early teaching experiences. These factors led to the current contexts in which we teach psychology, the growing body of scholarship of teaching and learning in psychology, and to teaching conferences that continue to thrive. The author concludes the chapter with vignettes about the 2010 National Conference on Undergraduate Education in Psychology (NCUEP) and teaching advice from C. E. Seashore (1910).

In the following chapter, Katharine S. Milar showcases several early women scholars in psychology. For each woman psychologist, Milar provides concise review of her biography and scientific contributions as well as suggestions for related classes and topics. The chapter reviews well-known women commonly found in textbooks, such as Mary Whiton Calkins, Evelyn Hooker, and Christine Ladd-Franklin. Additionally, the chapter includes several women who remain overlooked in common teaching materials, including Inez Beverly Prosser, Mamie Phipps Clark, and Leta Stetter Hollingworth. These reviews provide strong teaching examples across a wide range of topics and classes.

David C. Devonis wrote the chapter about the history of the study of sensation and perception. The chapter starts with classical views of sensation and perception, including classical Greek views and the technique attributed to Da Vinci and called Leonardo's Window. Devonis then examines the early connections of sensation and perception in the 1600s and 1700s, before moving to the emergence of physiological studies that contributed to the development of current perspectives on sensation and perception, including work by Fechner, Wundt, and Helmholtz. The chapter then investigates early psychological research before considering early work by Hebb among others on sensory deprivation and other scholarship, including the study of color perception, perception of motion, and the perceptual theories of J. J. Gibson. The author closes with vignettes that include a review of the sensation and perception processes required for a self-driving car and the extramission theory of vision.

Next, in a concise history of a huge field, Richard L. Miller starts his chapter on the history of social psychology with ancient questions that today’s readers would view as social psychology. Miller then addresses why the first experiment in social psychology occurs in 1898, so long after humans began recording their social psychological questions. The author then steps into the formal history of the field, examining early textbooks, the growing emphasis on the individual that separates social psychology from sociology, and the emerging collection of methods social psychology. The chapter connects this growing collection of methods and scholars to cultural events that spurred additional research, such as World War II and the Holocaust, the broadening of the range of topics considered to be social psychology, and emerging work by Asch, Schacter, Festinger, and others. The chapter concludes with the growing call for relevance in research in the 1970s and vignettes about bystander intervention and the murder of Kitty Genovese, the development of Implicit Association Tests, and contributions of Kurt Lewin.

In the chapter on the history of personality theory, H. Russell Searight steps into questions about the emergence of personality in the psychological culture of the United States and around the world. The author opens with the initial push toward character rather than personality at the turn of the twentieth century. As recommendations about character gave way to scientific study of personality, Carl Rogers, B. F. Skinner, and Sigmund Freud, among others, rose to prominence. Social changes and greater acceptance of science after World War II and into the Cold War shaped the development of personality theory in the mid-twentieth century. The chapter reviews these developments as well as the changing roles of women and the decline of formal psychological systems as factors that shaped the recent changes in the psychology of personality. The chapter
ends with vignettes about the rise and fall of character, the ethics of Skinnerian behaviorism, and approaches to psychotherapy for women in the mid-twentieth century.

In a concise chapter about a long topic, Donald W. Daughtry, Jared W. Keeley, Cassandra Gonzales, and Katherine Peterson review the history of the study of people identified as having psychopathology. They open with ancient perspectives from multiple cultures, and then examine Medieval and Renaissance perspectives. The devote attention to the transition from demonological perspectives to natural perspectives to explain mental illness and particularly to the work of early reformers such as Pinel. Next, the authors compare and contrast early conceptions of psychological disorders as promoted by Sigmund Freud and Emile Kraepelin. The chapter then turns to diagnostic systems and debates, with particular emphasis on the history of the Diagnostic and Statistical Manual of Mental Disorders and the tensions between categorical and dimensional models. They conclude with a detailed review of multicultural perspectives. Their vignettes include a discussion of micro-aggressions, general paresis and syphilis, and the historical inclusion of homosexuality as a mental disorder.

In their chapter, Rachel Foster, Christopher A. Webb, and Jared Keeley address the long and complex history of therapy. Their chapter opens with early psychotherapies from the late 1700s and early 1800s, including Mesmerism, and then examines early hypnotic approaches by Charcot before moving to the work of Sigmund Freud. The chapter next contrasts Freud’s work with Jung’s approaches, and then concisely examines behaviorism, humanistic approaches, and Gestalt therapy as advocated by Fritz Perls. After introducing cognitive-behavioral therapy, the authors consider recent approaches, sometimes called third wave therapies, as well as integrative approaches. They conclude with vignettes about the famous case of Anna O., the classical film series that features Gloria interacting with three different therapists, and the contributions of Marsha Linehan and her Dialectical Behavior Therapy.

In the next chapter, Lisa Kindleberger Hagan examines the history of the study of child development. She opens with a review of perceptions of child development before psychology emerged as a science, including examination of ideas from Locke and Rousseau, among others. The chapter then moves to the early psychological history of child development, starting with scholarship by G. Stanley Hall and others in the child study movement. The chapter then considers contributions from Freud’s psychoanalysis, early and more recent behaviorism, and then cognitive development in the pioneering work of Piaget and Vygotsky. She then reviews the history of social-emotional perspectives on child development before turning to twenty-first century events. The chapter concludes with vignettes about the history of ethical guidelines for research with children and early views about the education of women.

In his chapter, Chris Spatz examines the history of statistics in general and statistics in psychology in particular. He opens with early-twentieth century debates about the uses and importance of statistics, and then he examines the emergence of early statistics, including the work of Adolphe Quetelet, the development of central limit theorem, and the contributions of Francis Galton. The chapter then turns to those who followed Galton, including Karl Pearson, William S. Gosset, and Ronald A. Fisher. The author then reviews the history of significance testing, the contributions of Jerzy Neyman and Egon Pearson, nonparametric tests, and more recent developments by Jacob Cohen. The chapter concludes with a review of meta-analysis and the ongoing tensions about statistical analyses.

In the next chapter, David C. Devonis examines historical roots of intelligence testing. He opens with classical notions of ability, wisdom, and intelligence, and then he moves to the commonly viewed starting point for intelligence testing, the work of Alfred Binet and Theodore Simon.
Devonis then traces the uses of intelligence testing through World War I and United States immigration policies. This history considers many different notions of intelligence, how it is tested, and what the tests mean as well as the implications of intelligence for access to education and, in some cases, basic human rights. The author connects early behavioral work to later cognitive scholarship by Tolman and others to better understand our views of intelligence, including both human and animal intelligence. The chapter concludes with vignettes about 70 as a magic number in the eyes of the law for intelligence, the relationships between intelligence and personality, and an examination of human and computer intelligence in the context of the Turing Test.

David W. Carroll focuses his chapter on the history of the psychological study of cognition, starting in the early twentieth century with work by James McKeen Cattell, William James, and Edward Bradford Titchener, and he examines the early debates about cognition and the possibility of imageless thought. The chapter then describes the radical changes that arrived with behaviorism, which largely ending the study of cognition, and notes exceptional scholars who continued to study cognition, such as Frederic Barlett, Edward Tolman, and Karl Lashley. The chapter traces the emergence of information theory and cybernetics before and after World War II, which then led into computer models of the brain and of human cognition and the reemergence of cognitive psychology in the late 1950s and early 1960s. Carroll investigates the tensions between behaviorism and emerging cognitive psychology that led to stronger cognitive scholarship, including Chomsky’s review of Skinner’s *Verbal Behavior*, the scientific study of language and imagery, and complex studies of problem solving. The chapter concludes with vignettes about Alan Turing, cognitive heuristics, and an evaluation of the claims that there was a cognitive revolution in the 1950s.

In the following chapter Kevin L. Ladd and Kyle J. Messick examine the history of the psychological study of religion. The chapter starts with a review of the emergence of the psychology of religion in the late 1800s, when scholars first stepped into these questions in psychology and struggled to separate their personal beliefs from their psychology of religion. The authors then evaluate the impacts of the emergence of behaviorism and the proliferation of the psychology of religion at liberal arts institutions more so than at major research universities. The chapter then turns to the reinvigoration of the field of psychology of religion in the United States and its proliferation around the world and across cultures. The vignettes address Edwin Starbuck, an early scholar in the psychology of religion, explore challenges in the study of prayer across history, and ask important questions about the neurophysiological study of prayer.

Jennifer Worthington, Ashley Johnson and Christopher A. Was open their chapter about the history of school psychology with an examination of the roles of duties of current school psychologists, particularly in assessment, intervention, consultation, and counseling, and then the authors turn to the roots of school psychology. They discuss the powerful impacts of Lightner Witmer, arguably the first school psychologist, and they place this history in the larger context of school reform movements and intelligence testing; they bravely address the early racism that ran through the intelligence testing and related communities. Finally, they examine the history of special education laws, which remain important for the current activities of school psychologists, and other important changes from historical approaches to the present. Their vignettes provide a rich example of the roles of school psychologists, describe a case in which cultural issues affect evaluation of a child, and explore the growing role of technology in school psychology practice.

In the next chapter, Dena N. Abbott, Debra Mollen, and Noelany Pelc explore the early and recent history of the psychology of social issues and psychologists’ advocacy for human rights in research, teaching, and practice. The authors open with a discussion of the social issues of the early
twentieth century, including the first wave of feminism in particular. The authors then consider the impacts of two World Wars, including inspiration to study psychological testing, destructive obedience, employment of women, and long-term negative consequences of combat. The authors then examine the impacts on psychology of social movements from the mid-twentieth century, including civil rights movements about racial equality, equality for people who identify as sexual minorities, second-wave feminism, rights for people with disabilities, and human rights in the United States and around the world. They conclude the chapter with a review of recent issues, including globalization and ongoing technological development, post-modern feminism, and growing concerns about terrorism and violence. They provide vignettes about the social issues of drug use, deinstitutionalization, and sexual orientation justice.

Linda M. Woolf opens her chapter on peace psychology by noting that it is a broad, interdisciplinary, and thriving field that remains outside of the mainstream of psychological research, with the first graduate program launched in 2004. She notes the prominent history of the study of these ideas, starting with William James and his former student, Mary Whiton Calkins, who advocate for peace despite their beliefs that human have deep drives toward war and conflict. She then examines the views of other early psychologists in relation to the World Wars of the twentieth century, and she incorporates the pacifistic ideas of Münsterberg, Cattell, McDougall, and others. In particular, the author examines the formation and early pacifistic activities of the Society for the Psychological Study of Social Issues. The chapter then moves to psychologists’ peace activities related to nuclear proliferation and potential destruction before concluding with a review of recent transformations within peace psychology. The chapter closes with vignettes about individual and cultural recovery from genocide, the 1961 American Psychological Association meeting about the Cold War and nuclear risk, and the recent revelations of the Hoffman report.

Kenneth D. Keith begins his chapter on culture and psychology by reviewing the relatively fast emergence of the study of culture in psychology, particularly across the past 50 years. The author then turns to the early cultural psychology, the Völkerpsychologie of the mid-nineteenth century that is most often associated with Wundt’s larger vision, and to early psychological studies that compared people from different cultures. The author then separates the recent history of cultural psychology into a short chronological history and a larger review of multiple changing perspectives in this scholarship, including cross-cultural psychology, cultural psychology, indigenous psychology, and the potential common ground among these approaches. The chapter concludes with a look toward the future and then vignettes presenting online resources in the psychology of prejudice, the mid-nineteenth century African travels of Dr. David Livingstone, and study questions to allow teachers of introductory psychology to integrate culture into their classes.

In this chapter, Isabelle D. Cherney and Anna Francis examine the history of the rapidly changing field of the psychology of gender. They open with common views of women and men from the early 1900s, and then they examine perspectives that challenge these narrow views. They examine both women’s and men’s movements across history and into the present, and they place special emphasis on the few early studies of gender to challenge convention thinking. The chapter then traces the emergence of a more developed psychology of gender in parallel with the second wave of feminism in the 1950s and 1960s. Their more recent history from the 1980s onward discusses the growing awareness of gender as a social rather than biological identity, the increase in interest in questions of gender, and gender relations in different contexts. Their vignette presents the David Reimer story, about a male child raised as a girl and the history of changing perspectives about this decision.
In the next chapter, William Douglas Woody, Anna Ropp, Richard L. Miller, and Brittany A. Bayes review highlights of the psychological study of prejudice. The chapter opens with a description of the early field of psychology, populated almost entirely with individuals who accepted the cultural beliefs of the time and viewed prejudice as natural, inescapable, and beneficial for society. In the beginning, it was indeed dark. The chapter notes early exceptions to these views, including the author of an anonymous 1916 paper that questioned racism in intelligence testing and the mid-twentieth century scholars who systematically challenged early assumptions, including Allport, Meerloo, Sherif, Montagu, and others. The authors then deeply examine early attempts to form an organization for women psychologists as well as psychological movement to challenge the science, teaching, and practice of anti-gay bias in psychology. The chapter then turns to a review of the recent explosion of research and awareness about people who live across or outside two categories of sex and gender, and it closes with the growing recognition of intersectionality in the psychology of prejudice. The vignettes explore early anti-prejudice scholars (i.e., Otto Klineberg and Joost A. M. Meerloo) and provide tools for instructors to use the events surrounding Hurricane Katrina to present theories of prejudice.

As is commonly observed, too many outside of psychology doubt our field is a science. In this chapter, William J. Wozniak first reviews obstacles that interfere with observers’ perceptions that psychology is scientific, and then moves to a concise review of the history of the development of scientific perspectives about behavior and psychological states. He then examines scientific perspectives within psychology, and then returns to the important and recurrent question about the scientific status of psychology. In specific, the author reviews challenges to wider recognition of the scientific status of psychology, including persistent yet erroneous myths that people commonly accept about human behavior and cognition. The chapter concludes with a call for more and better communication of psychological science to the public. The vignettes examine the history of brain scanning, the myth-busting activities of James “The Amazing” Randi, and the causes and consequences of the anti-vaccine movement.

Sadie Leder-Elder opens the next chapter with her own excitement about this relatively new but extremely productive field of psychological research, the study of close relationships. She then steps into the classical history of beliefs about close human relationships, largely rife with speculation and assumption. The chapter then moves to the interdisciplinary roots of the study of the field, with roles for diverse scholars including Darwin, James, Freud, Kinsey, and others, before the field settled primarily under the umbrella of social psychology. The author then considers the 1960s, when the study of close relationships emerged into its own, with several productive research teams contributing to a growing body of knowledge and including, notably, a growing number of scholars who were women. In the 1980s, the field was prominent, with growing educational opportunities, publication outlets, and professional organizations. The chapter concludes with a concise review of current work, including growing awareness of cultural and technological changes as well as changing views of gender roles that have affected relationships across cultures and history. The author’s evident enthusiasm for the field then leads into vignettes that can serve as teaching activities related to relationship timelines, historical romances in the light of current scholarship, and online dating.

In the following chapter, Richard L. Miller and Tyler Collette review the history of community psychology, a subdiscipline dedicated to social justice and improvement of health and well-being for individuals and communities alike. The authors briefly review early scholars who promoted the use of psychological science and practice to improve individual and community health. The authors then trace the formal emergence of community psychology to a 1963 meeting and to a resultant
set of principles that continue to guide community psychology, including recognition of and support for diversity, emphasis on studying people in realistic contexts, use of multiple methods, and commitment to translating scholarship and theory into practice and positive change. The authors then consider prominent contributors, including Kurt Lewin, Urie Bronfenbrenner, and share their optimism about the future of community psychology. Their vignettes discuss founder James Gordon Kelly, the ways social media has affected our sense of community, and the effects of the zeitgeist of the 1960s on the emergence of community psychology.

Thomas C. Greene and Paul A. Bell review the history of environmental psychology in their chapter, the study of the interactions of people with their environments. In this chapter, they first consider whether environmental psychology is foundational or fringe for the larger field. They then examine early ecological views from William James and others as well as the pioneering work of Lillian Gilbreth in the design of efficient built environments. The authors next turn to Gibson’s notion of affordances as given in direct perception as well as the lasting influence of Gibson’s ideas on the field. Holistic perspectives, from Gibson, other Gestalt psychologists, and others, continue to flow through the field, which emerged in the 1970s from a series of converging ideas and research programs. They then turn to ongoing questions of the sense of place and of sustainability, and they conclude their review with an examination of recent developments and findings. Their vignettes include a powerful case study about the importance of a view from a hospital window, challenges in evaluating and seeking solutions to aircraft noise in natural areas, and a campus service project that illustrates several principles of environmental psychology.

In this chapter, Tyler Collette and Richard L. Miller provide a review of the past century of industrial/organizational psychology, starting with Münsterberg’s scholarly predecessors, including Bryan, Harter, and Taylor, and then moving to Münsterberg himself. The chapter then evaluates contributions of the next generation of psychologists to apply psychology to work, such as James McKeen Cattell, Walter Dill Scott, Walter V. Bingham, and Elton Mayo. The authors then examine a powerful cultural event that inspired individual assessment for employment as well as other topics: World War I. Next, the authors turn to the Hawthorne studies between the wars and the effects of World War II as an inspiration industrial/organizational psychologists to expand into new areas. The field continued to grow through the twentieth century, incorporating new methods, problems, and perspectives, including employee satisfaction and well-being. Their vignettes review contributions of Bryan and Harter, the far-reaching influence of Lillian Gilbreth, and the impacts of World War I.

In the next chapter, William Douglas Woody explores the history of psychology and the law, particularly the ways that the law and people affect each other. The author opens with discussion of early perspectives on the law and human behavior, and then considers the context in which early psychologists addressed these questions, when civilian policing was new and politically motivated and when legal assumptions about human behavior guided the law. The chapter evaluates early scholars, such as Münsterberg, Arnold, and others, and then reviews early interactions of psychology into the legal system with the first Brandeis Brief, Brown v. Board of Education (1954), and the involvement of psychologists in early deception detection methods. The chapter then examines the resurgence of psychology in law in the 1970s and into the present, particularly in topics such as eyewitness testimony, the emergence of DNA evidence, and the wide proliferation of research topics in this field. The vignettes review psychologist William Marston’s most famous two creations (i.e., the polygraph and Wonder Woman), the history of Elizabeth Loftus’s journey from the study of memory for text to the study of more realistic eyewitness
memories, and the important consequences of the Hoffman report in psychology and law and across the larger discipline.

In a related chapter, Czarina Grogan and William Douglas Woody open their history of forensic psychology with a review of the many roles that forensic psychologists play in the legal system. The authors then review contributions from early practitioners, including Arnold, Münsterberg, Binet, Wertheimer, and others. The chapter then provides additional detail and history about the potential roles of forensic psychologists, including those who work in legal psychology, correctional psychology, police psychology, and criminal psychology, which includes profiling. The authors next examine historical and ongoing tensions in the field, particularly questions of clinical ethics in correctional settings, the accuracy of criminal profiling, and the myriad difficulties inherent in the insanity defense. Their vignettes address Hugo Münsterberg and his evaluation of confession evidence in a 1906 case in Chicago, the emergence of the polygraph, and a prominent failure of forensic psychology in court as illustrated by the mistaken conviction and incarceration of Timothy Masters.

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We want to thank our authors for their generous and thoughtful contributions to this e-book. The authors have had firsthand experiences in teaching and writing about their subdiscipline. In their chapters they have shared insights gained thru extensive research. Our goal is that the reader will be able to use this e-book in a very practical way to answer questions, generate ideas, and adapt the information to their lecture, discussions and conversations. I hope you will find that this book achieves its goal.

William Douglas Woody
Richard L. Miller
William J. Wozniak
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A History of the History of American Psychology: Where It Has Been and Where It Is Now

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When does the history of psychology become the present?

Any discussion of the history of psychology has to deal with the question of when the history began. Ebbinghaus’s statement that psychology has a long past but a short history belies the fact that it is not clear how long either the discipline’s past or its history is. As Benjamin (2007) noted, psychology has been practiced as long as people have been curious about behavior. The beginning of psychology’s history is taken as 1879, although he pointed out that any single date might be regarded with caution.

So where should a discussion of the history of the history of psychology begin? I have answered this difficult question by commencing with the time when psychologists began to write about the history of psychology. I further narrowed it down to a discussion of American psychology. I have made these choices because many courses on the history of psychology and many lectures as part of other courses begin with the new psychology associated with Wilhelm Wundt as it traveled across the Atlantic Ocean.

When should such a discussion end? Because one could legitimately (but not necessarily usefully) assert that history continued until this morning, I will not pretend that I have captured the flow of ideas and contexts exhaustively. Instead, I will provide some instances of the way that the domain of psychology’s history has moved into its present state. For convenience, I have examined early years of psychology as represented largely in journals. That is, what appears in journals when authors discuss psychology’s history?

Another legacy of the early 20th century is the history of psychology in autobiography. This tradition emerged with the first of the multiple volume work, *A history of psychology in autobiography* (Murchison, 1930), which portrayed the lives of psychologists who are still well known (at least among history buffs), such as James Mark Baldwin and Mary Calkins (the only woman in the volume). But it also features some psychologists who have receded in perceived importance, like Federico Kiesow and Howard Warren.

In addition, a number of books have appeared that highlight individual psychologists, such as Fancher and Rutherford’s (2012) *Pioneers of psychology: A history*. Such volumes provide the opportunity for a good pairing of autobiography and biography (e.g., Jean Piaget’s [1952] self-written chapter and a biographical chapter Beins, [2012]).

As Leahy (2002) noted, historical accounts have generally committed six “sins” in their presentation. Boring’s work that set the stage for later historical accounts created the model. First, the accounts portrayed history as an unfolding that was destined to culminate in today’s psychology. Second, the work is presentist, ignoring or demeaning early work that does not fit neatly into today’s mindset. Third, the history does not take context into account. To read much work, one would have no idea that culture and society affect the emergence of psychological ideas, just as those factors affect any set of ideas. Fourth, the histories create a pantheon of giants in the
field as if there were no other psychologists, only subsequent acolytes. Fifth, they do not rely on a complete picture of historical events, such as examinations by historians outside of psychology. And, finally, sixth, the work is historically shallow, not tracing the complex factors within the discipline.

In this chapter, I have tried to avoid such sins, although none of us can remove ourselves from our own cultural context. We know where psychology is today, and we know how it arrived (at least in part). So framing alternate paths and identifying what might have been important but has faded into history is difficult.

Nonetheless, I have tried to identify how the early generation of psychologists regarded the discipline’s history. So if I commit some of the sins that Leahy warned about, I am in the company of prominent early psychologists. As a chapter designed for teachers, however, this work is meant to show what psychologists were thinking as they pondered the discipline. It is beyond the scope of the chapter to trace the tendrils that led to the early writers on the history of psychology.

The critical assessment of the history of the history of psychology is still in infancy or, perhaps, adolescence. Half a century ago, Watson (1960) stressed that the study of psychology’s history was a neglected area. He correctly stated that it is a “study of long-time cultural events over time” (p. 254) that occur within a cultural context. This was a new way of viewing history, one that has become firmly implanted among historians of psychology.

The discipline is fortunate to have resources now that may help psychologists avoid the narrow vision of how ideas have developed. The journal *History of Psychology* has broadened the scope of awareness, with regular work that brings new perspectives and identifies historical elements beyond the narrow path that started in Leipzig and has ended in the United States. Other works, such as Pickren and Dewsbury’s *Evolving perspectives on the history of psychology* (2002), conveniently offer new ideas of many important issues affecting the unfolding of psychology.

Other approaches to the study of the history of psychology are possible. For instance, early writers published work on specific topics within the discipline, such as Hodge’s (1890) history of reflex action, Louttit’s (1931) discussion of the existence of psychological journals, Carmichael’s (1927) history of the use of mirror drawing apparatus, or Davenport’s (1900) article on the history of quantification of human performance. I have not taken this tack. Instead, this chapter is an attempt to show how the history of psychology as a discipline was viewed historically.

**Early Views of the History of Psychology**

Psychology does not exist in a vacuum. Culture affects psychologists and psychologists affect culture. As such, any treatment of history must recognize the point of view of both the psychologists and the historians involved. In a course on the history of psychology, it is helpful to understand the perspectives of the historical figures as they write about the discipline.

Interest in historical issues arose surprisingly early in the evolution of psychology. Ebbinghaus’s comment that psychology has a long past but a short history is relevant in the present discussion because many of the early historical depictions of psychology tended to focus more on non-empirical, philosophical issues than what we now recognize as psychology. For example, Strong (1894) depicted and discussed the history of psychology in terms of contributions of the ancient Greeks. He commented on the fact that early thinkers contemplated psychological issues, although his depiction of them was less than flattering as he claimed that these “notions are found among barbarous and semi-barbarous tribes in all parts of the world,” including the Homeric Greeks (pp.
Strong believed that Aristotle was the first great psychologist because he firmly established what we would recognize as a unity of mind and body.

Similarly, Baldwin’s (1905) ideas about the history of psychology began with the ancients, but he further traced the path of proto-psychology through French, English, and German philosophy. Perhaps one effect of Baldwin’s move to France after having been cashiered at Johns Hopkins University was to be alerted to the influence of Francophone philosophers on psychology to an extent greater than other historians had (or have) been.

As work like Strong’s and Baldwin’s indicate, early American psychologists took an interest in the historical development of psychological ideas. At that point in the emergence of the discipline, however, there would have been little history of the science of psychology.

Prior to the third decade of the twentieth century, historical depictions of psychology reflected the discipline’s debt to philosophy, with little attention to psychology’s scientific basis or contributions. Griffith (1921) pointed out that the early histories attended to psychology more as a mental and moral discipline than as an empirical area. He noted that the majority of Dressoir’s 1912 work involved events prior to the nineteenth century, with the remainder largely ending with the era of Johann Friedrich Herbart (1776-1841). Baldwin’s 1913 history proceeds to William James, but not beyond.

Nonetheless, Baldwin (1894) was quite aware of the scientific emergence of psychology. He recognized the philosophical forebears, but identified the natural scientists who led immediately to psychology. He attributed the physiological research that led to psychology to Hermann Lotze and Gustav Fechner. Wundt was important in the sense that he unified the experimental and the psychophysical into a coherent unity.

As of 1894, psychology was an emerging discipline in colleges and universities, as Baldwin reported. But the history was, of course, scant. So it is not surprising that his account of the past and present of psychology had highly significant elements of the present and the future.

Not long afterward, Buchner (1904) discussed the progress of psychology with respect to theory. At that point, the “old psychology” comprised three theoretical groupings. First, faculty psychology, involved the idea that there are discrete mental faculties (although Wundt disagreed that the faculties could exist in isolation). The second perspective is associationism, the idea that learning and thinking progresses through the association of ideas. The third approach is Herbartian, incorporating three facets to thought: the conscious, the unconscious, and the connection between mind and body (Boring, 1950). Buchner believed that the psychology of 1903 had moved beyond these largely philosophical perspectives.

He was uncertain about the relative currency of the physiological approach in which thought is seen as resulting from physiological activity arising from sensory processes. He seems to have been skeptical of a generic “mind” as part of psychological analysis. Rather, the individual appears to be critical in Buchner’s assessment, which is why he believed that the remaining two approaches were still viable.

These systems of psychology were the experimental and the genetic schools, both of which permitted assessment of individuals and individual differences. (The use of genetic in this context could refer to any aspect of development, either individual or species.) They were defined more by method than by perspective. Interestingly, as Buchner noted, the issues of viewpoint and method determine the content and procedure of the science when it is to be taught. As such, method is not irrelevant to content, a relation not lost on many psychologists today.
Even though the American approach to psychological research was moving away from the structural system and becoming recognizable as people view psychology today, there were still controversies that hearkened back to the past. For instance, psychologists continued to debate the nature of consciousness in ways that psychologists today regard as archaic (Buchner, 1905, 1906). In fact, William James (1904) suggested that consciousness as a thing does not exist, although it exists as a function. Such a distinction would not likely arise in discussions by today’s psychologists.

In contrast to Buchner’s one-year “histories,” Klemm’s (1914) history provided one of the first descriptions of the longer-term development of psychology’s scientific basis, clearly distinguishing the nature of problems in the natural sciences with those of psychology. For example, he noted that the natural sciences typically emerged in an attempt to understand fundamental laws associated with practical issues. Chemistry arose from attempts to turn base metals into gold, astronomy from the hope of guiding behavior astrologically. Klemm suggested that psychology did not benefit from prior practical questions.

Chiromancy (i.e., palm reading) or witchcraft are not predecessors, he said, because they did not lead to systematic study of causes and mechanisms. Instead, psychology could not emerge until its fundamental objects of study, such as will and volition, were recognized as phenomena in their own right, separate from religious or moral content.

In fact, the discussion of the nature of psychology continued into the twentieth century. Hugo Münsterberg (1899) speculated on the limits of psychology, noting that psychology could spread its tentacles widely but that psychologists should exercise caution in doing so. Psychology might lay claim to some domain, but inhabitants of that domain may very well not consider themselves psychologists.1 Interestingly, although Münsterberg was not at all averse to applying psychology, his successor at Harvard, E. G. Boring, viewed application as antithetical to scientific psychology.

Titchener (1921) was among the first psychologists whose historical writings included primarily figures currently identified as psychologists. For example, he traced the progression of psychological ideas by contrasting the thoughts of two quite different psychologists, Wilhelm Wundt and Franz Brentano.

Titchener’s argument revolved around the question of whether Brentano’s logical empiricism or Wundt’s experimental empiricism would ultimately direct the path of the science of psychology? Although Titchener ends his disquisition with the question, “Which of the two authors is right?” (p. 120), he was clearly predisposed toward Wundt.

The assessment by Titchener of historical ideas appeared as other historical work also began to explore psychology as its own discipline. Griffith (1921) posed a question that psychologists today recognize as important in historical investigations. Should one characterize historical analysis as simply a set of facts (wie es eigentlich gewesen) or as facts that are contingent on context (wie es eigentlich geworden)? In twenty-first century psychology, historical discussions focus on the latter.

According to Griffith, historical analysis could either be static, with a set of immutable facts that have been created over time; or interpretive, with recognition of the circumstances that have led to the unfolding of concepts. Griffith similarly dichotomizes the nature of psychology. Does

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1 In a rare example of humor in the psychological literature, Münsterberg (1899) used the limits of botany as an example: “The botanists may resolve to-morrow that from now on they will study the movements of the stars also; it is their private matter to choose whether they want to be botanists only or also astronomers, but they can never decide that astronomy shall become in future a part of botany, suppose they do not claim the Milky Way as a big vegetable” (p.2).
psychology encompass “almost anything from the alleged appearance of dead friends . . . to an abstruse discussion of the problem of knowing?” (p. 22). Or is it limited to a scientific description of mind and mental activity?

Clearly, Griffith supported the conclusion that scientific psychology should be limited in scope to scientific topics within an interpretive framework. Thus a history of psychology, in his view, was relatively brief (about 40 years at the time of his writing) but quite long in the development of ideas. The history will consider the evolution of the discipline, outline empirical results, and characterize the growth of empirical organized systems of psychology.

This depiction of the history of psychology matches current views. As resonant as Griffith’s thought was to today’s ideas, however, it took a long time for the psychological community to embrace fully this approach. Before the current interpretive emphasis on psychology’s history, the discipline encountered Boring’s *A history of experimental psychology*. Boring’s preface to the first edition specified that “Strange as it may seem, the present changes the past; and, as the focus and range of psychology shift in the present, new parts of the past enter into its history and other parts drop out” (1950, p. ix). As such, he recognized that interpretations may change over time. The book itself, however, follows what Griffith (1921) noted was a tale of chronological fact (*wie es eigentlich gewesen*) rather than a presentation of how context influenced psychology’s development.

Books on the history of psychology followed Boring’s lead quite consistently, citing the work of so-called great men that accompanied the emergence of psychology. This approach certainly did feature people who were, in at least a psychological sense, great; and they were indeed men. (For example, Boring cited Mary Calkins only twice in his 1950 volume, both times in footnotes, even though her distinguished career had included presidency of the American Psychological Association.)

Admittedly, Boring’s book used the indefinite article, *A*, in its title (i.e., *A history*); he recognized that it was not the only possible historical rendering of psychology. Nonetheless, contemporaneous histories showed the same trends, as do many current textbooks.

Although Boring’s volume was the monolith for decades, it did not receive universal praise in review. For example, Weld (1931) noted that the book included a great deal of interesting factual information but pointed out a long list of limitations of the work. Part of Weld’s commentary included an assertion that Boring had not really identified the essence of psychology as different from philosophy, thus psychology remained the “handmaiden to philosophy” (p. 143).

Weld’s 16-page review was striking in its detail. A significantly longer review than one sees today, it dealt with a great number of instances where Weld disagreed with Boring’s assessment of the philosophical precursors of psychology. The review concluded with three pages of corrections, some fairly trivial (e.g., the misspelling of *phenomena* on page 104, line 39 of Boring’s work) to a more substantive point (e.g., a suggested change of wording so a reader would not infer a difference on a topic between Titchener and Külpe on page 433, line 40).

Beyond the 1930s, there is little evidence among psychologists of interest in the history of the discipline, although many volumes have succeeded Boring’s work. As Watson (1960) pointed out, only 38 historically oriented articles (out of more than 2,800) appeared in the 20-year period of 1937-1956 in the *American Journal of Psychology, Journal of General Psychology*, and *Psychological Bulletin*. At that point, the journal *History of Psychology* was not even close to being on the horizon. So it is not surprising that historical analysis remained unchanged until the past decade or two.
Arbitrary dates for the beginning or ending of an era can be problematic, but this is a fact that historians live with. We choose a date as the best approximation, knowing that life is a series of measurement errors that, we hope, regress to the truth. So it can make sense to establish the era of the “new history” as 1998, the year of inception of the journal *History of Psychology*, similarly to how the “new psychology” originated with Wundt in 1879. Both of these dates are somewhat fictional because ideas arise de novo, that is, they begin anew. Wundt was not the first person to address psychological issues, and *History of Psychology* was not the first publication to include historical issues.

The convenient date for the start of the new history reflects Sokal’s (1998) discussion of why psychology needs a history journal that will discuss developments internal to the discipline as well as “insightful and well-informed analyses of the interplay of psychology with the many contexts—cultural, social, political, legal, ethical, and so forth—within which it has emerged and been practiced” (p. 4). Sokal also advocated the journal as a medium for teachers of the history of psychology to advance their practice of teaching such content. So just as Boring noted that the present changes the past, it appears that the new history will change the future.

**Vignettes**

1. **How American Psychologists Welcomed Piaget’s Theory**
Jean Piaget has arguably had a greater impact on theory and research in developmental psychology than any other single figure. When he was generating his theory of cognitive development, psychology as a discipline was in search of a coherent set of ideas. Piaget’s observations were astute, but his theory turned out to be empirically challenged: Research through the World War II era generally did not support his propositions.

If the data failed to confirm his ideas, why did it have such an impact, both immediately and in the long run? Psychologists were eager to have a coherent theory of development. By the 1920s, the era of psychology as strictly a discipline for sensation, motivation, and theoretical studies of learning was long since over. The desire to apply psychology was growing, even as many psychologists resisted taking it out of the laboratory (Benjamin, 2006). The realm of education was clearly an area crying out for psychological application (Keith, 2016).

G. Stanley Hall had initiated his Child Study Movement (1893), but by the 1920s, psychologists recognized that neither Hall’s methodology nor his applications were particularly sound (Bradbury, 1937), having produced only “odd bits and ends” (Münsterberg, 1898, p. 166). According to Katzaroff (1935), psychology in Bulgaria was in deep crisis (*eine tiefe Krise*), a sentiment that one could apply to psychology everywhere.

Piaget’s (1926, 1928, 1929, 1930, 1932) output from 1926 to 1932 was remarkable, with five substantial books on development. His ideas were translated almost immediately into English and received by American psychologists eagerly. As soon as the ideas made their transatlantic voyage, psychologists began to test them empirically. Three prominent ideas were stages of development, egocentrism, and animism. How well did they stand up to empirical verification?

Piaget proposed that his stages were universal and invariant, but the research consistently showed that children were more sophisticated in their thought than he suggested. For example, although the theory posited that children could not free themselves from egocentric thought earlier than about six years of age, the children were often able to do so (Johnson & Josey, 1931; Müller, 1932; Dennis, 1942). When children appeared to engage in egocentric thought, it was often due to linguistic limitations rather than egocentrism. Psychologists recognized, as Piaget did, that
children’s thought was different from that of adults. But the pattern of development did not seem to follow Piagetian theory.

Similarly, studies of animism, the attribution of life to inanimate objects, when tested, led to a refutation of Piaget’s suggestions. In one ingenious study, Huang (1930) performed simple magic tricks for children and asked them to speculate on what had happened. Piaget’s theory proposed that young children should attribute living motivations to inanimate objects that were part of the tricks. Children failed to produce such speculations. Huang suggested that Piaget’s objects of animistic thought (e.g., clouds) were often subjects of myths and children’s stories. Thus, when children in Piaget’s studies described clouds, they did so animistically. Johnson and Josey (1931) reported that the children in their studies did not display animistic thought at age 6; nor did they show egocentrism.

Thus, varied tests of Piagetian theory regularly failed to substantiate it. If this was the pattern, why did Piaget’s theory gain such dominance and for so long? One issue is that there was a vacuum that needed to be filled. Piaget’s ideas possessed a wide range of intuitively acceptable elements. If theories are always simpler than the complex reality they attempt to capture, simply because some aspects of the theory needed revision did not necessarily invalidate the whole approach. Further, there was no theoretical competition at the time. Perhaps if Lev Vygotsky had not died before his theory was disseminated, the path of developmental theory might have been quite different. (In addition to Vygotsky’s early death, the Soviets resisted promulgating his theory because, his opponents argued, it did not fit the Soviet model of development (Shiraev, 2011).)

In addition, psychologists, broadly speaking, might not have been aware of the failures to replicate Piaget. The number of citations of such studies indicated in APA’s PsycINFO® tends to be quite low, if the studies were cited at all. For example, research conducted in India (e.g., Menon, 1942) was not cited at all by others (Beins, in press).

Thus, even though there were empirical limitations to Piagetian theory, psychologists recognized their importance. Beilin (1992) pointed out that the number of studies conducted within the Piagetian framework is “unrivaled” (p. 191). He noted that critical evaluation of Piaget cycled regularly in the research literature, but the impact was unmistakable.

Developmentalists now note that psychology is in a post-Piagetian era and has been so for a few decades (Newcombe, 2011, 2013). Nonetheless, from a shaky empirical beginning, it emerged as the fundament of developmental psychologists in ways no other theory has matched.

2. Chomsky’s Review of Verbal Behavior: A Turning Point?
B. F. Skinner was the embodiment of the radical behaviorist. With his book Behavior of Organisms (1938), he had a major effect on the way psychologists studied and understood behavior. His book involved “reflexes,” although he defined them in a novel way that bypassed neural mechanisms. For Skinner, the reflexes involved a relation between stimulus and response.

His approach involved a descriptive system that was supposed to be free of hypotheses. Instead, a researcher would study only the environmental context and its effect on behavior. Skinner’s system was designed to lead to quantitative laws of behavior that were independent of theory. The curves that authors now use to depict operant behavior (e.g., the scalloped curves associated with fixed interval schedules) reflect Skinner’s intent. However, even in the early years of his system, Hilgard (1939) commented that Skinner’s atheoretical, non-inductive approach was “outside the trends currently popular in psychology” (p. 283), a comment that has reflected psychological research to the present day. Hilgard also noted that Skinner himself was unable to connect his approach to
existing studies of learning. Hilgard then wondered how researchers less attuned to Skinner’s system would be able to adapt their own work to his.

Nonetheless, this new system ultimately dominated research in animal learning and included, to a lesser degree, human learning. A search in September 2016 of peer-reviewed journal articles in PsycINFO® using operant condition as the subject and specifying a human population in peer-reviewed sources resulted in 2,537 hits. A search with an animal population yielded 5,286 hits. This rough search strategy is inexact, of course, but it reflects the pattern of application of operant conditioning research in the two different population types.

For the next two decades, experimental work on learning followed the path that Skinner established. During that time, Skinner’s was pretty much the only game in town, although Clark Hull, E. C. Tolman, and Edwin Guthrie offered different behavioral perspectives (Deese & Hulse, 1967).

Although operant conditioning still has a healthy presence in psychology, it has much less force in psychology than it used to. According to Spear (2007), the percentage of keywords related to behaviorism in database searches shows a peak around 1970, with a consistent decline thereafter. Five years later, the percentage of keywords associated with cognition had surpassed behavioral keywords and a decade hence, neuroscience keywords passed the slumping behavioral keywords. This pattern appears in Figure 1.

What accounts for the sea change in theoretical perspectives reflected in research? Various historians have speculated that behaviorism suffered a fatal blow with Noam Chomsky’s (1959) review of Skinner’s (1957) book Verbal Behavior. In that book, Skinner attempted to characterize the production of speech. For instance, if one is reinforced for making a verbal utterance, one is more likely to emit it in the future. If there is nobody around when one utters something, the utterance will not likely recur, due to lack of reinforcement of the utterance. And, as Skinner (1957) wrote, “any event which characteristically precedes many different reinforcers can be used as a reinforcer to bring [language] behavior under the control of all appropriate conditions...” (p, 53).

Skinner is clearly dealing with the speech act and why it emerges as it does. He is not interested in the broader issue of language with its broader sociocultural context and syntactic rules. In fact, the word language appears in the book on only three pages.

After Verbal Behavior appeared, Noam Chomsky (1959) reviewed it and, according to some, brought down the house of behaviorism. One of Chomsky’s main theses was that a mechanistic behavioral approach cannot capture the variability and complexity of actual language use. Fancher and Rutherford (2012) have pointed out that the appearance of the review has been cited as “the turning point at which behaviorism began to lose its disciplinary dominance in favor of cognitivism” (p. 392). Chomsky’s review might be the most famous review of psychological work (or of any work) ever written.

According to MacCorquodale (1970), psychologists have not rebutted the review for two general reasons. First, many behaviorists disagreed with Skinner’s approach, so they believed, perhaps
disingenuously, that Chomsky’s review of behaviorism did not apply to them. Second, the major reason “no one has replied to the review is its tone. It is ungenerous to a fault; condescending, unforgiving, obtuse, and ill-humored” (p. 84). In addition, as noted above, readers may not have understood Skinner’s ideas as he presented them (Hilgard, 1939), so they may not have had the wherewithal to counter Chomsky’s arguments. MacCorquodale also pointed out that Chomsky offered no empirical support for his ideas, which nevertheless captured the attention of psychologists. Skinner seems not to have read the review in its entirety because he perceived that his and Chomsky’s perspectives were simply irreconcilable (Fancher & Rutherford, 2012).

As always, however, the situation is never as simple as we try to make it seem. Regardless of the force of Chomsky’s review, behaviorism took considerable time to “die” after the review, as shown in Figure 1. In addition, the faint strains of the cognitive orchestra were already getting louder prior to Chomsky’s work.

For instance, Tolman’s work that left rats “buried in thought,” according to Edwin Guthrie (1952, P. 143), was clearly embedded in a cognitivist framework. Tolman’s rodents were already thinking in the 1940s. Further, starting in the late 1940s, scientists began applying information theory to learning and perception; this approach did not rely on the mechanistic aspects of operant conditioning and could characterize aspects of human behavior. Further, Heider was developing his balance theory model, which necessitated consideration of cognitive mechanisms (Wertheimer, 2012), and Piaget’s conceptualization of language development and use was in ascendance (Fancher & Rutherford, 2012).

Further, as Hunt (1993) noted, “much of the research conducted between 1920 and the 1960s dealt with minute, undeniably objective but not very enlightening topics” (p. 263). Psychologists were also becoming more interested in questions beyond the realm of learning, such as perception, motivation, problem solving and creativity, and interpersonal relations. Such topics were virtually impossible to characterize in behavioral terms.

Psychologists were looking for alternate frameworks. The confluence of emerging ideas of more cognitively-oriented neobehavioral theories, information theory and artificial intelligence approaches, and a highly cognitive theory of language development all seemed to be leading psychology to a new conceptualization of language. Thus, Chomsky’s ideas became widely known and highly cited while Skinner’s Verbal Behavior received less attention (Andresen, 1991). So perhaps it is not surprising that Skinner’s Verbal Behavior was propelled toward irrelevance by the Zeitgeist. For the next decade or two, Chomsky’s theory of transformational grammar allowed psychologists to assert that language was different from Skinner’s verbal behavior.

Cogent ideas, however, often do not die but may lie dormant for a period, a point made by Palmer (2006) regarding Skinner’s approach to speech as characterized in Verbal Behavior. He indicated that work inspired by Skinner has increased by a factor of eight over the past three decades. Palmer concluded by suggesting that operant approaches are still a significant and important element of psychology. Ironically, during the height of Chomsky’s influence in psychology, behavioral therapy seems to have experienced notable growth. Palmer speculated that Chomsky’s theory will ultimately be regarded as but a momentary impediment to behavioristic approaches, referring to the review as a “scientific flash flood, generating great excitement, wreaking havoc, but leaving behind only an arid gulch” (p. 264).

As such, the story of Chomsky’s review of Verbal Behavior as leading to the downfall of behaviorism is quite simplistic and perhaps true only in a limited sense. Behaviorism continued to exert strong effects on research for at least a decade and a half after Chomsky’s review (and longer) and,
perhaps more importantly, cognitivism was gaining strength for the decade prior to Skinner’s book and Chomsky’s review. Change in theoretical perspective is generally not swift and is certainly not a function of a single factor. Besides, important ideas may persist, hiding in plain sight.

3. E. G. Boring—Experimental Psychology’s Early Historian

Edwin G. Boring gained fame as psychology’s historian with the publication of his *History of Experimental Psychology* in 1929. In fact, although he was an active and productive scholar in several areas of psychology, his renown today is limited to his work as the first major historian of psychology.

Boring’s childhood and upbringing were as curious as he was. He wrote that his environment was matriarchal, with dominant women and weak men. The environment was a Quaker one, which may have led to his willingness to serve as a graduate mentor to Jewish students, who were not always welcomed in the discipline. Interestingly, there had been some religious tension in his family based on religion. The Orthodox Quakers had disavowed his grandmother for marrying a man from the more liberal Hicksite Quakers, and his father was a Moravian.

Because of his family’s relative poverty, his parents decided not to entertain others, so they had few visitors. In addition, his parents did not allow him to play with the “tough little gangs” (p. 28) in the neighborhood. He claims that his upbringing led to his desire both for accomplishment and for approval, motivations that he felt throughout his life.

Even though his family had quite limited finances, there was an emphasis on education, and all of his siblings were quite above the norm. Two of the children in the family became college professors, one became a high school teacher, and the other was married to a college president. From the start, Boring followed that path.

His ultimate choice of psychology as a career was based in part on happenstance, as he related in an autobiographical essay (Boring, 1952). As a student at Cornell, he studied engineering, which he did not enjoy. As part of the curriculum, however, he was free to choose a few courses in other areas. He surprised his engineering professors by selecting a psychology course, which E. B. Titchener happened to be teaching.

Five years after finishing his engineering degree, he returned to Cornell University to study with Titchener. For the remainder of his life, he was attached to Titchener and his ideas, although more fully to the former than to the latter.

When Boring entered the discipline after completing his doctorate, psychology was still searching for its identity. Boring agreed with Titchener that psychology should be a basic laboratory science. He was also a positivist who wanted to be free from the entanglements of philosophy. But the nature of psychology at that point was far from certain, with Boring navigating a middle course between the philosophers on the right and the applied psychologists on the left (Cerullo, 1988).

Even though Boring was a fan of the notion of the Zeitgeist, the spirit of the times, opining that “successful men are those who ride the Zeitgeist, not those who make it” (Samuelson, 1980, p. 480), one can argue that he also shaped the Zeitgeist in his role as a discipline builder. For example, he was involved in myriad activities that helped establish the structure of psychology as a discipline, such as intelligence testing during World War I (in spite of his opposition to applications of psychology). He also served as president of the American Psychological Association and as its secretary; and was co-editor of the oldest English-language journal of psychology, the *American Journal of Psychology* from 1926 to 1946.
As his career progressed, Boring forewent (eschewed? – just kidding) research in favor of writing books. Some of his writing dealt with theoretical or systematic issues, such as The physical dimensions of consciousness (1930), which reflected his positivistic approach to psychology. In addition, he penned books directed beyond the academic world, like Psychology for the fighting man (again in spite of his disavowal of applied psychology). He also collaborated on successful textbooks with Herbert Langfeld and Harry Weld.

Interestingly, although Boring was a committed experimentalist, he entertained ideas that would be considered strange in psychology today. For example, he seems to have been enamored of dynamic psychology and actually underwent 168 psychoanalytic sessions. And when the Psychology Department at Harvard received a donation of $75,000 to start a department of abnormal psychology, he advocated adding the word dynamic to the title to protect the gift “in case abnormal psychology should cease to exist as a separate field” (1952, p. 40). It is not clear how tongue-in-cheek his comment was, as he appended to the idea of cessation of abnormal psychology “in the next century or two.” He also claimed in his autobiographical essay that, in William Sheldon’s terms he was a 4-5-2 both in body type and temperament, also identifying one of his professors by body type. Clearly, psychology’s identity was still in flux as Boring started his career.

Boring supervised numerous graduate students who subsequently populated the landscape. He appears to have been highly committed to his students and worked to help them gain employment. One problematic aspect of his role as mentor involved placing Jewish students in academic positions. In one-on-one interactions, Boring appeared tolerant, even accepting, of Jewish students, but he was clearly a product of his times. Between the two world wars of the 20th century, anti-semitism was pronounced in the United States (and not only in Europe). Boring did not believe that people of the Jewish “race” were different for genetic or hereditary reasons. Rather, they took on the characteristics of their so-called race because of the prejudices against them. Nonetheless, he held firm views about basic Jewish characteristics, which he thought were intensified among highly intelligent and capable Jews. The stereotypical traits were, unsurprisingly, negative and were mentioned in the context of whether the person was congenial, in contrast to whether the person showed the “defects of his race” (Winston, 1998, p. 43).

It appears that one was expected to make note as to whether a student was Jewish, even when the person was free of the undesirable traits. In fact, when objectionable traits did exist in a non-Jew, it seemed to be the norm to note specifically that, in spite of the existence of those traits, the person was not Jewish. With this anti-semitic cultural undercurrent, Boring did work to secure positions for his graduate students, Jewish or not. But, as noted above, he clearly represented cultural values and beliefs of his era; some of his letters regarding his students clearly jeopardized their futures in psychology.

It is interesting to contemplate, however, how psychology might have advanced or changed if the culture of the time had not been anti-semitic. As Winston (1998) point out, young Jewish psychologists who might have entered the academy were instead rerouted to fields of practice, which may have made practice more rigorous and more empirically grounded. But the policies of the time may also have prevented new ideas from emerging that would have moved the discipline in different directions.

Nonetheless, E. G. Boring is still as an important figure in the evolution of psychology as a discipline. His positivistic tendencies do not reflect psychology in its entirety today. And his antipathy toward applied psychology is clearly an idea from the past. But his name is inextricably connected to the history and development of psychology.
References


A Short History of Research Ethics

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Most textbooks begin their coverage of research ethics with the Nuremberg Code. I will not for two reasons. First, American researchers generally disregarded the Nuremberg Code (Lederer, 2003), and second, regulations affecting the research process go back to ancient times. Most of the early ethical treatises concerned medical procedures, since many medical experiments, usually on slaves were shockingly immoral, particularly for today’s observers. For example, the Greek physician Herophilos performed over 600 vivisections on living human beings, and Cleopatra devised a means for testing the theory that it took 40 days to fully fashion a male fetus but 80 days to fashion a female fetus. Handmaidens who were sentenced to death were impregnated and then opened up at particular times of gestation (Perper & Cina, 2010).

One of the earliest treatises on medical ethics came about in 2400 BCE when the pharaoh “Amen-Hu-Tep,” who was a very talented physician, established the concept of medical ethics. He wrote several papyri that indicated that medical conduct should follow “Ma’at,” the patron of truth, justice, and universal harmony. In 1800 BCE, Hammurabi created a set of laws so that the people living in the lands he conquered would have a common experience. Hammurabi’s Code provided clear penalties for ethical breaches in medical practice. If a patient died from surgical malpractice, the surgeon’s hands would be cut off. If a slave died while receiving medical treatment, the physician was required to replace the slave with another slave. Two thousand years later, Hippocrates created the oath that is still in place in many medical schools. Several foundational principles related to research ethics that are still in use today were laid down in his code, including the famous doctrine of “do no harm” and the principle of confidentiality (IBEST, 2016).

There is also early evidence that physicians used ethical considerations in research with humans when making decisions in the proper conduct of human experimentation. For example, in the first century AD, Celsus, a Roman physician, wrote that using criminals as subjects for dangerous experiments was justified if it would benefit many other innocents (Brady & Jonsen, 1982).

In 850 CE Sheikh “Al-Tabari” wrote a large medical encyclopedia entitled Firdaus Al-Hikma (i.e., The wisdom of Heaven). In it, he described the ethical roles of the physician towards patients, the community, colleagues and assistants. Soon after, Al-Razi, a student of Al-Tabari, described ethical practices in his medical books. Those principles were derived from Islamic teachings. In the 10th Century, Ishaak Ibn Ali Al-Rahawessy wrote Physician Ethics Adaab Al-Tabib, which indicated that physicians were expected to exhibit high moral standards and was the first document to explicitly mention the patients’ rights (IBEST, 2016).

Another early contribution to research ethics came about in the fourteenth century when Pope Boniface VIII prohibited the cutting up of dead bodies, which was necessary to prevent knights from boiling the bodies of their comrades killed in the Holy Land in order to send them home for burial. This practice, though not directly related to research, had an inhibiting effect on scientific inquiry for centuries (Burke, 2013).

Despite early concerns with medical ethics, the next several centuries witnessed a number of egregious violations. Even the basic principle of “do no harm” was frequently ignored. For example, in 1714, Charles Maitland inoculated 6 prisoners with smallpox, promising them release in exchange for their participation (Wooton, 2006). In 1761, prisoners were used to test potential antidotes for hemlock, and in 1812 Joseph F. Hernández inoculated 17 prison inmates in Toulon with gonorrheal pus, managing to demonstrate the distinction between gonorrhea and syphilis. In
light of these and many other ethical breaches, Thomas Percival in his 1803 book *Medical Ethics*, proposed an early version of an IRB or Ethics Board. Percival suggested that when a physician attempts to test a new medication, he should first seek the opinions of his peers (Percival, 1803).

At this time, it was not uncommon to experiment on oneself or one’s family in order to remain ethical. For example, Edward Jenner demonstrated the value of inoculation against smallpox at the end of the 18th century. After observing milkmaids in rural England who acquired immunity after exposure to an animal form of the disease, Jenner tested the practice first on his own son (Baxby, 2004).

One of the earliest examples of “informed consent” was a study of treatments of a gunshot wound conducted by William Beaumont, a U.S. Army doctor. In his book on the *physiology of digestion*, published in 1833, he included a document signed by the patient who agreed “to assist and promote by all means in his power such philosophical or medical experiments as the said William Beaumont shall direct or cause to be made on or in the stomach of him” (p. 33). His compensation for participation was lodging and a payment of $150/year, a substantial sum in the 1830s (Harré, 1981).

Another contribution to research ethics came from Claude Bernard, a French physiologist who wrote *Introduction to the Study of Experimental Medicine* in 1865 (Bernard, 1865). In his textbook he said that it was the researcher’s duty “to perform an experiment on man whenever it can save his life, cure him or gain him some personal benefit, but wrong to perform on man an experiment which might be harmful to him to any extent, even though the result might be highly advantageous to science, i.e., to the health of others” (p. 101).

The idea of conducting medical research on animals before conducting it on humans was promoted by William Osler, a professor at Johns Hopkins. In 1907, he gave an address that noted, “the final test of every new procedure, medical or surgical, must be made on man, but never before it has been tried on animals.” He also stated that “full consent” must be obtained from the patients, based on “full knowledge of the circumstances” (Bliss, 1999).

The earliest example of turning research ethics into law occurred in Prussia in 1900. This law, known as the Berlin Code or Prussian Standard, came about as a result of a public scandal caused by Albert Neisser, a professor of dermatology at the University of Breslau. Neisser took serum from patients with syphilis and “inoculated” four healthy children and three adolescent prostitutes. All of them contracted syphilis despite the fact that consent was not obtained from any of the subjects or their parents or guardians (Neisser, 1880). The Berlin Code “absolutely” prohibited medical intervention other than diagnosis, therapy and immunization if (a) “the person in question is a minor or not fully competent on other grounds;” (b)”the person concerned has not declared unequivocally that he consents to the intervention;” and (c) ”the declaration has not been made on the basis of a proper explanation of the adverse consequences that may result from the intervention."

Despite several attempts to promote ethical practices, unethical behavior was fairly common among researchers in the 19th and first half of the 20th century. Many researchers were more concerned with their scientific endeavors than with the morality of their work. For example, in 1900 Walter Reed used 22 Spanish immigrant workers in Cuba to test the hypothesis that yellow fever could be spread by mosquito bites. In 1906, Richard Strong, a Harvard professor, infected Philippine prisoners with cholera to study the disease. Thirteen died, and the survivors received cigars. In 1913, 146 children were inoculated with syphilis in several Pennsylvania hospitals. In 1915, the US Public Health Service infected 12 prison inmates with pellagra in order to investigate
possible treatments (Etheridge, 1993) and finally, at San Quentin Prison, from 1919 to 1922, the testicles of recently executed prisoners or of goats, rams, or deer were ground up and injected into either the abdomen or the scrotum of more than 10,000 living inmates. This treatment was expected to slow the aging process and reportedly allowed inmates to sleep better, improve their appetite and make them more active and energetic (Hallinan, 2001).

In 1931, the German Ministry of the Interior issued “directives for new therapies and experiments in humans” that outlawed experimentation on patients who were dying, poor, or socially disadvantaged. It also required that a risk and benefit analysis be respected and that experiments should first be done in animals. However, in 1933 Adolph Hitler came to power, which led to the breakdown of earlier standards of ethical research conduct, completely reversing the fundamental principles of respect for study participants. The worst unethical studies were conducted at concentration camps (Lifton, 1986), which were of three types. First, research was conducted to improve survival for German troops exposed to the weapons of war (e.g., gases, incendiary bombs, radiation) or adverse weather conditions (e.g., cold, high altitude). Second, research was conducted on the efficacy of new drugs or surgical techniques. Third, research was undertaken to prove the Nazi theories of racial superiority (i.e., anti-Semitism, eugenics).

As a result of the atrocities committed by the Nazis, more systematic regulation of research came about. At the end of World War II, 23 Nazi researchers, mostly physicians, were tried before the Nuremberg Military Tribunal (Weindling, 2005). At the trial, it was important for the prosecutors to distinguish between the procedures used in Nazi experiments and those used by US wartime investigators. To do this, the judges agreed on 10 basic principles for research using human participants.

Many of the principles set forth in the Nuremberg Code continue to form the foundation for ethical practices used today, including voluntary consent of the human participant, the avoidance of unnecessary suffering or injury, limitations on the degree of risk allowed, and the opportunity for the research participant to withdraw. The ten principles outlined in the Code (Annas & Grodin, 1992) are:

1. Research participants must voluntarily consent to research participation;
2. Research aims should contribute to the good of society;
3. Research must be based on sound theory and prior animal testing;
4. Research must avoid unnecessary physical and mental suffering;
5. No research projects can go forward where serious injury and/or death are potential outcomes;
6. The degree of risk taken with research participants cannot exceed the anticipated benefits;
7. Participants must be provided with a proper environment and protection against hazards;
8. Experiments can only be conducted by scientifically qualified persons;
9. Human subjects must be allowed to discontinue their participation at any time without penalty or loss of benefits promised for participation;
10. Researchers must be prepared to terminate the experiment if there is cause to believe that continuation will be harmful or result in injury or death.

For more information about the holocaust and the Nuremburg Code, see Vignette 2.

In response to unethical experimentation, the Catholic Church decided to define the requirements needed for ethical treatment of research participants. In 1952, Pope Pius XII addressed the First International Congress on the Histopathology of the Nervous System (1952). He defined three criteria for ethical research. The first was that the medical researcher may not set aside his or her ethical obligations. Second, the interests of science and society, of the researcher, and of the individual research participants are not absolutes; rather, they are subject to a higher moral
authority and third, ethical constraints must set limits on science in order to guide it and humanize it (Pio XII, 1952). While few would argue with these principles, they do not provide clear guidance to the researcher. For that we turn to the cornerstone document on human research ethics, the Declaration of Helsinki.

The Declaration of Helsinki is a set of ethical principles regarding human experimentation developed for the medical community by the World Medical Association (Snežana, 2001). The Declaration was originally adopted on June 1964 in Helsinki, Finland, and has since undergone seven revisions. The 1975 revision clearly states that “concern for the interests of the subject must always prevail over the interests of science and society.” It also introduced the concept of oversight by an independent committee. Some of the specific issues addressed in the Declaration are:

- Research with humans should be based on laboratory and animal experimentation
- Research protocols should be reviewed by an independent committee
- Informed consent is necessary
- Research should be conducted by medically/scientifically qualified individuals
- Risks should not exceed benefits
- A clear distinction should be made between practice/treatment and research

Many countries have taken steps to create the independent committees that provide legal guidelines for ethical research practices. For example, in the United Kingdom, the National Health Service established Research Ethics Committees (RECs) whose purpose is to safeguard the rights, dignity and welfare of research participants, and in 2007, the National Research Ethics Service was created in order to provide guidance and management support to these RECs, to maintain consistency and to streamline review processes.

In addition, the UK created the Data Protection Act of 1998, which protects the privacy of individuals who participate in research. This act came about as a result of a European Union Directive that requires all EU countries to protect people’s fundamental rights and freedoms including their right to privacy with respect to the processing of personal data. The UK law requires that (a) data must be kept secure, (b) data must not be disclosed to other parties without the consent of the individual whom it is about, unless there is a legitimate reason to share the information, (c) individuals can access and correct information about themselves, (d) data can only be kept for the time needed to process it, and (e) data may only be used for the specific purposes for which it was collected.

While the Nuremberg principles were considered laudatory, many American investigators viewed them as relevant only to Nazi war crimes and not applicable to the work done by American scientists. In the United States, oversight came about as a result of a history of ethical abuses and exploitation. In 1996, Beecher published an article in the New England Journal of Medicine in which he presented 22 examples of ethically questionable studies including the infamous study at the Willowbrook State School for the Retarded where a mild strain of malaria virus was injected into children in order to study the course of the disease under controlled conditions (Dubois, 2004), and the well-publicized Tuskegee Syphilis Study. For more information about Beecher and his exposé, see Vignette 1.

The Tuskegee Syphilis study began in 1932 and was not concluded until 1972. The natural history of syphilis was observed without intervention in black, mostly illiterate, male sharecroppers. The subjects in this study gave no informed consent to the study and were not told of their diagnosis. Instead, they were led to believe they had “bad blood.” Their compensation for enrolling in the study was free medical treatment, free transportation to the clinic, meals, and burial insurance. When the study began, the treatments for syphilis were toxic, dangerous, and of uncertain efficacy.
Determining whether the benefits of treatments made up for their toxicity was an aim of the study, which also sought to characterize the different stages of the disease so that treatments appropriate to those stages could be developed. The doctors recruited 399 black men who supposedly had syphilis and 201 healthy men for comparison. In 1943, treatment with penicillin was discovered to be effective. Although this drug was safe and widely available by 1948, the Tuskegee study inexplicably continued until 1972. Those directing the research withheld information about penicillin in order to continue observing the progression of the disease until the patient’s death, and even warned the men to avoid treatment with penicillin, which was already being used by other patients in the area (Reverby, 2000).

These and other abuses have often come at the expense of vulnerable participants see Backlar, 2000), therefore undermining the trust needed by researchers to conduct research. Indeed, distrust of research is particularly common within certain segments of American society. For example, research projects such as the well-publicized Tuskegee Syphilis Study, in which the control group received sugar pills instead of penicillin, have created reasonable doubt among African-Americans as to the benevolence and value of research (Corbie-Smith, Thomas, Williams, & Moody-Ayers, 1999)

To address these ethical concerns, the Office for Protection from Research Risks, National Commission for the Protection of Human Subjects of Biomedical and Behavior Research was created and is best known for the Belmont Report (Office for Protection from Research Risks, Protection of Human Subjects, National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. 1999), which identifies three basic ethical principles and their application to research: respect for persons, beneficence, and justice. Table 1 provides the principles and their application contained in the Belmont Report. These principles form the basis for procedures insuring informed consent, assessment of risk and potential benefits, and selection of participants.

Table 1. The Belmont Report: Principles and Applications

<table>
<thead>
<tr>
<th>Principle</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respect for persons</td>
<td>Individuals are to be treated as autonomous human beings and not subjected to coercion. Individuals with diminished capacities are entitled to special protection.</td>
</tr>
<tr>
<td>Beneficence</td>
<td>Assessment of risks and benefits The nature and degree of risks and benefits must be systematically assessed.</td>
</tr>
<tr>
<td>Justice</td>
<td>Selection of subjects Fair procedures are to be employed in the selection of research participants.</td>
</tr>
</tbody>
</table>

In response to the Belmont Report, federal regulation of research became more systematic. While the primary responsibility for the ethical treatment of participants remains with the individual investigator, research in the United States conducted by individuals affiliated with universities, schools, hospitals, and many other institutions is now reviewed by a committee of individuals with diverse backgrounds who examine the proposed research project for any breach of ethical procedures. The National Research Act, Public Law 93–348 mandated review committees, commonly called Institutional Review Boards (IRBs), that require researchers to prepare an application or protocol describing various aspects of the research and to submit this protocol along with informed consent forms for approval prior to the implementation of a research project. The review of the proposed research by the IRB includes an examination of the procedure, the nature of the participants, and other relevant factors in the research design. The IRB also identifies the relevant ethical issues that may be of concern and decides what is at stake for the participant, the researcher, and the institution with which the researcher is affiliated. If there are ethical concerns, the IRB may suggest alternatives to the proposed procedures. Finally, the IRB provides the researcher with a formal statement of what must be changed in order to receive IRB approval of the research project.

The attempt by IRBs to ensure ethical practices has caused some dissatisfaction among scientists. Because IRBs are not federal agencies but are instead created by local institutions, they have come under criticism for (a) lack of standard procedures and requirements (Cohen, Dolan & Eastman, 1996); (b) delays in completing the review process (Mitchell & Steingrub, 1988); (c) creating the fear that IRBs would impose institutional sanctions on individual researchers (Brookhart, 2001); and (d) applying rules originally designed for medical studies to behavioral science research projects without acknowledging the important differences between the two (Brainard, 2001). To address these concerns, the Office of Human Subjects Protection is currently (January, 2016) preparing a revision to the rules, especially those rules related to “exempt research” which is research that does not address sensitive topics or enlist vulnerable participants. In addition to the new rules, Rosnow and his colleagues suggest that IRBs should require both board members and principal investigators to undergo training in research ethics, adopt more consistent guidelines for evaluating research protocols, place limits on the power given to the IRB, include an evaluation of the technical merit of a proposal as a means of determining risk/benefit ratios, develop a series of case studies to help sensitize members of an IRB to ethical dilemmas within the social sciences and ways they may be resolved, encourage the recruitment of women, minorities, and children as research participants, adopt provisions that ensure students receive alternatives to participation in research when the research is a class requirement, and carefully review cases where a financial or other conflict of interest may occur (Rosnow, Rotheram-Borus, Ceci, Blanck, & Koocher, 1993).

In response to a report by the American Association of Universities Task Force on Research Accountability (2000), federal agencies and individual Institutional Review Boards have taken steps to provide training for IRB staff and researchers involved in human subjects research. For example, the National Institute of Health requires has a course that is required of all NIH personnel to take a course on research ethics and makes the course and available to others. The topics covered in their course include (a) scientific integrity, (b) mentor/trainee relationships, (c) peer review, (d) data acquisition and management (e), collaborative science, (f) publication and authorship, (g) human and animal subjects, and (h) conflict of interest and commitment. The course is available at: http://researchethics.od.nih.gov/.

In summary, it is clear that ethical misconduct and restrictions on research designed to address ethical misconduct are not something new. Governments, professional societies and research
organizations along with religion and the public have all taken steps to protect those human rights often violated, as described in the chapter. By the beginning of the twentieth century, there was more than ample evidence that ethical problems involving humans in scientific experimentation required codes of conduct and government regulations. Basic principles contained in these codes included a risk versus benefit analysis, the need for informed consent, and the idea of doing no harm. However, these early codes were not widespread or sufficiently binding. One of the most complete statements about human experimentation was the Nuremberg Code, which came at a moment in history that made it internationally visible. Unfortunately, the Code did not carry the force of law. The Declaration of Helsinki was built on the Nuremberg code and carried more weight than the earlier document. The Declaration insisted that research with human subjects can only be justified when the degree of risk to participants does not exceed the humanitarian importance of the knowledge to be gained. The Declaration further increased international awareness of ethical misconduct and proposed a mechanism for the outside review of protocols. In the United States, reports of widespread mistreatment of research participants led the Department of Health and Human Services (DHHS) to issue the Belmont Report, which formed the basis for creating Institutional Review Boards for the Protection of Human Subjects in Research. From a historical perspective, the most important new features of the Institutional Review Boards created by the OHRP were the involvement of outside reviewers in approving research procedures and a mechanism of enforcement which tied compliance to the restrictions imposed by IRBs to research funding, especially that provided by government agencies.

**Vignettes**

1: **Henry K. Beecher, Whistle Blower**

In 1966, Henry Beecher published a devastating article in the *New England Journal of Medicine*. In his article he denounced 50 studies conducted in the United States that failed to meet ethical standards. He also cited a personal communication from M. H. Pappworth who had prepared a list of 500 published articles that used unethical medical experimentation.

So who was Henry Beecher? He was born in Wichita, Kansas, graduated from the University of Kansas, where he also earned a Master’s degree in chemistry, and received his medical degree from Harvard Medical School in 1932. During his early career, he spent time in Copenhagen working closely with Professor Augustus Krogh, a Nobel laureate. In 1941 he was named the Henry Isaiah Dorr Professor of Research in Anesthesia at Harvard, becoming the first occupant of an endowed chair of anesthesiology in the United States.

During World War II, he served in the United States Army in North Africa and Italy as a Lieutenant Colonel, providing expert advice in resuscitation and anesthesia. For his service he received five battle stars and the Legion of Merit. After the war, at different periods of time he served as a consultant to the Surgeon General of the United States Army, Public Health Service, Air Force, and Navy.

Dr. Beecher followed the Nuremberg Trials very closely and was appalled at the similarities between what Nazi scientists had done and what some researchers in America were doing. After studying the Nazi medical experiments, Dr. Beecher began to realize that research participants’ rights were also frequently and systematically violated in the United States. Of particular concern were experiments that exploited vulnerable participants, and this led to his now famous exposé.
In his article Beecher focused on exposing studies that were intended to expand scientific knowledge while showing little concern for how subjects would fare. Some of his examples that illustrate this point include:

**Willowbrook.** This infamous hepatitis study was conducted at the Willowbrook State School on New York's Staten Island from late 1950s until the 1970s. The study was designed to study the pathogenesis and epidemiology of hepatitis. Healthy children, who were mentally handicapped, were deliberately infected with the virus in order to test possible cures. The researchers argued that the study was ethical since several children at the school were already infected.

**Cancer research.** Chester Southam first injected live cancer cells into Ohio State Penitentiary prisoners in 1956 and then, in 1963 repeated the study with 22 elderly African-American patients at the Brooklyn Jewish Chronic Disease Hospital. The study was designed to test their immune response. The participants were only told that they were receiving “some cells” but not that they were cancer cells. Southam’s justification for withholding information was that he did not want to cause alarm.

**CNS Collapse, Example 8, p. 370.** Another study cited in Beecher’s article was designed to determine whether the central nervous system or the cardiovascular system would collapse first when patient’s blood pressure decreased. The investigators discovered that the nervous system was more sensitive. In conducting this study, patient’s brains were made deliberately hypoxic for the duration of the experiment.

**Cirrhosis, Example 14, p. 371.** This study involved giving cirrhotic patients loads of nitrogen to induce hepatic encephalopathy. The conclusion of that experiment was that “administration of these substances to patients with cirrhosis may be hazardous.”

**Melanoma, Example 18, p. 371.** In this study, the researchers transplanted a melanoma from a woman to her mother, both of whom subsequently died of metastatic melanoma.

To prevent such unethical practices, Beecher suggested that science should operate in a manner similar to U.S. courts that reject evidence obtained unconstitutionally. His suggestions were that journal editors should reject papers based on results obtained unethically. This idea that medical journal editors comprise a final common pathway in the evaluation of a study's ethics was later adopted by the International Committee of Medical Journal Editors that was originally known as the Vancouver Group (see http://www.icmje.org/)

At the time of his seminal publication, Beecher was back at Massachusetts General Hospital, where he chaired the Committee on Research and served as a member of the General Executive Committee. Dr. Beecher retired from the MGH in 1969 after gaining departmental status for the Division of Anesthesia. He was named professor emeritus at Harvard Medical School in 1970. While at Harvard, he had been instrumental in establishing one of the first committees charged with protecting the rights of patients and other volunteers involved in human studies, the precursor of our IRBs (see Kopp, 1999) for biographical information about Beecher).

2: Nuremberg Code
On December 9, 1946, in Nuremburg, Germany, an American military tribunal began a trial with 23 leading German physicians and administrators as the defendants. They were charged with war crimes for their willing participation in crimes against humanity. During World War II, German physicians conducted medical experiments on thousands of concentration camp prisoners without prisoners’ consent. To test blood clotting, they had prisoners shot. To examine the effectiveness of vaccines, they infected groups of inmates with viruses, but only treated some with the test vaccines, observing the course of the disease in the untreated inmates. To create more effective weapons, they tested poison bullets. Some of the specific experiments described during the trial were:

**High altitude experiments.** Prisoners were hanged, cutting off their oxygen supply to see how long they could survive at a high altitude. After they died they were autopsied. Those who did not die immediately were drowned and then autopsied.

**Low pressure.** Prisoners were forced into a low-pressure tank to see how long they could survive with little oxygen. Many of them died.

**Cold experiments.** Prisoners were forced to remain outdoors during winter or submerged into freezing water until they died, while the length of time it took them to die was timed. The justification for these experiments, mostly conducted at Dachau, was to determine how long a downed pilot might survive in the North Sea. No use sending a rescue team if the pilot was likely to be dead.

**Malaria Experimentation.** More than 1000 prisoners at Dachau were infected with malaria and then treated by Dr. Klaus Karl Schilling’s experimental anti-malarial drug. Over 400 died from complications with the treatment.

**Twins experiments.** In these experiments, one twin was exposed to a pathogen and killed and then autopsied to determine the natural progression of the disease. The control twin was then killed to see what the differences were.

**Aryan Skeletal Structure.** Hundreds of prisoners were killed so that scientists could examine the differences between the skeletal structure of sub-human populations and the skeletons of Aryan prototypes.

**Genetic Purity.** While not a research study, 300,000 individuals were sterilized so that genetically diseased descendants would not be produced.

Several German doctors defended their actions by claiming that their experiments were not much different from those done in America. The court decided that the American experiments paled in comparison to the actions of the German doctors that the opening statement by General Telford Taylor described as "murder, torture, and other atrocities committed in the name of science."

Available at:  [http://law2.umkc.edu/faculty/projects/ftrials/nuremberg/doctoropen.html](http://law2.umkc.edu/faculty/projects/ftrials/nuremberg/doctoropen.html). In the verdict issued on August 19, 1947, seven defendants were found guilty and sentenced to death, eight defendants were sentenced to imprisonment for ten years to life, and seven were found not
guilty. Two American doctors, Andrew Ivy and Leo Alexander worked with the prosecution team. Toward the end of the trial, they submitted a memorandum that outlined legitimate research that was the basis for a section of the final verdict entitled “Permissible Medical Experiments.” The ten points of that section were subsequently referred to as "The Nuremberg Code."

The Code has 10 basic principles of moral, ethical and legal conduct. They are:
1. Voluntary consent is required.
2. Research must benefit society. It is unethical to needlessly endanger the well being of human volunteers if other methods of investigation exist.
3. Clinical research must be preceded by animal studies.
4. Unnecessary physical and mental suffering and injury must be avoided.
5. Death and disability are to be avoided.
6. Participants have the right to end their participation in research, without penalty.
7. The research process and facilities should be able to protect the participants against even the remote possibility of injury, disability and death.
8. Experiments must be terminated at any stage of if continuation is likely to result in injury, disability or death of subjects.
9. Experiments should only be conducted by scientifically qualified persons.
10. The risks to participants in research must be minimized and balanced with the anticipated benefit of research.

Looking back, the biggest problem with the Code was compliance and enforcement. As it happens, the Code explicitly left compliance up to the experimenter. The final paragraph of the first point said, “The duty and responsibility for ascertaining the quality of the consent rests upon each individual who initiates, directs or engages in the experiment.” See at: [http://www.hhs.gov/ohrp/archive/nurcode.html](http://www.hhs.gov/ohrp/archive/nurcode.html). It is a personal duty and responsibility which may not be delegated to another with impunity." Because self-enforcement proved illusory, additional steps have been taken to ensure ethical conduct of research.

3. The Ethics of Internet Research.
The creation of the Internet has opened up a wide range of research opportunities, and comes with its own set of ethical concerns. The Internet can be seen as a social domain and as such subject to the same basic ethical precepts as research conducted face-to-face. Thus, the ethical principles that emerged from the post-war view of research regards the rights of the human subject as primary and the aims of the researcher as secondary. For example, Sharf (1998) makes the case for applying these ethical principles to research that accesses email between individuals and groups. Also, case studies have created harm, as noted by King (1996) and Turkle (1996), who suggest that they be reviewed, using the basic ethical principles created in the post-war period. This is particularly true when groups and individuals use computer-mediated communication to convey “private” material through channels that have some mechanisms to limit access.

However, when one applies the post-war principles indiscriminately, there is a risk of confusing the human subject who requires protection with the material on the Internet created by that human subject that may not require the same protection. As technology advances, it is difficult to accurately define the actual object of Internet research. For example, a researcher could use Facebook to study drinking patterns of college freshmen. Since Facebook material is readily available to the public, a researcher may give no thought to obtaining informed consent. Also, is this a privacy violation (particularly if the subjects are underage)? How does a researcher distinguish between public (i.e., usable) information and private information?
Another potential Internet source of data is the community web site where discussions among those with common interests take place. For example, on a community web site for individuals who have experienced child abuse, the community members are for the most part, searching for healing and solace. According to Eysenbach and Till (2001, p. 1103), “there is increasing evidence that researchers posting or ‘lurking’ on [certain] community web sites may be perceived as intruders and damage the communities,” If a researcher openly announces his or her presence to the group, the members’ ability to share with one another as well as with the researcher may be compromised.

Explicit concern for the ethical issues related to the Internet began in the mid-1990s. For example, in 1996, Storm King examined the growing use of the Internet for research purposes. His work examined how the American Psychological Association’s guidelines for human subjects research could be applied to emergent forms of Internet activity, including email, chat, listservs, and virtual communities. Another seminal work was Markham’s Life Online: Researching Real Experience in Virtual Space (1998) in which she explored ethical issues related to qualitative online research in a variety of disciplines including nursing, psychology, and medicine.

In 1999, the American Association for the Advancement of Science (AAAS) convened a workshop whose goal was to assess the alignment of traditional research ethics concepts to Internet research. The workshop noted the widespread utility of the Internet for research purposes including surveys, naturalistic observations, medical (telemedical) and biomedical research, health education, etc. The AAAS report outlined several ethical issues that should be considered. They are:

• Respect for persons (the foundational value for all the rest)
• Respect for privacy
• Confidentiality
• Informed consent
• Anonymity/pseudonymity (which, along with 1-4, remain complicated in internet venues)
• Risk/Benefit to participants
• Risk/Benefit to social good
• Public vs. Private space
• Subject compensation
• Justice (i.e., the fair distribution of the benefits of research)
• Cross-cultural issues
• Special/ vulnerable populations
• Deception (pro-active)
• Non-disclosure (passive)
• Conflict of interest
• Research misconduct

The AAAS report called for action from professional associations to indicate how their members should respond to the 16 concerns, and in 2001 the Board of Scientific Affairs (BSA) of the American Psychological Association created an Advisory Group on Conducting Research on the Internet. Several other professional associations have addressed the issue of Internet ethics, which can vary considerably. The arts and humanities tend to think that Internet research is more about context and representation than about “human subjects,” which suggests that such research is of less than minimal harm since it does not engage actual persons. Social scientists tend to consider the context and the source of Internet data. For example, a blog does not meet the definition of human subject described in 45 C.F.R. § 46.102f (2009). Thus, researchers do not need to obtain
consent to use text from a blog. The basis for this argument is the notion that the Internet is a “public park” and open for observation by all. In contrast, the community website described earlier is quite different. To determine which ethical rules need to apply, researchers should consider context, intent, sensitivity of data, and expectations of the Internet participants (Sveninngsson, 2004).

By the mid 2000s, three major anthologies had been published, and a growing consensus began to emerge in the literature base. Common to most of the works outlining ethical principles was the requirement that investigators consider the following (Elgesem, 2002):

• Is there only minimal risk of harm?
• Are the integrity and the autonomy for research subjects adequately secured?
• Is the method adequate?
• Is the knowledge produced sufficiently relevant?

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The History of the Teaching of Psychology: Or, What Was Old is New Again

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Let’s cut to the chase; by the end of this chapter, you will know that I am not a historian. Although I have an interest in the history of psychology and I have taught a capstone course titled History and Systems in Psychology, teaching a course in the history and systems of psychology is not the same as writing a chapter on the history of the teaching of psychology. When updating the history of psychology over time, “the modern history of psychology cannot, however, be written merely by adding chapters to the older history. Strange as it may seem, the present changes the past; and, as the focus and range of psychology shift in the present, new parts of the past enter into its history and other parts drop out” (Boring, 1950, p. ix). Even though Puente, Matthews, and Brewer (1992) presented outstanding work in their edited book Teaching Psychology in America: A History, there remains more of the history of the teaching of psychology to be told.

In my own study of the history of the teaching of psychology, I believe that by studying the artifacts of history, interested parties can gain insight about where the teaching of psychology is going by studying where the teaching of psychology has been. For my own analysis, it appears that what was old is new again. As my chief organizational scheme, I address the following historical categories: (a) the founding of psychological laboratories, (b) organizations and conferences, (c) textbooks and journals, (d) curriculum conferences, and (e) early teaching experiences.

Laboratories

One aspect of the history of the teaching of psychology may be observed in the establishment of psychological laboratories in the U.S. Wilhelm Wundt was the founder of the first psychology laboratory for research purposes in 1879 (demonstration laboratories existed a few years earlier in multiple locations; Hilgard, 1987). Training graduate students in the science of psychology, whether in the 1880s or today, involved the teaching of research methods. The first six laboratories established in the U.S. were (from Hilgard, 1987):

1883, Johns Hopkins University, by G. Stanley Hall
1888, Indiana University, by William L. Bryan
1888, University of Pennsylvania, by J. McKeen Cattell
1888, University of Wisconsin, by Joseph Jastrow
1889, Clark University, by E. C. Sanford
1889, University of Nebraska, by H. K. Wolfe

Thus, even before the formation of the American Psychological Association in 1892, a strong trend was emerging in the U.S. in the establishment of psychological laboratories dedicated to the advancement of research. These laboratories advanced our knowledge of human behavior only because the methods of psychology were being taught to students.

Organizations and Conferences

G. Stanley Hall founded the American Psychological Association (APA) in 1892, and it included 12 charter members. In examining the annual meeting records from APA in those early years, it appears to have taken a while for matters of teaching to reach the agenda. “The first genuine APA session devoted to the teaching of psychology occurred at the 1899 meeting, when a discussion was held on the question of how psychology should be taught” (Goodwin, 1992, p. 331). The topic of the introductory or first course in psychology was mentioned in the APA archives in some of
those early years, but not much else about the teaching of psychology. In fact, “between 1892 and 1945, with the possible exception of an interest in how the first course was to be taught, enhancing the teaching of psychology was not a priority of the APA, at least in the program content of the annual meetings” (Goodwin, 1992, pp. 340-341). With the founding of the Division of the Teaching of Psychology in 1946 (APA Division Two), that trend was about to change.

The history of the teaching of psychology can also be traced by its organizations such as the current Society for the Teaching of Psychology (STP) and its publications such as Teaching of Psychology (Griggs & Collisson, 2013). It is unclear how APA’s Division of the Teaching of Psychology -- later renamed the Society for the Teaching of Psychology -- became Division Two of APA. But one account suggests that Division One (General Psychology) and Division Two (Teaching of Psychology) were numbered in that fashion because they may appeal to individuals who did not fit into the more specialized divisions (Wight & Davis, 1992). In fact, it may be this commonality in the importance of teaching psychology is ultimately the tie that binds. That is, the future of professional psychology fields (clinical, counseling, psychotherapy, industrial/organizational, and so on) depends upon psychology baccalaureates who are ready for the transition to graduate training -- both in knowledge retained and skills honed. Given that 75% of psychology baccalaureates do not pursue graduate education in psychology, it is essential that those individuals be prepared for the wide-ranging opportunities afforded to them (American Psychological Association, 2013; Landrum, 2014). Thinking about the current opportunities to educate 1.2-1.6 million undergraduates in introductory psychology in the U.S. annually, for most of these students it is their once-in-a-lifetime exposure to scientific psychology and the benefits that can accrue with insights into human behavior. The introductory psychology course has been viewed as a lynchpin for some time and continues to serve as our most visible bully pulpit for the advancement of psychology.

The importance of teaching conferences is unparalleled in the history of the teaching of psychology. Starting with the Mid-America Conference for Teachers of Psychology (MACTOP) in 1984, Beins (2005) observed that teaching conferences allow individuals of many different interests to come together to learn about and discuss teaching techniques that could be widely applied. Even though the discipline of psychology may be fragmented, it is the teaching of psychology that is the commonality across specialty areas and training models. Even though MACTOP no longer exists, its legacy is clear; many statewide and regional teaching of psychology conferences are active and flourishing, and each of the major regional psychology associations (NEPA, EPA, SEPA, MPA, RMPA, SWPA, WPA) features teaching of psychology sessions at their annual meetings.

Textbooks and Journals

The emergence of the teaching of psychology has to be viewed in the context of psychology emerging from philosophy. In fact, psychology courses were often seen as the method of entering into higher-level philosophy courses (Fuchs, 2000). Thus, prior to 1900, there were “fuzzy boundaries” with regard to philosophy courses and psychology courses, and therefore, textbooks and publications have overlapping boundaries as well. If the measure of the teaching of psychology includes the mention of psychology in textbooks, Weiten and Wight (1992) observed that the first American textbook to do so was likely by Brattle, written in Latin and made available in 1696 (as cited in Fay, 1939). Frederick Rauch published the first American textbook titled Psychology in 1840 (Hilgard, 1987), pre-dating the “formal establishment” of psychology by Wundt in Leipzig by 39 years. Wilhelm Wundt was the founder of the first psychological journal in the world, Philosophical Studies, in 1881; as for the first journal published in psychology in the U.S., it was the American Journal of Psychology, founded in 1887 by G. Stanley Hall.
Scholars in the teaching of psychology can also point to the founding of APA Division Two Division of the Teaching of Psychology in 1946 (later renamed Society for the Teaching of Psychology; STP). This division launched a newsletter in November 1950, and over the next 24 years 59 issues of the divisional newsletter were published (Daniel, 1999). Robert S. Daniel became the editor of the Division Two newsletter in 1971, and by 1974 he served as the editor of the newly launched (now venerable) divisional journal Teaching of Psychology (Wight & Davis, 1992. Teaching of Psychology is a well-established and premier outlet for scholarship concerning the teaching of psychology; there are additional journal outlets as well (Psychology Learning & Teaching, Scholarship of Teaching and Learning in Psychology).

Curriculum Conferences

The value of curriculum conferences dedicated to the psychology curriculum has been addressed by others (see Brewer, 2006; Mayo, 2010; McGovern, 1993), so only a brief review here is necessary. In 1951 the first national conference concerning the undergraduate psychology curriculum was held at Cornell University, with the conference report published a year later. Continuing in this theme, psychologists again met at the University of Michigan in 1960 and published their report a year later. Following a national survey of undergraduate departments of psychology in 1973, Kulik published a descriptive report of curricular variations across the U.S. In 1991 psychologists met again in person at St. Mary’s College in Maryland, and the outcomes from this conference resulted in the Handbook for Enhancing Undergraduate Education in Psychology (McGovern, 1993). The Psychology Partnerships Project conference, hosted by James Madison University in 1999, included significant components of curriculum review and discussion, but it was not exclusively dedicated to curriculum discussions. Most recently, a 2008 conference hosted by the University of Puget Sound had participants discussing not only the undergraduate psychology curriculum, but also psychological literacy, the scientist-educator model, teaching and technology, desired outcomes from an undergraduate psychology education, and more. The Puget Sound efforts resulted in the Halpern (2010) edited book Undergraduate Education in Psychology: A Blueprint for the Future of the Discipline. Because many of the resources about the history of the teaching of psychology pre-date this 2008 conference, for more information about the Puget Sound conference, see vignette box 1.

William James at Harvard offered instruction in physiological psychology in 1875, and in that same year he taught a graduate course titled ‘The Relation between Physiology and Psychology.’ Both James and Wundt had laboratories for psychology demonstrations in 1875, but in 1879 that Wilhelm Wundt formally opened a psychology research laboratory in Leipzig, Germany (Boring, 1950). The historical preference of Wundt as the founder of psychology compared to James may lie in the teaching vs. research demands in academia that remain current today. That is, to identify Wundt as the founder implicitly demonstrates the importance of research in the new and emerging discipline of psychology. Also, the “founding” title may have also been influenced by those writing about the history of psychology, such as E.G. Boring (who was a student of Titchener, and Titchener was a student of Wundt). It is this date -- 1879 -- that many historians in psychology note as the formal founding of the discipline. With a new discipline in place, the introductory first course was not far behind.

At Harvard during the 1900-1901 academic year, Hugo Munsterberg from the Department of Philosophy offered a year-long “General Introduction to Philosophy” course, with the first half-year devoted to psychology. The text used for that half-year was by William James (1892), called Psychology: The briefer course. E. C. Sanford’s idea (founder of the psychology laboratory at Clark University in 1889) for the first course in psychology was to make psychological knowledge directly
relevant to the student. In his words, “What sort of psychological knowledge are these young men or young women most likely to find useful, immediately or remotely, in the actual affairs of life?” (Sanford, 1906, p. 118). It may seem that undergraduate psychology education has strayed quite a bit from advice gems offered by early leaders like Sanford (1906) and Seashore (1910). For more on what’s old is new again, see the vignette box 2.

Conclusion

The key points in this chapter include:

• Some of the earliest teaching of psychology occurred in psychology’s first laboratories.
• APA deserves significant credit for the formulation and support of Division Two, as that organization (STP) has evolved into serving APA and non-APA members worldwide.
• Textbooks and journals stand as clear and identifiable artifacts in the development of the teaching of psychology.
• Conferences centered around curriculum matters have allowed educators the time and space to think deeply about what psychology majors should know and be able to do, and to consider by what means to provide meaningful learning experiences for students.
• In many ways, the early teachers of psychology got it right, understanding that the introductory course could make a difference in students’ lives, the focus on skills, designing course tasks to have desirable difficulties, wanting movable chairs in the classroom, and even suggesting a precursor to the flipped classroom.

In addition to the sectional summaries provided above, I would add that teaching of psychology conferences continue to be as important today as they were in the last century. It seems as the world (and the teaching of psychology) becomes more digital, the experiences of educators at face-to-face conferences are more valuable and effective.

Any author of a chapter about the history of the teaching of psychology would be remiss if not to mention one of the legends in the teaching of psychology, Bill McKeachie of the University of Michigan. Notice that even though written a quarter-century ago, McKeachie’s analysis and recommendations are just as cogent 25 years later:

We now realize that the variables influencing learning are almost numberless. Because their interactions change from day to day, we need to move from pretest-posttest measures to studies of ongoing processes, from single-variable studies to individual students acting in groups, and from studies of outcomes of learning to studies of what goes on in the thoughts, feelings, and desires of students (McKeachie, 1990, p. 197)

I hope that as the teaching of psychology moves forward, educators will work to continuously improve our collective understanding of the teaching of psychology. The variables are complex and the interactions between person and environment can provide clues in identifying those evidence-based instructional practices. Historical artifacts will continue to provide important clues throughout time, and these clues are particularly important when exploring the history of the teaching of psychology.
Vignettes

1. The National Conference on Undergraduate Education in Psychology (NCUEP):

Five Days at the University of Puget Sound in the Summer of 2008

Under the leadership of Diane Halpern (2010), the National Conference on Undergraduate Education in Psychology occurred during the summer of 2008 for five days at the University of Puget Sound. Of course, much planning occurred prior to arriving on-site, as the precursor to this conference was the St. Mary’s College of Maryland conference in 1991. At the University of Puget Sound conference, Halpern led a stellar steering committee, and each member of the steering committee served on one of the nine working groups. Each working group was led by a faculty member but was assisted by a member of the steering committee (—i.e., in the list below, each faculty lead is followed by steering committee member). Those nine groups, with faculty leaders and steering committee members, attempted to answer the following questions:

Working Group 1: Why do we need to rethink how we educate students in psychology? Tom McGovern, Wally Dixon

Working Group 2: Who is teaching psychology, and what is the quality of instruction? Dan Bernstein, Courtney Rocheleau

Working Group 3: What is being taught and learned in psychology courses, including the impact of fragmentation of psychology toward specialized disciplinary societies and new interdisciplinary specialties (e.g., neuroscience) on the psychology major? Dana Dunn, Charles Brewer

Working Group 4: Who are the students in undergraduate psychology, and how do we challenge the traditional one-size-fits-all curricular approach to meeting the needs of a diverse student population? Linh Littleford, Bill Buskist

Working Group 5: When and where are students taking psychology courses? Jeff Andre, Ann Ewing

Working Group 6: What are the modes of teaching for different content, contexts, and students? Steve Chew, Mary Kite

Working Group 7: How can we promote learning with new technologies that include interactive learning agents and online programs that teach collaborative peer evaluation, game-based models of learning, and virtual learning environments among others? Keith Millis, Yolanda Harper

Working Group 8: How are we using knowledge gained over the last decade about effective teaching and learning? Frank Worrell, Bettina Casad

Working Group 9: What are the desired outcomes of an undergraduate education in psychology? Eric Landrum, Barney Beins

Ultimately, each working group prepared a chapter about the assigned topic that included specific recommendations for the future of undergraduate psychology education. Thus, 80 psychologists and academics, through working group meetings and plenary sessions, were ably led by Halpern and experienced staff members from APA’s Education Directorate to work toward this goal: “we envisioned a future for higher education in which change could be brought about in a sound, scientific way that would yield long-lasting positive benefits for all of the stakeholders” (Halpern, 2010, p. 3).
2. Advice More than a Century Old:

*Recommendations on Teaching the Elementary Course in Psychology by C. E. Seashore (1910)*

Writing from the University of Iowa in 1910, Carl Seashore filed a report with the American Psychological Association that was subsequently published in Psychological Monographs: General and Applied. This general report was the accumulation of subcommittee reports, and Seashore was clear that the opinions expressed in this general report were largely his own.

Having said that, many of the observations made by Seashore about the introductory psychology course still hold true and are refreshingly honest over a century later (at least in my opinion). All of the following are direct quotes—enjoy!

“"The first course in psychology should be essentially the same in content and method whether it is taken merely for general culture, as a foundation for philosophical studies, or in the preparation for specific vocations; such as, education, theology, art, law, or medicine’” (p. 81).

“Keep the student doing things, instead of merely listening, reading, or seeing them done” (p. 83).

“Be reasonable and specific in all assignments and demand results. Set your task so that it may be performed when the assignment is made, and so that you may have constant information about the fidelity in work and the quality of results. The sophomore is an elementary student and psychology is necessarily somewhat abstract. Nearly every young teacher makes the mistake of treating the elementary class by the method of which he has become enamored as a graduate student. There should be a radical difference in the methods of the elementary course and following courses in psychology. It is absurd to treat the sophomore in psychology as a research student.

Insist upon the mastering of difficulties. One of the greatest wastes in college teaching is that we allow the student to shift when he encounters difficulty. Show him where the difficulty lies, spur him on, and hold him to the task” (p. 84).

“All teachers who cannot find good text books should at once publish their own!” (p. 85)

“"The lecture is one of the best means of personalizing the instruction, yet it is one of the most abused methods. In the elementary course in psychology the mere information lecture should be tabooed” (pp. 85-86).

“The elementary lecture room should be a well ventilated and well lighted hall furnished with movable desk chairs, blackboards, chart cases, projection lantern, gas, electric power, etc.” (p. 90).

“The teacher of psychology, as compared with the teachers of other college subjects, needs an exceptionally thorough preparation” (p. 90).

“Psychology is perhaps unequalled by other college subjects in its power to influence the life of the student; the introduction to this subject should, therefore, be taught by mature members of the department” (p. 91).

“"The teacher is everything.’ In this there is great truth. As we have learned to respect the individuality of the pupil, we must learn to regard the individuality of the teacher”” (p. 91).

Note. Seashore clearly used sexist language in his 1910 writings by always referring to the faculty member or the student as he or him. I have shared these quotes verbatim, meaning that the sexist references are still included. This is not to say that I mean to be sexist, but in a chapter on the
history of the teaching of psychology, this is an important point to make. It may be true that there were very few female students at the University of Iowa in 1910, but there definitely were some female students on campus, and some females were likely enrolled in psychology courses. Fortunately, we are much more sensitive to the existence of sexism today compared to a century ago.

References


The purpose of this chapter is to provide information about women pioneers in psychology, many of whom may not be included in most introductory texts. I have organized the vignettes alphabetically by last name. Next to each name is a suggestion about topics in introductory psychology to which their work is most relevant. Although recent scholarship in the history of psychology has recovered the stories of some of these women pioneers, others remain relatively unknown, with their contributions to the discipline unsung. This chapter is an attempt to address these oversights.

The 19th century brought enormous gains in the education of women. By 1865 with the founding of Vassar College, a full four-year collegiate education finally became available only 200 years after Harvard and the College of William and Mary offered the opportunity to men. The notion of republican motherhood, that better educated women would be better wives and mothers and raise better sons for the republic, justified offering collegiate education to women. Many of the women who chose to pursue this new college education had other ideas and aspired to advanced degrees (Milar, 2000; Rossiter, 1982, Solomon, 1985).

These advances in women’s education coincided with psychology’s evolution as an academic discipline. Between 1892 and 1903 psychology ranked fourth among the sciences in the production of PhDs (Camfield, 1973; Napoli, 1981); some of these new PhDs were women. Scarborough and Furumoto (1987) have suggested that psychology’s acceptance of women to graduate programs was an advantage to the new science and helped to establish its legitimacy. Some women who pursued graduate study did not receive the degrees they had earned, among them Mary Whiton Calkins and Lillien Jane Martin who, despite lack of the formal degree, gained acceptance into the professional ranks of the American Psychological Association. Calkins and Christine Ladd-Franklin were elected in 1893, the second year of the organization. By 1900, eight women were members of the APA (Milar, 2000; Scarborough, 1992).

Even with the doctoral degree, gender restricted the professional roles available to women. Single women found academic positions primarily at women’s colleges which had heavy teaching loads and little research support. Until about mid-century, academic positions even at women’s colleges were available to few married women due to expectations they should devote themselves to their husbands and families. After World War II, nepotism rules excluded most women married to other academics from positions at the same college or university. Applied areas of psychology, perceived as lower status than academic positions, were more welcoming to women (Johnston & Johnson, 2008; Rossiter, 1982).

Calkins, Mary Whiton (1863-1930) Topics: History, Memory.
Born, in 1863, Mary Whiton Calkins grew up in Buffalo, NY. In 1880, her father, Wolcott Calkins, a Presbyterian minister, accepted a pastorate in Newton, Massachusetts. Wolcott actively directed the education of Mary, her younger sister, and three younger brothers and in 1882 she matriculated at Smith College with sophomore standing. She graduated in 1884 having concentrated her studies in classics and philosophy. Wellesley College hired Calkins to teach Greek in 1887. In 1890, the Department of Philosophy expressed interest in adding course work in psychology. They offered Calkins, who was recognized as an effective teacher, the philosophy department position contingent upon her getting some preparation in psychology. Although this may sound unusual, it was not atypical for women’s colleges to recruit faculty in this way. Further,
in the late 19th century psychology was a sub-field of philosophy rather than a separate discipline. Calkins was interested and agreed to get some training in psychology but finding graduate level training particularly training that would include laboratory work was not easy, and especially not for a woman. Harvard did have a laboratory; so Calkins approached William James and Josiah Royce for permission to attend their seminars. Both James and Royce were enthusiastic but President Charles Eliot of Harvard would not give his permission because Harvard did not admit women. James lobbied on her behalf as did her father and Wellesley president Ada Comstock, and in October 1890 Harvard granted Calkins permission to study with James and Royce (Scarborough & Furumoto, 1987).

In the fall of 1892, Hugo Munsterberg arrived at Harvard from the University of Freiburg, and Harvard granted Calkins’s petition to study in his laboratory with the careful specification that she was a guest not a registered student. She worked for three years with Münsterberg and carried out research on memory using the paired associates technique, which she invented. She presented a color patch for 4s followed by a number also for 4s; each pair separated by 8s, and then after a series of between 7 and 12 pairs, the participant was asked to recall the number when presented with the color. In further experiments, she also presented color and number pairs simultaneously with similar results: better recall for the more frequently presented pairs. She found primacy and recency effects as well; participants remembered the first and last pairs better than the intervening pairs (Calkins, 1896).

In 1895 Calkins submitted her dissertation to the philosophy department; it was approved, and subsequently Professors Münsterberg, James, Royce, Palmer, and Santayana held an un-authorized oral examination and conveyed their unanimous decision that she had satisfied all the requirements for the PhD to the Harvard Corporation, which acknowledged the communication without further comment. (Furumoto, 1979,1980; Scarborough & Furumoto, 1987). In 1902 Radcliffe College offered Calkins and three other women a PhD degree. Radcliffe, which began as the “Harvard Annex,” was solely an undergraduate college allowing women students to take courses with Harvard professors. Women who did graduate work carried out that work at Harvard (Scarborough & Furumoto, 1987). Feeling strongly that awarding different degrees to men and women for completion of the same work was wrong, Calkins refused to accept the Radcliffe PhD (Furumoto, 1980). In 1927, Harvard also denied a petition by a number of prominent Harvard alumni to have a Harvard PhD awarded to Calkins. Harvard did not award PhDs to women until 1963 (Furumoto, 1979; Scarborough & Furumoto, 1987).

In 1905 Mary Calkins became the first woman president of the American Psychological Association. Her interests had always been more about the philosophical than experimental side of psychology and with younger colleagues willing and able to take over the laboratory courses, Calkins concentrated on the development of her system of “self psychology” (see e.g., Calkins, 1930). In 1918 she became the first woman president of the American Philosophical Association. She retired from Wellesley in 1929 and died in 1930.

Clark, Mamie Phipps (1917-1983) Topics: Race. Prejudice. Education

The 1954 Supreme Court decision in Brown v Board of Education of Topeka, which outlawed segregation in public schools was strongly influenced by social science research, particularly the research of Kenneth and Mamie Phipps Clark on racial identification and racial preference in African-American children (1940; 1947; 1950). Although Kenneth received most of the attention for this research, he acknowledged that it was an extension of Mamie’s master’s thesis work. He stated, “The record should show that was Mamie’s primary project that I crashed. I sort of piggybacked on it.” (Nyman, 2010, p.76). Mamie Katherine Phipps grew up in Hot Springs,
Arkansas the daughter of a physician, Harold Phipps and his wife, Katie. She entered Howard University at the age of 16 to study mathematics but decided to switch to psychology persuaded by the lack of welcome from the mathematics department and the encouragement of a senior psychology major, Kenneth Clark, whom she married just three years later. For her master’s degree from Howard, she studied self-identification of black nursery school children in Washington DC, and then completed her PhD in 1943 in psychology at Columbia University, doing a factor analysis of the intelligence of public school children under the direction of Henry Garrett. The last time she was to see Garrett was in a courtroom in which they were testifying on opposite sides in the Davis v County School Board of Prince Edward County, Virginia (1952) case, one of the school segregation cases combined into Brown v. Board of Education of Topeka (1954, see Clark, 1983; Croizet, 2008).

After some unsatisfactory positions, first with the American Public Health Association and then with the Office of War Information, she began doing psychological testing at Riverdale Home for Children in New York (Lal, 2002). This position helped focus her resolve on mustering more psychological and psychiatric resources for the children of Harlem. In March 1946, with a loan from her father, she and Kenneth opened the Northside Center for Child Development (originally called the Northside Testing and Consultation Center). She devoted the rest of her life as an activist and an advocate for social services for disadvantaged children serving on advisory boards to the Harlem Youth Opportunities Unlimited project, and The National Headstart Planning Committee of the Office of Economic Opportunity. She retired from the Northside Center in 1979 and died in 1983 of lung cancer (Rutherford, 2012).


As an undergraduate and masters degree student at Smith College, Eleanor Jack studied the perception theories of one of the founders of Gestalt Psychology, Kurt Koffka, although her initial interest was in comparative psychology. Seeking a graduate degree, she served as a teaching assistant for James J. Gibson, whom she married in 1932. After completing her Master’s degree in 1933 she became an instructor at Smith. In 1935, she entered Yale University with the intention of doing her PhD work with comparative psychologist Robert Yerkes, but he told her he did not allow women in his lab, so she studied verbal learning instead with Clark Hull, earned her PhD in 1938, and returned to Smith as an assistant professor (Caudle, 1990; Pick, 1992). After World War II, J. J. Gibson wanted more opportunities for research and for mentoring graduate students, and he accepted a full professorship at Cornell, but nepotism rules prohibited Eleanor from obtaining a faculty position. She became a research associate on a field study of experimental neurosis in goats and sheep. Experimental neurosis didn’t interest her, but observing the mother goats with their kids did, and, because goats usually have twins, she began some rearing experiments. In her first attempt to study the influence of rearing conditions on kids, she separated the twins immediately after birth, before the mother could lick or care for the first twin, and she assigned the first twin to the experimental condition. Gibson washed the first kid with detergent and then didn’t know quite what to do with it while the next kid was being born; the farm manager told her to put it on a high shelf. She was afraid it would fall off, but it did not, and that event stimulated her interest in the visual cliff phenomenon. Unfortunately the carefully designed rearing experiments came to naught because the farm manager gave away all of the kids who had remained with their mothers (the controls) to families looking for Easter presents for their children. Eleanor quit her position at the research farm in frustration (Eppler, 1998).

She approached a young researcher in the department, Richard Walk, about writing a grant to do rearing experiments with rats and they compared dark-reared and light-reared animals on an apparatus they named the visual cliff. The apparatus consisted of a piece of glass divided by a
narrow board. On one side underneath the glass a red and white tablecloth covered a surface close to the glass, while on the other side it covered the floor, which was much farther away, giving the illusion of a cliff. Rats placed on a board in the center chose either the shallow or the deep side which served as measure of depth perception. This led to more grant proposals and testing of more species: chicks, kittens, puppies and eventually human infants (Pick, 2012; Rodkey, 2015).

Gibson planned to start a book on perceptual learning and development but was convinced to join a research project on reading, especially learning to read. She saw this as an extension of her perception work, and her collaboration with faculty with interests in linguistics and cognitive development proved fruitful. She eventually finished both her book Principles of Perceptual Learning and Development (1969) and The Psychology of Reading, co-authored with Harry Levin (1975).

After J. J. Gibson's retirement in 1965, she became a tenured full professor at Cornell. She received many honors and awards, including election to the National Academy of Sciences in 1971, and the National Medal of Science (rarely awarded to psychologists) in 1992; she died in 2002 (Pick, 2012; Rodkey, 2010).

Hollingworth, Leta (1886-1939) Topics: Gender. Physiological psychology. Educational psychology.

Leta Anna Stetter, born May 25, 1886 in rural Nebraska, graduated first in her class at the University of Nebraska in 1906. In December of 1908 she moved to New York City to marry her University of Nebraska classmate Harry L. Hollingworth who was finishing his PhD at Columbia University. In 1909 he took a position teaching at Barnard College. Having taught high school in Nebraska before her marriage, Leta hoped to find a high school teaching position in New York in order to save money for graduate study; the city of New York did not hire married women as teachers, and the Hollingworths struggled financially. In 1911 the Coca-Cola company hired Harry to investigate the effects of caffeine on mental and motor tasks. Coca-Cola was facing a trial on charges that they had violated the Pure Food and Drug Act by using caffeine in their formula (see Benjamin, Rogers, & Rosenbaum, 1991 for details). Leta became assistant director of the research project and the income allowed her to attend graduate school. She earned a M.A. in education in 1913 and a Ph.D in educational psychology in 1916 from Columbia University studying with E. L. Thorndike (Held, 2010a; Hollingworth, 1943/1990).

Leta Hollingworth’s dissertation research grew out of her observations during the caffeine investigations. Women participants recorded their menstrual periods in case it was a variable that influenced their performance. Leta found no differences in the performance of men and women participants attributable to the menstrual cycle. Employing the same testing procedures as used in the caffeine research, she compared the mental and motor performance of two men and six women daily for 2-3 months; and tested another 17 women every third day for 30 days. No rhythmic variations in performance were observable due to menses. Functional Periodicity reported the results of her investigations and served as her doctoral dissertation; she published it in 1914, two years prior to satisfying all of the formal requirement for the PhD (Hollingworth, 1914a; Hollingworth, 1943/1990).

Her conclusion in Functional Periodicity echoes the language of Helen Thompson Woolley's (1910) assessment of sex differences research: "It seems appropriate and desirable that women should investigate these matters experimentally, now that the opportunity for training and research is open to them. Thus, in time, may be written a psychology of woman based on truth, not on
opinion; on precise, not on anecdotal evidence; on accurate data rather than on remnants of magic" (Hollingworth, 1914a, p. 92).

Another area of sex differences research Leta Hollingworth investigated was the variability hypothesis. Thorndike, her doctoral advisor, was a vocal proponent of this notion that males were the more variable sex, possessing individuals both higher and lower on the distribution of mental and physical traits than females who were more homogeneous. Viewed as a mechanism of evolutionary progress, greater variability also signified male superiority (Shields, 1975a). In two investigations Hollingworth challenged the variability hypothesis. With Helen Montague (Montague & Hollingworth, 1914), she examined birth weight and birth length as well as some cranial measurement of 1000 male and 1000 female neonates at the New York Infirmary for Women and Children. Although the males were larger, females were the more variable (Held, 2010a; Shields, 1975b). In a review (Hollingworth, 1914b), she argued that the evidence that men are more variable in physical traits is equivocal; that even if men are more variable physically, it does not follow that they are also more variable in mental traits. Further, if they are more variable in mental traits, that variability is more likely a reflection of the different opportunities and social roles afforded to the two sexes than to inherent biological differences (p. 529). Leta Hollingworth made major contributions not only in the area of what is now known as psychology of women, but also in clinical and in educational psychology in her study of gifted children. She died of abdominal cancer in 1939 at the age of 53 (see Benjamin & Shields, 1990; Held, 2010a).


In 1953 Evelyn Hooker applied for a National Institute of Mental Health (NIMH) grant to conduct research on “normal homosexuals.” During this period of American history, homosexuality was a crime in many states and the term “normal homosexual” was thought to be an oxymoron. A variety of treatments to attempt to “cure” homosexuality were employed including lobotomies, electroshock, chemical castration with hormonal treatment, or aversive conditioning (Harrison, Haugland & Schmeichen, 1991). Hooker’s proposal to study gay men began as a result of a close friendship she developed with a former UCLA student, Sam From, who introduced her to the gay subculture. It was From who told her it was her “scientific duty” to study homosexuals and promised her access to all the participants she needed (Kimmel & Garnets, 2003). Initially she demurred, but eventually, with the encouragement of From and her colleague Bruno Klopfner, Hooker began the investigation that would ultimately help prompt the removal of homosexuality as a form of psychopathology from the Diagnostic and Statistical Manual III of the American Psychiatric Association (Shneidman, 1998). This research was the culmination of Hooker’s lifelong interest in social justice.

Born Evelyn Gentry September 2, 1907 in North Platte, Nebraska, Hooker earned her bachelor’s and master’s degrees at the University of Colorado and her doctorate at The Johns Hopkins University in 1932. In 1937-38 she had a fellowship to pursue her interest in clinical psychology at the Institute for Psychotherapy in Berlin where she lived with a Jewish family and witnessed Hitler’s rise to power (Harrison et al., 1991; Shneidman, 1998).

In 1953, the chief of the NIMH grants division, John Eberhart flew out to interview Hooker to see who this woman was who claimed she had access to any number of gay men who were neither psychiatric patients nor prisoners (Hooker, 1993). The grant was funded, and she recruited 30 homosexual and 30 heterosexual men matched for age, IQ and education. Each participant took three projective tests: The Rorschach, the Make a Picture Story Test (MAPS) and the Thematic Apperception Test (TAT). After scoring the tests herself, she removed all identifying information and then gave the test results to psychologists who were experts in those tests. The experts
assigned a psychological adjustment rating to each participant based on the test scores, and then
the experts received paired Rorschach protocols, one from a homosexual participant and one from
a heterosexual participant, and attempted to identify the homosexual. Two-thirds of both the
homosexual and heterosexual research participants received average or above average adjustment
ratings; there were no differences between the groups. Further, experts were unable to identify
the gay participant’s responses from the matched pairs at better than chance accuracy. There was
no association between homosexuality and psychological maladjustment (Minton, 2002; Shneidman, 1998). This ground-breaking research and the work that followed led to Hooker’s
award in 1992 for Distinguished Contribution to Psychology in the Public Interest from American
Psychological Association. It also led to the eventual removal of homosexuality as a form of
psychopathology from the Diagnostic and Statistical Manual of the American Psychiatric
Association (Minton, 2002; Shneidman, 1998).


Ruth Howard could be considered the first African American woman PhD in psychology or
that designation could go to Inez Beverly Prosser. Inez Beverly, birthdate probably 1895, earned a
teaching certificate from Prairie View Normal and Industrial College, Prairie View, Texas, in 1912,
after which she taught elementary school for two years. Shortly after, she began teaching at
Anderson High School in Austin Texas where she met and married Allen Rufus Prosser in 1916. She
remained at Anderson until 1927. Throughout this period she doggedly pursued a college degree,
which she earned from Samuel Huston College in 1926. In 1927 she earned an MA in education
from University of Colorado. With the help of a fellowship from the General Education Board she
enrolled at the University of Cincinnati in 1931 with the goal of pursuing a PhD to improve
elementary and secondary education. Her advisor, Louis Pechstein was a psychologist and Dean of
the College of Education at the university. Her dissertation compared personality characteristics of
African American elementary school children in segregated and integrated schools. She concluded
that segregated schools were a better environment for African American children, as long as such
segregation was voluntary (Prosser, 1933, as cited in Benjamin, Henry & McMahon, 2005, emphasis
added). The children were better adjusted socially and had better relationships with their teachers.
She completed her PhD in 1933 but unfortunately Prosser died in an automobile accident in 1934
(Benjamin et al., 2005).

After graduating from high school, Ruth Howard attended Howard University in her hometown of
Washington DC with the intention of becoming a librarian. In her last year at Howard, she became
disenchanted with that idea and determined to try to alleviate the problems people with
disadvantages, so she applied for and won a National Urban League fellowship to study social work
at Simmons College in Boston, Massachusetts, earning a B.S. in 1921 and an MS in 1927. She was
dissatisfied with her social work experience in Cleveland Ohio because she wanted “to learn the
dynamics of how a person thinks, feels and behaves. That meant the study of psychology” (Howard,
1983, p. 58). She earned her PhD in psychology from the University of Minnesota in 1934 for the
study of the relative contributions of nature versus nurture in the development of triplets. Howard
had a long career in psychology. After completing a clinical internship at the Illinois Institute of
Juvenile Research, she was the director of a mental health program at the National Youth
Administration. With her husband, psychologist Albert Beckham, she entered private practice in
clinical psychology. For 15 years she served as psychologist for the Provident Hospital School of
Nursing. After her husband’s death in 1964, she worked at the McKinley Center for Retarded
Ladd-Franklin, Christine (1847-1930) Topic: Sensation and Perception.
One of the first students to matriculate at Vassar College and take advantage of the new college education for women, was Christine (Kitty) Ladd, who at the age of 16 wrote in her diary, “I am crying for very joy. I have been reading an account of the Vassar female college that is to be. The glorious emancipation proclamation for women has gone forth and now no power can put her back in her former state... Oh! I must go. I must prevail upon my father to send me” (Scarborough & Furumoto, 1987, p. 120).

After she graduated from Vassar in 1869, she taught secondary school for about 10 years which she loathed, but she published some papers in mathematics and logic. One of those papers came to the attention of J.J. Sylvester at the Johns Hopkins University who used his influence to allow her to attend graduate classes at Johns Hopkins. She earned a stipend for her studies there, but not the title of Fellow and Johns Hopkins refused to award her the doctorate she earned in 1882 because they did not admit women. In that same year, she married professor of mathematics Fabian Franklin and began using the name Ladd-Franklin. In 1887 she began publishing on the topic of vision, but entirely based on her own reading and reasoning; she had no laboratory and no experimental experience in this area. She was able to work with German physiologist Arthur König in Berlin on color vision on two occasions, first, during Fabian’s sabbatical in 1891-92 and again for a summer in 1894. Most of her subsequent work in vision and color was theoretical not empirical because of the lack of laboratory access (Scarborough & Furumoto, 1987). The Ladd-Franklin theory of color vision was an evolutionary theory that argued for the progression of the development of color vision from achromatic to dichromatic (blue/yellow) to trichromatic (red/green/blue). She further saw the Helmholtz trichromatic theory and the Hering tetrachromatic theory not as incompatible rivals but as representing different stages of visual development (Ladd-Franklin, 1932). In contemporary texts, the Ladd-Franklin theory seldom appears, but recent work by Jacobs and Nathans (2009) shows that in primates, during the evolutionary separation of New World and Old World primates, genetic mutation of photopigment alleles on the X chromosome and a recombination error in an Old World female led to development of trichromacy in all Old World primates. Some New World females are also trichromats depending on which photopigment allele is on each of their X chromosomes, but all males and many females are dichromats.

Ladd-Franklin, then, anticipated more contemporary findings in color vision without any of the sophisticated equipment we have today to test such theories. She was also a determined and vocal proponent of equal treatment for women professionally as her lively exchange with Edward Bradford Titchener over participation in his exclusively male club known as The Experimentalists illustrates (See Scarborough & Furumoto, 1987 for details).


The first woman to earn a PhD in psychology was Margaret Floy Washburn. Like Christine Ladd-Franklin, she attended Vassar College as an undergraduate where she discovered an interest in philosophy and science. Since these seemed to be combined in what was the new discipline of experimental psychology, she decided to try to do graduate work in the subject with James McKeen Cattell at Columbia University. Cattell was amenable but Columbia would only allow a woman to attend classes as a “hearer,” (an auditor), so Cattell suggested she try to study with Edward Bradford Titchener who had newly arrived at Cornell University (Goodman, 1980, p. 71). In 1892 she became Titchener’s student and completed her doctorate in 1894. After teaching at Wells...
College for several years, serving in an administrative position as Warden of a women’s residence at Cornell, and as an assistant professor at the University of Cincinnati, in 1903 Vassar invited Washburn to return as an associate professor of philosophy. She was delighted to accept and remained there the rest of her life. She had a productive research life at Vassar publishing a number of research papers, many of them with her students, as well as two books, *Movement and mental imagery: Outlines of a motor theory of the complexer mental processes* (1916) and probably her most widely read book, *The animal mind: A textbook of comparative psychology*. The first edition was published in 1908, with later editions in 1917, 1926 and 1936. Historian of psychology E.G. Boring praised the comprehensiveness of the book’s treatment of animal research as well as its orientation to the “dominating problems” and “history of the movement” (1929, p. 561).

Washburn became president of the American Psychological Association in 1921, only the second woman president after Mary Calkins’ election in 1905. She was also the second woman and first woman psychologist to become a member of the National Academy of Sciences in 1931 (Goodman, 1980; Scarborough, 1990; Scarborough & Furumoto, 1987).

**Woolley, Helen Thompson (1874-1947) Topics: Gender. Intelligence.**

Helen Bradford Thompson completed her PhD at the University of Chicago in 1900 summa cum laude, making her one of the first women to earn a Ph.D. in psychology. Her dissertation, later published as *The Mental Traits of Sex* (1903), was the first systematic, experimental investigation of sex differences in psychological characteristics. She compared the performance of 25 men and 25 women college students on sensory, motor and intellectual tasks. Overall men showed superior motor skills and women more acute sensory discriminations. Women were slightly better than men at memory and association while men tended to be superior on tests of ingenuity. In accounting for these differences, Thompson rejected the preferred genetic explanations of the day (e.g. Geddes & Thomson, 1890) in favor of environmental ones: “...the psychological differences of sex seem largely due... to differences in the social influences brought to bear on the developing individual from early infancy to adult years,” citing as evidence differences in toys, games and emphasis on physical activity (Thompson, 1903, p. 182).

She briefly taught at Mount Holyoke College (1901-1905) before moving overseas to marry Paul Woolley, whose work as a pathologist took them to Japan, the Phillipines and Siam (Thailand). When they returned to the United States in 1909 they settled in Cincinnati, Ohio. In 1910, Helen Thompson Woolley published a review of the state of research on psychological differences between the sexes in which she asserted, “There is perhaps no field aspiring to be scientific where flagrant personal bias, logic martyred in the cause of supporting a prejudice, unfounded assertions, and even sentimental rot and drivel, have run riot to such an extent as here” (p. 340).

Since academic positions were generally not available to married women, in 1911 Helen Woolley became director of the Bureau for the Investigation of Working Children, later known as the Vocation Bureau. In 1921 she became the first woman and the first psychologist to serve as president of the National Vocational Guidance Association (Milar, 2004).

**Conclusion**

Psychology was one of the more welcoming of the scientific disciplines to women in the late 19th and early 20th centuries. As mentioned above, women were members of the American Psychological Association beginning its second year, 1893, and made up a greater proportion of the discipline than any other science except nutrition well into the 20th century (Rossiter, 1982). In spite of their numbers, historical accounts usually did not include women. This was not unique to histories of psychology but was true of most histories until the women’s movement of the 1960s...
stimulated interest in recovering the history of women’s experiences (Scarborough & Furumoto, 1987). Although there is far more scholarly work about women in the history of psychology recently than there has been in the past, many students of psychology are still unaware of the roles women have played in the history of the discipline. An excellent resource for additional information about these and other women psychologists past and present is www.feministvoices.com. I hope these brief vignettes will stimulate an appreciation for the contributions of women to psychology.

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“What is it like,” asked philosopher Thom as Nagel in 1974, “to be a bat?” (Nagel, 1974). Think on this question for a bit and consider the differences between yourself and a bat. You, typical reader, by tradition privilege sight above all other senses. If asked which sense of the five standard senses (sight, hearing, taste, smell, and touch) you’d be willing to live without, it’s likely that you’d not choose vision. But were you a bat, you’d probably agree with Seth Horowitz (2012) that your hearing would be the last sense you’d want to lose, because, as the poet Randall Jarrell put it, as a bat you’d “live by hearing” (Jarrell, 1964/1996).

From a historical perspective, the origin of the study of sensation and perception depends at its root on evolution. “Nothing is in the mind that was not first in the senses” claimed the philosopher-theologian St. Thomas Aquinas, following Aristotle. But even for creatures to which assigning “mind” seems a far stretch—coral, for instance—some form of detection of environmental events is necessary for gathering in the elements that support life, and for all living organisms it’s fair to paraphrase Aquinas and say that “to sense and perceive is to live.” Living forms have evolved widely differing systems for gathering environmental information, from catfish, which one fish specialist has called “living tongues” because their bodies are densely covered with taste receptors (Game and Fish, 2010), to the bat navigating by echolocation, to our highly specialized constellation of human senses, well suited to upright bipedal walking but flexible enough for us to fly at supersonic speeds.

Catfish, cats, and bats all seem to accomplish their sensory and perceptual tasks effortlessly in harmony with their apparent purposes. For the most part, humans do too: most people don’t give their senses’ functions any more attention than they do their breathing—although they’d certainly be dismayed if anything interfered with their operation! Among all living organisms, only humans, though, have evolved a system for self-consciously examining the purpose, organization, and operation of their sensory-perceptual systems.

The sensation-perception process can be viewed, and indeed is intended to be viewed at this level, as a one-way street. Once the sensation is received and the perception is attained (“That is red,” “I hear high C,” “That is a soft touch,” “This tastes like meat”), then the process is over, fully described and presumably fully understood. The purpose of perception is to accurately represent outside reality, so as to represent sizes or colors, to be rarely deceived by illusions, and to understand the relations of objects in the environment to one another. Systems in the brain analyze and make inferences about what is received on the retina and deliver the reality you experience.

The set of propositions in the paragraph above is the result of the combining, over a very long time, several strands of development. First, possibly at about the same time that consciousness itself emerged (Jaynes, 1976), came familiarity with the phenomena of sensation and perception, which were extensively described and exploited in ancient times. By the time that classical Greek philosophy was at its height, descriptions of both sensory systems and sensory experience were prevalent. Artists and architects evolved sophisticated color theories (Benson, 2000) and utilized empirical knowledge of illusions by, for instance, tapering columns at the top so that they would appear straight when arranged in colonnades. Lucretius, a Roman observer of the natural world, deftly described in De Rerum Natura the distortion of an oar in water due to refraction. As different cultures today have different schemes for understanding sensory and perceptual experiences (Guerts, 2003), so too did the ancient Greeks. Plato, for example, included in his
catalog of sensory experiences elements that we would today call emotions (e.g., fear) and also experiences which today don’t fit easily into either sensory-perceptual or emotional theory (e.g., pain and pleasure).

Alongside this familiarity with the uses of sensation and perception, from ancient times through the Renaissance, knowledge of the body, and specifically about the sensory organs, accumulated and was refined. Meanwhile, artists worked out the principles of perspective. The discovery that the retina holds a 2-D representation of the 3-D world was anticipated and in many respects determined by the development of the technique we call Leonardo's Window and the invention of the camera obscura. In Leonardo's Window, which may have been invented by Leonardo DaVinci but was more likely a development that occurred simultaneously in his time due to improvements in art materials and glassmaking, artists—drawing or painting—place themselves in a fixed spot gazing through a pinhole and draw, on a pane of glass interposed between their subject and themselves, what they see on the pane in their fixed monocular point of view (Wade & Wade, 2000). What develops on the pane—and what is produced by the beam of light that enters the pinhole in the side of the little box called the “camera oscura” (closed chamber) —is analogous to the image that develops on the film or other imaging surface of a camera, a view of reality in perspective that mirrors what our eyes' imaging systems produce on their retinas. Likewise, for the sense of hearing, development of theories of how the mechanisms in the ear produce the experiences of sound depended for analogies on the development of the piano and violin in their modern forms. These might be examples of a general historical principle of art leading perceptual science. Recent scholarship suggests that art is a necessary precursor for all successful science: as Lawrence Lipking notes in What Galileo Saw (Lipking, 2014). It was Galileo’s watercolors of the moon that rendered accessible what was otherwise visible through his telescope only with great difficulty and much training. For most scientists at the beginnings of scientific psychology, there was no gap between aesthetics and perception. Along with art, technology has driven perceptual studies for centuries. In the 17th century, the inventions of the telescope and the microscope provided potent analogies between optical devices and the human eye while expanding the range of human sight

Modern sensory-perceptual theory coalesced first between 1680 and 1710, when three important philosophical, scientific, and psychological observations were combined into its intellectual basis (Wade & Wade, 2000). One of these observations was that of the philosopher Bishop George Berkeley, who said in 1710 that “Esse est percipi” (being or existence is to be perceived) and thus put the problem of interpretation foremost in the study of sensation and perception (Downing, 2013). The next observation was that of the natural scientist Isaac Newton, who in his Opticks in 1704 stated the result of his experiments with the decomposition of daylight into its spectral elements by means of pinholes and prisms: "For the rays to speak properly are not coloured" (Wade et al, 2012). This succinctly stated the problem of how the invisible and intangible matter of light gets through the eye and into the brain, in such a way that a fundamentally unseeable process results in seeing. And the last observation was made by an Irish nobleman and amateur philosopher, William Molyneux, who in 1688 in correspondence with John Locke posed the question of whether a blind person, familiarized by touch with the forms of a sphere and a cube, and then suddenly granted sight, would be able by sight alone to know which form was which, at whatever distance each was displayed. Molyneux's Question—that is what it is called today in philosophy (Glenney, 2012) —brings together several questions that still animate research in sensation and perception. Among these are: how much of perception is due to learning and development and how much is innate? What are the relations between the separate senses? How do we understand distance from projection onto a flat screen at the back of the eye?
Over the next century physiological studies continued to advance along with development of the other natural sciences: chemistry, biology, and physics. Toward the end of the 18th century German philosopher Immanuel Kant, influenced by Newton, postulated space and time as necessary pre-existing conditions for mental events. Kant was not optimistic about whether mental events could be measured, but the steady development of measurement technology proved his pessimism was unwarranted. In 1850, two German physicists contributed key elements which led to the founding of psychology as an independent scientific discipline. On October 22, 1850, Gustav Theodor Fechner (1801-1887) conceived an equation that could describe the connection between physical stimuli and mental reactions. Over the next ten years he elaborated this visionary idea into a very influential book, *Elemente der Psychophysik*, which inspired the founding of the first laboratories devoted specifically to studying psychological phenomena, including Wilhelm Wundt’s laboratory at the University of Leipzig. And also in 1850, Hermann Helmholtz, who had three years earlier asserted the law of the conservation of energy, measured the speed of nerve impulse.

After this point, psychology, possessing a set of measurement tools specific to its subject matter, the brain and mind, rapidly evolved into the form which it has today. The consequence for the study of sensation and perception was profound and the development of this subdiscipline proceeded in several distinct directions. One of the most important consequences was that the measurement of all sorts of sensations and perceptions expanded profusely. By the beginning of the 20th century massive amounts of data accumulated for each of the senses. Although the ancients saw touch as the fundamental sense, by the time that Wundt’s laboratory in Leipzig was established in 1879 the eye and ear were the most studied of the sense organs, and thus vision and, to a lesser extent, hearing, represented the bulk of what was discovered. The more earthly, bodily sensations and perceptions received less attention, and in most cases formed the bases for new subdisciplines. Hunger and thirst migrated by the 1910s, for instance, to the area of studies of motivation, helped by the behaviorism of the time which took sensations of hunger and thirst in animals as basic givens. Beneception (the sense of pleasure) and nociception (the sense of pain) also were considered basic and irreducible and were woven into the texture of behavioristic studies of animals utilizing food rewards on the one hand, and punishments ranging from food deprivation to the direct application of painful stimuli (e.g. electric shock). The centrality of sensory pleasure and pain to all psychological theorizing, from behaviorism through personality theory (think of the basic levels of Maslow’s system) to Freud, were not matched by a corresponding effort to establish the exact neural mechanisms supporting them: only later in the 20th century were the anatomical and physiological correlates of these basic sensations discovered and mapped. Superficially it may seem like resistance, among sober-minded psychologists and pessimists such as Freud, who saw pleasure mainly in terms of relief of tension and pain rather than as a valuable sensation in its own right, to studying the full range of sensory and perceptual experience. But the reason may be more innocent. It may be a simple matter of experimental design and the possibilities of control. Though nothing is really easy in experimentation in sensation and perception, still, it’s relatively less trouble to precisely present the eye with controllable and measureable stimulation than it is the ear, and the ear, while a little less targetable, still has advantages over the other senses. A historical tale can illustrate the difficulties inherent in sensory experimentation, especially in the bodily senses, as well as the lengths to which psychologists will go to gather data. Around 1912, Edwin G. Boring (1886-1968), who became the most influential historian of psychology in the 20th century, began his doctoral dissertation. Now, often, graduate students don’t get much choice in their dissertation subject, and while it’s not clear whether E. G. Boring volunteered or whether his advisor, the imperious E. B. Titchener (1867-1927), strongly suggested the topic, a study was
carried out by Boring and others (among whom was the woman who would soon become his wife) on the sensations of the lower gastrointestinal tract. It’s left to your imagination to imagine how stimuli that would produce significant sensations could be delivered THERE. Suffice it to say that the range of substances that WERE delivered included various preparations containing mustard and also pepper extract (i.e., a substance similar to Tabasco sauce). Probably now would be as good a time as any to read Boring’s report, in the *American Journal of Psychology*, January, 1915 (Boring, 1915)—it’s available in full text in PsycINFO. This is a good story for several reasons. First, of course, it illustrates the problem of dealing with one of the earthier senses. That senses such as a full bladder or sphincter are important is a minimization: whole psychologies have been built on the idea of self-control, and it was Freud who elevated these senses to a pinnacle. Boring’s 1915 results are still cited today because they are among the few actual experimental results available that bear on questions such as, for instance, whether a person who is developing a dangerous intestinal problem such as a tumor may be able to identify, by self-examination of changes in bodily sensation, the early stages of the condition, or on the types of unpleasant sensation that may need to be managed in diseases of the gastrointestinal tract or in obesity (Park & Camilleri, 2005) or psychosomatic illness (Cameron, 2001). Next, it’s an example of one sort of scientific heroism that is particularly evident in the history of sensation and perception. Throughout the history of science and medicine, researchers seeking to extend knowledge have endured some pain or even put themselves at significant risk of tissue damage (Fiks & Buelow, 2003). For example, K. J. W. Craik, an early advocate of the human-computer link, while an undergraduate, investigated the course of recovery from blindness by creating an artificial blind spot on his retina by means of a pinhole aimed at the sun (Collins, 2013). Psychologists and the participants in their perceptual studies went just as far in demonstrating what happens when sensation is altered, restricted, or even completely removed. In 1896, George Stratton (1865-1957), a young University of California professor who had only lately been a student of Wilhelm Wundt, donned goggles that inverted the visual field and started a tradition of experiencing distorted vision that continued for a century (Stratton, 1897; Linden, Kallenbach, Heinecke et. al., 1999). And in the 1950’s, graduate students in Donald Hebb’s laboratory at McGill University in Montreal volunteered to spend six weeks in a room containing a bed and little else. They wore earmuffs and blindfolds, they were surrounded by white noise and humming airconditioning, and when they needed to use the restroom they were walked there by attendants while wearing frosted glass goggles. Hebb, a neuroscientist of world renown, assigned a large role to sensory experience in the development of the brain, and undertook these studies to demonstrate just how much normal brain development depended on a normal flow of sensations. The outcome was that hardly any of the student volunteers lasted more than a week under these conditions, even though they were paid, and their primary reaction was intense boredom, punctuated in some cases by hallucinations (Heron, 1957). It’s not the case, as some have claimed, that these experiments were undertaken at the behest of the US Central Intelligence Agency and other Canadian security agencies to investigate methods of torture (Brown, 2007). However, they and other similar studies since that time (Bond, 2014) inevitably provide evidence for the effects of extreme punishments as a corollary practical result.

From today’s vantage point, the goals of the 17th and 18th century philosophers and natural scientists who began the modern study of sensation and perception have been realized. The psychophysical method originated by Fechner has generalized across all areas of psychology. A diverse set of sensory and perceptual phenomena have been quantified, ranging from familiar visual illusions to integrated multisensory experiences such as physical and social stress, kinesthesis, dreams, and synesthesia. Perceptual theory informs applications in many domains, from the design of lane-keeping camera systems for driving, to cochlear implants to restore
hearing, to Chef Watson, an algorithm that combines food qualities with psychophysically judged
pleasure (in both appearance and taste) to create menus that can reduce food waste (IBM, 2016).

Seeing, hearing, and other forms of sensing seem effortless to us and we take them for granted.
Likewise, theories in textbooks seem like they have always been there, and conceal the processes
by which they emerged. As suggested in what’s already been said here, sensation and perception
have a history that stretches back thousands of years. The development of systematic accounts of
any parts of science may take hundreds of years to reach their current state, and in sensory and
perception science this is the case as well. Today we know a great deal about color vision, but what
we know today is the result of parallel developments in neurology, psychology, and philosophy,
developments that were not conflict free. For over a hundred years scientists debated the number
of primary colors, and our current view that there are three light primaries (long, middle, and
short-wavelength light, or in popular shorthand, red, green, and blue lights that can be combined
to produce almost all visible hues) as well as four opponent primaries (red/green and blue/yellow)
is the result of a compromise that occurred only a couple of generations ago between two
positions that were diametrically opposite intellectually circa 1900 (Hubel, 1988; Hunter, 2014).

An example of the historical development of a current area of sensation and perception where the
component parts have been discovered but where a comprehensive theory covering all of the
components is just coming together is the study of the perception of motion. Until 1900, virtually
all perceptual theory was based on observation of simple, static stimuli. Around that time,
revolutionary developments occurred outside of psychology: the invention of the automobile, the
airplane, and the motion picture. A young US psychology student in Germany at that time,
Raymond Dodge (1871-1942), was assigned, by his teacher, the philosopher Benno Erdmann, the
problem of examining the movements of the eyes during reading. Dodge, utilizing a primitive form
of motion photography, made a revolutionary discovery of his own. During reading, and by
extension, during all perception, the eyes move in jumps, or saccades. Though it’s not perceived
that way, the world we inhabit is the result of the integration of multiple separate views, delivered
at a rate of about five per second (Wade & Tatler, 2005). A few years later, in Germany, Max
Wertheimer, one of the originators of Gestalt psychology, discovered that perceived motion
resulted from appropriately timed sequential presentations of nonmoving stimuli—the Phi
Phenomenon. Often the story is told that Wertheimer chanced on this idea by encountering a
hand-held toy that produced a movie-like effect from a cranked drum containing a series of still
images viewed sequentially, as the drum turned, through a slit. However, recent historical research
reveals that Wertheimer’s discovery rested on the availability, at the University of Frankfurt where
he was a doctoral student at the time, of the most advanced equipment for the laboratory
presentation of brief sequential stimuli, the Schumann rotary tachistoscope (Gundlach, 2014;
Stock, 2014).

While Dodge’s studies of eye movements found nearly immediate practical application, for
instance in selecting airplane pilots during the First World War, Gestalt psychology received a
mixed reception among American psychologists. One psychologist who enthusiastically embraced
Gestalt psychology was James Jerome Gibson (1904-1979). In what follows I’ll rely on the
biography of James Gibson written by his wife, herself a psychologist of worldwide repute, Eleanor
Jack Gibson (Gibson, 2005). Gibson encountered Gestalt psychology directly from one of its
originators, Kurt Koffka (1886-1941), who migrated to the US from Germany in the mid-1920’s to
Smith College in Massachusetts where Gibson began his professorial career. Gibson’s theory of
ecological perception was published in several books between 1950 and 1979 (Gibson, 1950;
Gibson, 1966; Gibson, 1979) and heralded a fundamental change of emphasis in perceptual theory.
The theories he encountered in his college training in the 1920’s, theories based on fixed stimuli presented in brief bursts in specialized apparatus, focused on the eye and the retina and the explanation of how their anatomy and physiology related to visual experience. In contrast, Gibson, along with the Gestalt psychologists, saw sensation and perception as seamless, automatic process in which moving observers scan and sample the possibilities of sensation—Gibson termed them ‘affordances’—emanating from their surroundings. Think, if you like, of a space explorer on wheels—the Mars Rover—for an analogy. We take it for granted that we can carry on a conversation while sipping a coffee while driving, effortlessly integrating streams of information from every sensory modality: the signals from the fingers on the steering wheel, the voices of those in the car and on the radio along with the sounds of the road under the tires as well as the traffic, and the complicated visual picture that changes every fraction of a second.

What Gibson realized was that the theories of sensation and perception of his time, focused on static portraits of the anatomical sites of sensory reception, the retina, basilar membrane, tongue, olfactory epithelium, and skin, did not account for the rapid integration of information. So he proposed a new picture of the perceptual world, a revolutionary act by which he postulated an observer in relative motion to the observed and a fundamentally unstable perceptual environment that provides new information with every step, contingent on the observer’s own motion. This is a complete break with the prevailing static account of transmission and transduction, which even in their actual experimental settings relied on observers held perfectly still so that they could receive whatever experimenters wanted to transmit to them. Gibson’s view has an affinity for the philosophical view that there are permanent possibilities of sensation, an idea stemming from British empiricist philosophy (specifically from John Stuart Mill) but which can be traced all the way back to discussions at the time of Plato about the sources of thought. You can get a rough simplification of this issue by thinking about that familiar conundrum about whether trees falling in the forest produce sound. For Gibson the answer is clear: the conditions for sensation and perception surround us at every place and at all times. Perception is a continuous process of interaction and necessitates a world in which things are always available for us, even if we are not there.

Beyond this, Gibson’s theory bears traces of influence by other historical developments in biology and technology. From the biological side, humans have always been fascinated with the many ways that evolution has solved the perceptual problem for other species, from the catfish whose whole skin is a smell and taste receptor, to snakes and insects that probe the environment with their tongues and feelers, to bats that navigate by a sophisticated sonar ranging system, to homing bees that communicate in a language-like way about honey sources, to birds that deal with perceptual problems that typically confront only human acrobats. Gibson made reference to other species, especially birds, and even though he distanced himself from behaviorism, those that called him a “perceptual behaviorist” were probably closer to the mark as to the incidental historical influences on his theory. Gibson’s historical era coincided with the rise of behaviorism in US psychology. Behaviorism emerged from comparative studies of animal behavior, well established by the time of Charles Darwin. Everything that was known about the brain and nervous system, then and now, is predicated on knowledge that was and is gained from experiments conducted on animals. For a semi-recent example, the scientific study of transmission and transduction was vastly advanced by Hubel and Wiesel finding the first evidence for visual feature detection in cats’ visual cortices in the 1950’s (Wurtz, 2009). This implies a common scientific faith that animals are good models for humans, and at least in the perceptual domain it has been accepted that most vertebrate perception is built on a common plan. And for animals, perception is more active than passive, more purposeful than contemplative.
The claim that motion is the primary precondition for perception was almost in place for Gibson by 1940, but it took one further push to fully realize it. That push was the start of the Second World War, which took Gibson out of his perceptual laboratory and put him to work for the US Armed Forces evaluating visual capacities of pilots and other aircraft related personnel. What happened was that Gibson encountered what might be the single most important historical influence on perceptual studies throughout history: the input of technology. Unlike Helmholtz, whose views on perception were driven by his underlying artistic interests, especially in music, Gibson was not particularly artistic or aesthetic (although he did have a penchant for acting, which he pursued at an amateur level until his hearing failed in middle life.) Instead, he drew on technologies, established and new, as sources of ideas about perception. These, in the order in which Gibson encountered them, were trains, automobiles, and planes. Gibson was the son of a railroad executive during the time in which railroads were the primary means of long distance transportation in the U.S. When he was young, a hundred years ago, he often accompanied his father on inspection and business trips, and the experience of watching the world expand ahead of or contract behind the moving train was singularly impressive to him. Later, in the 1930s, he spent some time considering the perceptual problems inherent in driving. In being interested in automobiles he was not alone as many psychologists then were fascinated by cars and driving. Walter Miles (1885-1979), one of the most eminent experimental psychologists of the time, studied alcohol use in connection with driving and was one of the persons responsible for the adoption of a blood alcohol count to prove driver impairment (Goodwin, 2014). Karl Duncker (1903-1940), a Gestalt transplant to the US, remarked in an extensive posthumously-published thesis on pleasure that there was no pleasure higher than a fast drive in a car (Duncker, 1941). Gibson, in fact, anticipated the essentials of his later theory in a 1938 article on automobile driving (Dant, 2004). But it was airplanes that brought the necessity of seeing the perceptual world whole and in motion home to Gibson. During the Second World War he devised tests to judge the relative ability of pilot trainees to perceive the cues necessary to land, to maintain level flight, and to track other objects in the sky while in motion themselves. Another technology that reinforced Gibson's intention to put observer motion in first place in perceptual theory came from his experience building stimuli for testing pilots. To do this he was provided, by the military, the services of a crew of expert film animators, and with their assistance he created some of the earliest motion picture stimuli for perceptual research in conjunction with his research. Motion pictures and television, two inventions from Gibson's time, have transformed our way of understanding images and transmitting information: while they have not entirely supplanted the printed page and the static visual image in the gallery, they have added at least an equal amount of information to our knowledge of the world that was rarely introduced into the science of perception before Gibson came on the scene. (Incidentally and interestingly, one of the chapters in The Film Sense by the pioneer Russian filmmaker Sergei Eisenstein (1942) is titled Synchronization of Senses.)

The insights Gibson gained from his wartime work, published first in a summary of his wartime work in 1947 (Gibson, 1947) and shortly afterward in a richly illustrated book, The Perception of the Visual World (Gibson 1950), and eventually in a very widely read book, The Senses Considered As Perceptual Systems (Gibson, 1966) announced a striking departure from laboratory studies of single sensory systems in isolation. The radical departure from the classic one-way model of perception in which stimulation proceeds from sense organs to brain is evident in its subordination of the mechanisms of the eye, ear, and other senses to their purpose, which for Gibson is to detect, locate, and navigate to objects that are necessary for life. In Gibson's perceptual world, illusions are curious rarities rather than perceptual problems to be solved: perceptual systems have evolved to compensate for or ignore illusions so that they won't interfere with the achievement of
perceptual goals. And, in a real departure from past practice, in Gibson’s view all of the senses are of equal importance in supplying a continuous sample of the surrounding environment which is rapidly and automatically converted into a logical and organized whole. Gibson's work implied, though it did not propose, mechanisms in which multiple systems of receptors work en masse to evaluate texture, contrast, and motion in wide visual fields.

Costall and Morris (2015) observe that rarely does Gibson, although his theories are over half a century old, find a place in current introductory psychology texts. For Costall and Morris, who are advocates for Gibson’s theories, this is a case of rejection of a dissident view, and it is certainly the case that Gibson was often dismissive of the research that focused on the retina and ultimately led to the postulation and discovery of feature detectors, specialized cortical processing regions, and the like. There may even be a more visceral level of rejection of Gibson within the community of perceptual theorists, tracing back to the earliest history of theories of perception. There are two distinct and opposite theories of how sight is accomplished. In one, the extramission theory (or the emission theory, for short), sight is produced by the projection of some sort of self-generated activity from inside the self toward the outside world (Madan, 2009). Ancient philosophy called the source of vision “the fire within,” kindled by Aphrodite, whose rays, when projected outward, instantly illuminate the world and cause us to see. The opposing theory is the intromission theory, in which rays from light-emitting objects, ultimately from the sun, project to the eye, are collected on the surface of the cornea, focused by the lens onto the retina, and received and transmitted from the retina to the brain.

Of all the many things that students should learn from the sensation and perception section of their intro text and course, the most important, according to Winer and colleagues in the American Psychologist (Winer, Cottrell, Gregg, Fournier, & Bica, 2002), is that the emission theory of perception is wrong. This is the dominant view in perception studies today. At least some of the aspects of Gibson’s approach seem to imply, if not a ‘fire within,’ at least a projected trajectory of motion emanating from the self which, when followed, generates the stimulus for perception. This may be close enough to extramission theory to be singed by the critical fire of its rejection. It is true, as Thomas Kuhn (1962) observed, that science often progresses discontinuously. Periods of low change are punctuated by sudden appearances of new theories that at once clarify phenomena that were not well explained by existing theory and also dispel the older theories, relegating them to a museum of historical curiosities. Kuhn called these sudden changes were termed ‘paradigm shifts’. In sensation and perception currently, intromission is the dominant theory, and it is tempting for individuals who are (not unjustifiably) partisans of a competing theory that may have some extramissive aspects to see assertions of intromissive orthodoxy as evidence for the rumblings of an impending paradigm shift.

But it may also be the case that, in sensory and perceptual science, there is also gradual change marked not by sharp rejection of theory but instead by compromise formations in which the best parts of all theories are preserved and rearticulated. As noted above, the process of arriving at the current view of color perception took over a hundred years and ultimately preserved both of the competing views which caused strife during that developmental period. Just such a process may be occurring now with theories of motion perception. All three of the elements selected for this example here—saccadic eye movements, apparent motion, and the theory of direct perception—bear in important ways on motion perception, but at present they are emphasized separately.
across different subfields. Eye movement, although present in research in areas congenial to Gibson’s theories, is far more a feature of research in reading than it is in research on driving.\(^1\)

Apparent motion or the phi phenomenon hardly gets any mention at all in the research literature, although it does get mentioned prominently among the discoveries of Gestalt psychology described in intro textbooks! Elements deriving from Gibson’s work are showing up in the research literature, especially in studies investigating the perceptual mechanisms of automobile driving (e.g., Mackenzie & Harris, 2015). A central tenet of direct perception—Gibson’s theory—is that a pattern in the visual field termed optical flow produces automatic responses. (To visualize optical flow, think of the depiction of the view through the windshield of a Star Wars spacecraft while traveling in space.) One current stream of research utilizes the concept of optical flow and the focus of expansion (similar to a vanishing point in perspective) as elements to explain the steering behavior of human drivers. Interestingly, the findings point to drivers using, rather than visual information emanating from where they are currently heading, information instead arriving from places where they expect to be at a future time in guiding steering behavior (Mole, Kountoruriotis, Billington & Wilkie, 2016; Kadar, Rogers & Costall, 2011). This suggests a form of self-generated projection into the scene interacting with incoming information and may be a harbinger of a more comprehensive theory of motion perception that is currently evolving. It is fair to say that research is just catching up with Gibson’s postulates of a primarily moving observer designed for immediate, effortless information pickup from a structured, informative environment, and for the most part you won’t read about much if any of Gibson’s discoveries in introductory texts because it is just in its preliminary stages. It’s also the case that technology as well as theory is playing a role, as it has in the past. Research on driving and flying involves heavy investment in computing machinery and optical tracking devices, and depends on high levels of financial and institutional support. This is not different from the pattern in the past, where research depended on the development of improved measuring instruments as well as on supportive patronage (or the independent wealth of the researchers.) As technology becomes less expensive, more of it will be put to use, by practical designers as well as theorists.

Winer et al. (2002) observed that even after a course is taught, emissions beliefs persist: they imply that it is the teaching that is at fault. But it may be that emissions theory persists among naïve observers, or even among those who have had some exposure to basic perceptual theory, because it contains at least a partial truth, in terms of positing an active, information-seeking contribution proceeding from the observer. Along with its emphasis on observer-generated motion, Gibson’s whole-field theory with its emphasis on sensory integration and on the goal-directed nature of perception may offer an intuitively accessible way forward for better inclusion of other things, for example combinations of sensory experience (e.g., selecting a meal based on the complexity of its expected appearance and taste, discussed in the context of synaesthesia by Brennan, 2014). There may be more than a germ of historical truth in saying that, in the study of sensation and perception as in other areas of life, revolution is exciting, but compromise is more lasting and integrative.

The main theoretical change in sensation and perception studies over the past fifty years is adding, to the conception of sensation and perception as passive processes of reception, transmission and transduction, active reciprocal interchange between perceiver and the perceived. Reception, transmission, and transduction are of course not unimportant, and now connectomics is starting from mouse retinas to trace the billion paths of wiring of the senses to the brain (see e.g.,

\(^1\) Relative hit counts in PsycINFO for “saccades” and, first, “reading” and then “driving,” 693/94; relative counts for “eye movements,” same order of pairing; 3062/494; and for “attention,” 12,692/2,747.
Helmstaeder, Briggman, Turaga, Jain, Seung & Denk, 2013). Sensation and perception, the oldest and most fundamental of all of the subfields of psychology, is so complex that it is difficult to do justice in one chapter. It is good to keep in mind the wise counsel of the Little Prince, as expressed by Antoine de St. Exupéry (1943), when reading any chapter on sensation and perception: what is essential is invisible to the eye.

Vignettes

1. Self Driving Car
While Karl Duncker may have seen the personal operation of a fast vehicle as the epitome of sensory and perceptual pleasure, other members of the public have different views about the enjoyability of driving, equating it with a chore and hoping, by automating it, to eliminate it. Although driving is relatively safe, as are most modern means of transportation—thank experimental psychologists who have contributed substantially to the efforts to design systems to make them so—concerns are still voiced about keeping cars in lane, keeping distances from other vehicles on ever more crowded urban superhighways, and avoidance of pedestrians in dense cities. Over the past fifteen years, many mechanisms have been added to cars to enhance their safety and convenience: lane departure warnings similar to aircraft stick shakers, rear-vision and 360-degree vision cameras to display objects in blind spots, radar-controlled cruise control that maintains adequate distance between the controlled vehicle and traffic ahead and behind, self-parallel parking, and automatic braking for pedestrians in the path are some of the most regularly offered devices that help cars see where they are going and communicate information about hazards to their drivers. Recently there has been a push to combine these and several other systems into a totally autonomous self-driving car. This effort was fueled by competitions originated by DARPA (the Defense Advanced Research Projects Agency of the U. S. Department of Defense) starting in 2004 for self-driving cars that could navigate a desert course, an effort that started humbly but which resulted in rapid improvements (DARPA, 2014). Presently, the Google self-driving car is currently being road tested and, according to recent reports, is ready to be marketed (Wakabayashi, 2016).

To allow the self-driving car to self-drive, ten distinct coordinated systems are necessary. The primary system is a laser ranging device (LIDAR) mounted on the car roof (Davies, 2014). This device contains 64 lasers which collect over a million data points per second from analyzing reflections of emitted beams. From the standpoint of perceptual theory, the self-driving car depends on a mixture of technologies, some of which are signal-emitting and others which are signal-receiving. A list of the self-driving car’s components (Davies, 2015) noting whether each is a system that is primarily based on emissions, reception, or some form of memory or related cognitive processing follows:

Systems on the car’s surface:
Laser range finder (LIDAR)—primarily emissions based
Front-facing camera—primarily receptive
Bumper radar—primarily emissions based
Geolocator (contacts satellite for GPS positioning) —primarily emissions based
Reverse ultrasonic wheel sensor—primarily receptive
Altimeter + gyroscope + tachymeter combo—primarily receptive

Systems and information in the car’s navigational computer:
Road sign interpretations—trained by exposure and stored
Routes planned in advance—either self-generated or selected by operator
Programmed road interactions—established by experience during training
(The advance planning section relies on detailed 3-D maps generated by a combination of GPS and LIDAR ranging.)

Much of the discussion of the self-driving car in the popular technical press does not relate specifically to any psychological theories of sensation or perception. However, the early development of robotics literature relied on theoretical work in both cognitive psychology and in perception: one of the earliest influential books on it, and a very good short account of how to build complex perception and, potentially, consciousness, is Valentino Braitenberg’s book *Vehicles* (Braitenberg, 1984). In it, simple sensors and basic directional commands are augmented and overlaid until a wheeled robot begins to exhibit seamless self-directed performance. Discussions of Gibson’s theory can be found, both in the formative and the ongoing literature of cognitive robotics (Sloman, 2015; Jamone, Ugur, Cangelosi, Fadiga, Bernardino, Piater, & Santos-Victor, 2016).

Conversely, there are few if any references in the robotics literature to any of the biological or neurological perceptual theories of reception, transmission, and transduction, and no mention of photoreceptors or retinal physiology. The development of the self-driving car is another very recent historical example of the patterns described earlier in conjunction with color vision and motion perception that suggests that several lines of theoretical development, catalyzed by technological advances, may ultimately converge. Current consensus seems to be developing around the idea that perception, and consciousness itself, is a transactional process involving both, as Richard Friedman put it in examining his reactions to sensory deprivation, the brain both giving and taking orders (Friedman, 2016). Transmission and transduction theories lead backward into the brain and ultimately to the question of the location of the interface between internal brain processes and incoming sensory information, which must be occurring at a physical site both in the robot vehicle and in the human being. Interestingly, when the distance between incoming stimulation and internal response is shrunk to zero, the difference between incoming information and internal information streaming out to meet it also becomes minimized. Even though the eye itself does not emit rays, the brain is emitting the commands to seek incoming information. Accuracy of detection and ultimately of navigation by emissions-guided robot vehicles is likely to surpass human processes. Future accounts of humans compared with their intelligent devices may consider the lack of perceptual emissions in humans a sensory deficit. The best recommendation: if studying sensation and perception, also take a course in robotics and machine vision, and be ahead of the curve when humans eventually become understood as hybrids, as Google’s chief engineer Ray Kurzweil predicted in 2015 that they will be by 2030 (Eugenios, 2015).

2. Perception of Love through the Eyes

The image of the watching eye is a potent one in art and literature: think of the eerie billboard eyes along the highway leading to Jay Gatsby’s home in his 1925 novel *The Great Gatsby*, the omniscient eye at the top of the truncated pyramid on the back of the U. S. $1 bill, the implication of divine reciprocity in the title of Zora Neale Hurston’s 1937 novel *Their Eyes Were Watching God*, and the idea of the evil eye—“if looks could kill.” From the standpoint of intromission theory, all of these allusions to the power of look and gaze might seem like so much superstition to be discarded along with emissions theory.

Yet, like emissions theory, these ideas are persistent and insistent, and even form the basis of substantial philosophic and psychological ideas. In Nietzsche’s existentialism, you gaze into the abyss, but the abyss gazes back at you; in Freud, the game of hide-and-seek is an essential component of the development of the human psyche. Experimental psychology too contains examples of the idea that we learn important truths by watching what is being shown to us by our
environments. Albert Bandura and his colleagues’ account of the learning of aggression relies on the power of simple observation of bad acts going unpunished (Bandura, Ross, & Ross, 1961). In 1944, Fritz Heider and Marianne Simmel, Gestalt psychologists, created simple films of moving geometric forms (Heider & Simmel, 1944). In one of the most well-known of these, a round dot moves randomly around the screen, until it enters a square, one of whose sides is opened like a door to let it in. Once the dot enters, the door closes, and it the dot begins to move more agitatedly in the confined space. Soon it begins to thrust and ram against the sides of the square, but it remains inside, until another dot arrives and contacts the square, which then reopens and allows the previously confined dot to go back outside. Experimental participants to whom this film was shown had no hesitation in describing the action in common sense terms reflecting social interactions: “the square held the dot against its will”; “the dot wants to escape”; “the second dot came to the rescue,” and so forth.

This, one of the earliest demonstrations of social perception, suggested to Heider and Simmel and other psychologists at the time that our patterns of social interaction emerge directly from basic perceptual processes: we see social relations in terms of wholes or Gestalts. Gestalt psychology is not typically used to explain social processes today. Instead, when speaking of social behavior, we interpose cognitive strategies and computations to explain what occurs when we evaluate or judge a person to be attractive or an action to be just. But some recent research suggests that ideas of automatic and largely unconscious social perception may play a role as well. Over the past few years, a series of well publicized demonstrations have taken place in which two individuals who have never before met are invited to sit facing each other and to gaze, simply gaze, into each other’s eyes for a few minutes. Asked afterward whether they love the person more than they did at the beginning of the exercise (a pretest was done), they answer yes, more, often twice as much (Epstein, 2010). A further study by Bolmont, Cacioppo, and Cacioppo (2014) is intriguing in the way that it intertwines with extramission theory. Our eyes move autonomously, even during sleep (see the chapter on REM sleep) and without that motion we would see nothing at all. Paradoxically, the image on the retina needs to be permanently unstable—that is, momentarily still, and then rapidly shifted, five or more times per second—for anything to be seen (Riggs, Ratliff, Cornsweet, & Cornsweet, 1953; Wade & Tatler, 2005). Bolmont et al. observed persons gazing at partners in whom they had either a love interest (of one of the more committed varieties in the Sternberg triad of intimacy-passion-commitment) or a frank sexual attraction, and detected regular variations in the pattern of eye movements in each partner based on the purpose of the gaze. Eye movements fit into that class of self-generated movement that projects the gaze into the world—a species of emission—and in this case they correlate with intention. Correlation of course is not cause, and whether the eyes move differently because of an internally generated change of pattern, or in response to detections of small fluctuations in gaze angle on the part of the partner, cannot be determined. However, the correlation does suggest that some elements of social behavior, in this case one of those types of biologically necessary beneception that are routinely bypassed in basic accounts of perception, are indeed connected to bedrock sensory and perceptual processes.

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The Early History of Social Psychology
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In the third edition of the *Handbook of Social Psychology*, Gardner Lindzey and Eliot Aronson (1985) paraphrased Ebbinghaus in stating that social psychology has a long past but a short history. Its short history is evidence in that social psychology is a relatively young science, just over one hundred years old. Its long past comes from the consideration of social psychological issues that date back to much earlier times (McGarty & Haslam, 1997).

Norman Triplett is generally credited with performing the first social psychological experiment in 1898 (Allport, 1954). In reviewing the times recorded in paced, un-paced and competitive bicycle races, he had noticed that cyclists recorded faster speeds when racing against one another as compared to racing against a clock. Triplett then conducted a controlled experiment in which a child alone or children in pairs were timed as they turned a fishing reel rigged with a set amount of line. Triplett concluded that the results showed that children’s performance was better when working in pairs. This phenomenon has been interpreted as the effects of competition or of social facilitation on performance. As it happens, Triplett’s study may not have been all that it was cracked up to be (see Stroebe, 2012 for a re-analysis of Triplett’s data), it may also not be the first social psychological experiment. In the 1880s, Max Ringelmann studied whether workers pulled harder when they worked together compared to when they worked alone and found an inverse relationship between the size of a group and the magnitude of group members’ individual contribution to the completion of the task. However, this early study of social loafing did not appear until Ringelmann published his monograph in 1913. However, as early as 1887, Charles Féré published the results of his studies of social facilitation. Féré found that the pressure exerted in a hand-grip measured by a dynamometer doubled in the presence of another person. Interestingly, Féré’s study was mentioned in Triplett’s 1898 publication. Also prior to Triplett’s study, Alfred Binet and Victor Henri (1894) published a study that investigated the role of suggestibility on memory (see Nicolas, Gounden & Santioso, 2014). Their method was to induce false memories using either indirect suggestion of a preconceived idea, direct suggestion, or collective suggestion.

Given that all of these seminal studies occurred in the latter half of the nineteenth century, it is evident that in the chronicle of scientific discoveries, social psychology was late on the scene. For example, in 250 BCE Eratosthenes calculated the circumference of the Earth by comparing the angles of the noon sun at Alexandria and at Aswan (near the Tropic of Cancer) on the first day of the summer solstice. His results were within 180 miles of present day calculations – an error of less than one percent. In 1675, a Danish astronomer, Ole Rømer accurately measured the velocity of light. In 1850, Helmoholtz measured the speed of the nerve impulse. So the question becomes, why did the first actual social psychological experiment not occur until 1898, finally closing a twenty-one century gap between early scientific measurement and scientific social psychology’s first measurement? Several possibilities come to mind.

One possible reason was that social psychological issues were not considered until the 20th century. However, there is considerable evidence that is not true. Hammurabi’s code, the Old Testament and the Qur’an provide considerable evidence that relationships among humans were of considerable interest and in need of forceful regulation. For example, several of the Ten Commandments as well as Levitican strictures address the ethics of interdependence (e.g., slavery), moral behavior, familial bonds, property rights, community obligations, and ritual behavior.
A second possible reason is that social psychological questions were asked but not answered. Again, not so. Earlier thinkers certainly addressed social psychological topics. For example, Book II of Aristotle’s “On Rhetoric” outlines three factors affecting persuasion: Ethos, which included the importance of source credibility as well similarity based on intrinsic characteristics or personal qualities, pathos, which examined the role of the audience’s emotions, and logos, which described patterns of reasoning (Kennedy, 1991). Continuing in the footsteps of Aristotle, Alpharabius (872-950), a Muslim scholar known in the Arabic tradition as the “Second Master after Aristotle”, wrote a treatise on social psychology, entitled Social Psychology and Principles of the Opinions of the Citizens of the Virtuous City in which he discussed the importance of community and interpersonal relationships (Haque, 2004).

This tendency to provide answers to social psychological questions without conducting experimental verification continued for several centuries. There are numerous examples of social psychological writing that did not rely on empirical research. Because of his analysis of human nature, Thomas Hobbes has been called the first social psychologist (Murphy, 1932). Hobbes (1651/1991) was interested in the dominant motives, for example honor, that caused human beings to seek pleasure and avoid pain. Hobbes believed that without the influence of organized society our natural state is “solitary, poore, nasty, brutish and short” (1651/1991, p. 89). His theorizing stood in direct contrast to Jean Jacques Rousseau who believed that we start out noble, essentially good, unselfish and pure, and that organized society ruins us (Cranston, 1999). Both of these positions were anticipated by earlier philosophers. Rousseau’s position can be found in the writings of Mencius, who was a fourth-century BCE Chinese philosopher who ranks second only to Confucius (Lau, 2004). He argued that everyone possesses a “heart-mind” that feels for others. To support his position, he argued from both experience and reason, noting countless examples of human altruism as well as the existence of shame when individuals failed to act altruistically. At about the same time, Xun Zi argued that the political and social chaos of his time supported the view that human nature was essentially evil but could be reformed through education and ritual (Watson, 1963).

Herbert Spencer, in his book Principles of Sociology (1898) applied the theory of evolution to social behavior. Spencer suggested that social behavior goes through a series of stages that follow fundamental laws of development. Thus, to understand contemporary society, we must understand how it has evolved over time. For example, Morgan (1907) suggested that economic life began as hunting and gathering, passed through pastoral life, and has resulted in modern agriculture. Spencer’s name is often associated with Social Darwinism, the theory that applies the idea of “survival of the fittest” to society. As a correlate of this theory, Social Darwinists’ argue that people should resist humanitarian impulses so as to not interfere with the laws of nature.

Herbert Spencer was not the first to apply evolutionary theory to society. August Compte (1852) proposed a theory of sociocultural evolution that suggested that society progresses through three stages. Spencer called the first stage the Theological stage in which human beings explain various phenomena as being caused by personified deities. This stage included fetishism, polytheism, and monotheism. The next stage was the Metaphysical stage in which explanations are based on impersonal abstract concepts. Thus God becomes incorporeal. The final stage is the Positivity stage, which is the scientific stage in which explanations are based on observation, comparison, and experimentation.

A number of important European writers made major contributions to the development of social psychology in the 19th century. Gustav Adolph Lindner was a professor at Prague University when he published his chapter entitled “Fundamentals of Social Psychology” in 1871. Lindner’s
conceptualization of social psychology foreshadowed the influential definition proposed by Floyd Allport in 1924. Lindner (1871, p. 14) defined social psychology as follows:

The task of social psychology is the description and explanation of those phenomena that depend on the mutual psychic effects of individuals, and on which the total mental life of society rests. Society is nothing apart from individuals; hence its mental life cannot be other than that which occurs within the individual consciousness of its members. It follows, first, that the principles of social psychology have to be borrowed form the teachings of individual psychology. Yet that social psychology none the less has its own sphere different form that of individual psychology arises from the fact that the mutual psychological effects, which constitute its subject matter, can only be observed in society. Of course, the conditions of society are reflected in the consciousness of each individual. (Linder, 1871, p. 14)

Another early contributor to social psychology was Gabriel Tarde (1890), who suggested that social explanations of criminal behavior were more plausible than biological explanations. His research was on imitation and his review of “crime waves and epidemics” suggested that imitation was the fundamental social fact that accounted for such events. Tarde concluded that people imitate that which is novel or striking.

A third, and perhaps even more influential person, was Gustave LeBon who, in 1896, published his analysis of the mentality of crowds. He suggested that the “group mind” was responsible for normal agreement among people at one end of the spectrum and mass hysteria at the other end. According to LeBon (1896),

Whoever be the individuals that compose it, however like or unlike be their mode of life, their occupations, their character, or their intelligence, the fact that they have been transformed into a crowd puts the in possession of a sort of collective mind which makes them feel, think, and act in a manner quite difference from that in which each individual of them would feel, think, and act were he in a state of isolation. (pp. 29-30).

LeBon suggested that there are three causes that contribute to why crowd behavior is different. First, unlike individuals, crowds have a feeling of invincible power that makes their reactions more primitive and less subject to control. Second, crowds are subject to imitation and contagion. Third, crowds have heightened suggestibility. As a result crowds can act in ways that are less civilized, less intelligent and more dangerous, although LeBon acknowledged that they can also be more heroic. Thus, a crowd is definitely different from the sum of its parts.

A third possible reason for the late development of scientific social psychology could be that social psychologists were inhibited by the lack of special technology. Eratosthenes needed geometry in order to measure the circumference of the Earth, which was provided by Euclid in 300 BCE. Rømer needed a telescope in order to calculate the speed of light and that was perfected by Scheiner in 1630. Helmholtz needed Galvani’s method of electrical stimulation to measure the nerve impulse. In each of these cases, the necessary technology preceded the breakthrough discovery by about fifty years. However, in the case of scientific social psychology, no special technology is necessary. While scientific equipment helped define psychology as a discipline different from philosophy, social psychology required no tools and therefore did not benefit from the scientific credibility conferred by the use of apparatus. The equipment Triplett needed for his study was available 4000 years before he conducted his experiment.
A final reason for the late arrival of scientific social psychology could be that we thought we already
knew the answers to social psychological questions. During the Middle Ages up to the Reformation,
human behavior was regulated by highly influential institutional mechanisms including law,
religion, and etiquette. These mechanisms were promulgated by a number of powerful institutions,
including feudalism and feudal organizations, class structure, and the church. The Catholic Church
was the most powerful institution of the medieval period. Kings, queens and other leaders derived
much of their power from their alliances with and protection of the Church, while ordinary people
across Europe had to “tithe” 10 percent of their earnings each year to the Church. Institutions like
the Church asserted a significant influence on homogenizing human behavior. One did not have to
crowd psychology and collective behavior. That same year, a second social
psychology textbook appeared. William McDougall’s (1908) Introduction to Social Psychology gave
significant impetus to the fledgling field. McDougall was influenced by the evolutionary point of
view, McDougall suggested that human behavior was a result of powerful urges or “instincts,” and
in the first edition of his book he listed thirteen major instincts, including many that still interest
social psychology — curiosity, self-assertion, submission, and mating behavior (Klineberg, 1940).
While the topics continue to interest social psychologists, McDougall’s “innate tendencies”
explanation came under serious fire. As E. B. Holt (1931) wrote:

Man is impelled to action it is said by his instincts. If he goes with his fellows, it is
the “herd instinct” which actuates him; if he walks alone, it is the “anti-social
instinct”….; if he twiddles his thumbs, it is the thumb-twiddling instinct; if he does
not twiddle his thumbs, it is the thumb-not-twiddling instinct. Thus, everything is
explained with the facility of magic-word magic (p. 4).

Nevertheless, McDougal has been called the father of psychological social psychology although the
person most usually called the founder of experimental social psychology is Floyd Allport. His
research focused on the experimental measurement of social phenomenon. In 1920, Allport’s
research focused on social facilitation effects while ruling out potentially confounding effects, such
as competition (Aiello & Douthitt, 2001). Allport’s (1924) textbook soon outstripped those
authored by Ross and by McDougall and marked the beginning of the “modern” period of social
psychological research. His textbook began by emphasizing two foundational principles. The first
was that social psychology studied both behavior and consciousness. The second founding principle
addressed the subject matter of social psychology, which Allport believed to be the actions of
individuals, regardless of context. He was not a proponent of that idea that collective behavior or
group consciousness existed beyond the reactions of individuals. In the textbook, he stated:

I believe that only within the individual can we find the behavior mechanisms and
consciousness which are fundamental in the interactions between individuals.
There is no psychology of groups which is not essentially and entirely a psychology
of individuals.... Psychology in all its branches is a science of the individual. (Allport, 1924, p. 4).

As a defining principle, this conceptualization effectively differentiated psychological social psychology from sociological social psychology.

In the early days of social psychology, the discipline could be characterized as lacking a theoretical approach but with a growing set of unique methods. For example, in 1926, Edward Bogardus developed the social distance scale to measure attitudes toward ethnic groups. Soon thereafter, Thurstone’s (1927) equal-appearing interval method for measuring attitudes came out, closely followed by Likert’s (1932) development of the Likert scale to use in polling and surveys. In many ways social psychology has been shaped by the concerns of society at the time. In the 1930’s there was considerable research on social issues and this applied approach can be epitomized by the work of Kurt Lewin (1938), whose field theory linked human behavior to social situations. To capture the research being produced, John Dewey and Carl Murchison founded the Journal of Social Psychology in 1929. Ground breaking scholarship of this decade included George Herbert Mead’s (1934) rendition of social comparison processes that involve a “social self” and William James’s (1890) ideas about the plurality of social selves (as many social selves as we have people who know us) described in his Principles of Psychology.

In 1934, LaPiere demonstrated that attitudes and behavior are not consistent by traveling across country with a Chinese couple. Before starting their travels, LaPiere had sent letters to hotels asking if a room could be reserved for a Chinese couple. Although a majority of hotels they stayed had replied and said no, they would not reserve a room for a Chinese couple, the Asians traveling with LaPiere were never refused service. Another influential social psychologist at this time was Muzafer Sherif. His research examined normative behavior. Sherif’s conception of social norms was that they evolved from human interactions over time and exerted a profound influence on human behavior. In 1936, Sherif used the auto-kinetic effect to study the power of social norms (Harvey, 2000).

In reaction to the stock market crash of 1929 and the dust bowl of the 1930s, many young psychologists became interested in studying social issues. In 1936 they formed the Society for the Psychological Study of Social Issues (SPSSI), which was dedicated to the scientific study of important social issues and the support for progressive social action (Stagner, 1986). SPSSI’s impact on social psychology in the 1930s was to encourage applied social psychological research.

The major proponent of applied behavioral science was Kurt Lewin. He engaged in applied behavioral science, action research, and activities that promoted planned change. Lewin focused on the study the group dynamics and group influence on individuals’ behavior. He pioneered research on group dynamics and built the foundation for the scientific understanding of group dynamics (Burnes, 2004).

The next decade brought on WWII and the Holocaust. In his article entitled “Contemporary Social Psychology in Historical Perspective,” Dorwin Cartwright suggested that the one person who had the most influence on the development of social psychology in America was none other than Adolf Hitler (Cartwright, 1979). First, there were a number of prominent psychologists who fled Nazi Germany for friendlier shores. Included were Kurt Lewin who came to Cornell, Max Wertheimer and Theodor Adorno who took positions at the New School for Social Research in New York City, and Wolfgang Köhler who was offered a professorship at Swarthmore College, where he served on the faculty for almost twenty years.
Second, the events of the war and the holocaust galvanized social psychologists to try and understand the level of prejudice that produced genocide. At this time, several influential social psychologists began to regard prejudice as pathological (e.g., Allport, 1954; Meerloo, 1961). With this new worldview in mind, researchers searched for personality factors that led to racism, anti-Semitism, and other forms of prejudice. Theodor Adorno was one of the most prominent of these theorists. In his book, *The Authoritarian Personality*, Adorno and his colleagues (1950) described authoritarians as rigid thinkers who obeyed authority, often unquestionably; saw the world as black and white; and promulgated strict adherence to social rules and hierarchies, which led them to harbor prejudices against those who were lower on the totem pole. Subsequent research has confirmed that “right-wing authoritarianism” is a strong predictor of prejudice, that people who see the world hierarchically are prejudiced against low-status groups, and that rigid categorical thinking is a central ingredient in prejudice (Plous, 2003).

During the war, social psychologists were asked to assist the military in coping with enemy propaganda as well as designing our own propaganda, maintaining troop morale, training effective leaders, improving the performance of aircraft and tank crews, and creating persuasive messages to get troops to do what the Army wanted them to do, for example, brushing their teeth regularly (Hovland, Janis, & Kelley, 1953). Finally, given practical problems of food shortages and rationing back home, social psychologists were asked to convince civilians to change their eating habits (see Lewin, 1943). These challenges led to an outpouring of seminal studies. Lewin discovered that active participation in discussion groups was more effective than lectures in changing what mothers fed their families. Stouffer's (1949) research on morale led to his conceptualization of relative deprivation, which showed that soldiers engaged in active social comparison when thinking about promotions. Research on persuasion by Hovland and his colleagues led to the discovery of the “sleeper effect” whereby a message delivered by a non-credible source can, after the passage of time, influence attitudes and behavior when the audience forgets the original source of the message (Hovland, Janis, & Kelley, 1953).

These war-time efforts affected the trajectory of social psychology in two important ways. First, the interdisciplinary nature of the work during the war led to the development of several interdisciplinary social psychology programs at many of the prestigious schools across the nation including Harvard, Yale, Michigan, Cornell, Berkeley, Wisconsin, and later Columbia and Northwestern (Sewell, 1989). The second way that wartime collaboration affected the field was that many of the participants in war-related research continued to collaborate. One of the most notable collaborations was the postwar program of research on attitude change and persuasion under the direction of Carl Hovland at Yale University. During the war, Hovland ran the experimental section of the War Department’s Information and Education Division Research Branch in Washington, D.C. He led a research team formed to evaluate the function of training programs and study ways to maintain moral standards among American army troops. Hovland’s team designed studies to examine the role of the communicator, the audience, and the content of the message in affecting the persuasiveness of mass communications.

Similarly, Rensis Likert and his team of academics on temporary assignment to the military, moved to the University of Michigan and established the Survey Research Institute (Capshew, 1999). Finally, Kurt Lewin was able to attract a particularly talented group of young faculty and graduate students to his Research Center for Group Dynamics at the Massachusetts Institute of Technology, including Leon Festinger, Stanley Schacter, and Dorwin Cartwright. With Lewin’s untimely death in 1947, Cartwright moved the Center to the University of Michigan and merged with the Survey Research Center to form the Institute for Social Research.
Since WWII, social psychology has taken on an ever-increasing set of topics, reflective of the societal issues encountered in each succeeding decade. In the 1950s in the aftermath of the war and with the onset of the Cold War, social psychologists turned their attention to conflict and conflict resolution, obedience to authority, and conformity. For example, in 1956, Morton Deutsch was employed by Bell Telephone Labs, where he did research on bargaining and small group processes. One of his more prominent studies was the Acme-Bolt Trucking game, which found that when there was an opportunity to apply threat to one’s opponent, individuals use threat and that this in turn reduces cooperation (see Deutsch, 1999). Milgram’s research program studying obedience to authority, from 1963 into the 1970s, demonstrated how ordinary people could be induced to harm others, which helped us begin to understand the holocaust. Finally, with regard to conformity, Solomon Asch (1951) conducted a now classic experiment to examine how majority group pressure affected conformity. His well-known line judgment task, in which seven confederates gave wrong answers in order to influence a naïve participant, found that about one third of participants conformed to the majority view. Two reasons for such conformity are that individuals want to fit in with the group (normative influence) and believe the group may be better informed (informational influence).

In the 1960’s social psychologists turned their attention to self-evaluation, social comparison, and the role of cognitive dissonance in affecting attitudes and behavior. In 1959, Leon Festinger and his student, Merrill Carlsmith, demonstrated that individuals are more likely to change their attitudes when they are confronted with insufficient justification for maintaining those attitudes, and that when confronted with a disconnect between one’s attitudes and their behavior, individuals resolve this dissonance by changing whichever is easier to change in order to achieve cognitive consistency. Leon Festinger was a legend and “a commanding figure in psychology” (Gazzaniga, 2006, p. 89), due in part to his theory of cognitive dissonance as well as his theory of social comparison, which states that when we are unsure about our attitudes, beliefs or abilities, we compare ourselves to similar others in order to form a valid self-evaluation.

Another important theory developed at this time was the two-factor theory of emotion: physiological arousal and cognitive labeling. This theory was developed by Stanley Schacter and Jerome Singer (1962), who conducted research on social psychological factors that affect emotional states and found new support for the role of imitation and suggestion.

With the arrival of the 1970’s, social psychologists heeded the call for relevance and as a result began to seriously study gender differences, thanks largely to Elaine Hatfield and Ellen Berscheid, whose research examined interpersonal attraction (1969), physical attractiveness (1974) and passionate love (1971), as well as Janet Taylor Spence’s (1974) work on measuring gender roles (Spence, Helmreich, & Stapp, 1974) and Sandra Bem’s development of the Bem Sex Role Inventory, which introduced the concept of androgyny (Bem, 1974). The 1970’s also saw an outpouring of research on the effects of the environment, especially crowding, personal space and human territoriality (see Barker & Schoggen, 1973 for their summary of fourteen years of descriptive research on behavior settings). Another topic to receive considerable attention in the 1970s was helping behavior, especially studies of bystander intervention by Bibb Latané and John Darley (1970) whose book The Unresponsive Bystander: Why Doesn’t He Help? described their research on factors that influence bystander intervention in emergencies. Finally, research inspired by attribution theory, and fueled by the 1972 publication of “Attribution: Perceiving he Causes of Behavior,” edited by Edward E. Jones and his colleagues, began to flourish. This new impetus owed a large debt to the work of Fritz Heider, whose book, The Psychology of Interpersonal Relations
According to Allport (1954), social psychology is “an attempt to understand and explain how the thoughts, feelings, and behaviors of individuals are influenced by the actual, imagined, or implied presence of others” (p. 41). It has also been largely an American phenomenon with over 90% of what is published in social psychology is published in English (Jones, 1985). With that in mind, what is the likely future of social psychology? First, with increasing globalization, explanations for social behavior are going to expand to include cultural influences on social behavior. At the present time, America contains 5% of the world population but scholars attempt to generalize research findings to all people. Furthermore, explanations for certain behavior may include the contributions of biology, culture, and the environment. The role of social neuroscience and evolutionary reasoning is likely to increase. Technological Innovation will provide more precise measurement tools capable of faster information processing and analysis, which along with more sophisticated experimental methodology will improve the accuracy, reliability, and replicability of social psychological studies.

Vignettes

1. Bystander Intervention
Social psychology is ripe with examples of how real-world events have shaped scientific inquiry, including how the U.S. Cabinet’s deliberations about the Bay of Pigs invasion formed the basis of Groupthink, cold war nuclear proliferation led to research on the role of threats in bargaining, and the holocaust formed the basis for Milgram’s studies of obedience. In this vignette, I will discuss how the murder of Kitty Genovese led to a whole new line of inquiry into helping behavior in emergency situations.

Kitty Genovese's murder is one of the most famous in modern American history. Walking from her car to her New York City apartment, she was attacked and stabbed twice. Her screams attracted the attention of neighbors, but according to highly sensationalized, and somewhat inaccurate press reports, not one of the 38 people who witnessed the murder responded to her screams for help or came to her aid when her killer returned to finish the job. Media reports blamed the anonymity of living in a large city and decried the apathy, blatant indifference, and lack of concern of big city dwellers. This level of explanation did not satisfy John Darley and Bibb Latané, who became interested in exploring non-personality related variables that could explain the neighbor’s behavior (Darley & Latané, 1968). This lack of helping behavior became known as the bystander effect and is one of the most replicated findings in social psychology (see Garcia, Weaver, Darley, & Moskowitz, 2002).

According to Darley and Latané (1970), there are five characteristics of emergencies that affect bystanders. Emergencies are (a) generally unusual and rare, (b) involve threat of harm of actual harm, (c) cannot be predicted or expected, and (d) require immediate action, although the (e) type of action can differ from emergency situation to situation. In a situation involving these five characteristics, bystanders go through a series of cognitive and behavioral processes starting with noticing that something is happening. To test this factor, Latane and Darley (1968) staged an emergency with university students who were seated in a room, either alone or with a group of
strangers, none of whom was a confederate of the experimenter. When smoke was pumped into
the room, the students seated alone noticed the smoke within five seconds while those seated with
strangers took up to 20 seconds to notice the smoke. Latané and Darley suggested that this was
due to the social norm of not idly look around the room at strangers.

The second process is to interpret the situation as an emergency. Bystanders tend to monitor the
other people’s reactions to a possible emergency situation and if others are not intervening they
are likely to consider the situation to not be an emergency. This can be seen as examples of social
proof, as in everyone else is doing it so why don’t I, and also of pluralistic ignorance, where
individuals guess wrongly about others attitudes and beliefs. In the famous experiment by Darley
and Batson (1973) seminary students began experimental procedures in one building and were
then told to go to another building to continue. On the way they encountered a man slumped in an
alleyway (the victim’s condition was unknown – was he hurt or drunk?). Those who were told that
they were late for the next task often did not interpret the slumped man as one needing
emergency assistance.

In determining the extent to which bystanders feel some responsibility to help is dependent on
three factors. First, bystanders tend to judge whether or not they think that the person deserves to
be helped. This could be based on whether the person is thought to be responsible for the trouble
he or she is in. Second, bystanders assess their own competence. Do they feel up to the task of
helping or is there likely to be a more competent person around. Having received some flight
training, I sometimes ask myself, if the commercial pilots were disabled, would I be the best person
to volunteer, or should my limited training lead me to keep my mouth shut. Third, the relationship
or lack thereof between the bystander and the victim plays a role in whether or not to help. For
some relationships, for example parent and child, helping is the normative expectation. Fourth,
Latané and Darley (1968) described two possible avenues of assistance. Bystanders can directly
intervene to help a victim, or bystanders can engage in what they termed “detour intervention,” in
which the bystander reports the emergency to appropriate authorities. Finally, after going through
the first four steps, the bystander is faced with implementing his or her action choice.

The probability of the action choice being one of helping the victim is affected by a number of
variables. First, the likelihood of helping is inversely related to the number of bystanders. In other
words, the greater the number of bystanders, the less likely it is that any one of them will help, in
part due to ambiguity related to pluralistic ignorance, cohesiveness, and diffusion of responsibility.
Other factors that attenuate the bystander effect include how dangerous the helping situation is,
the presence or absence of perpetrators, the sheer physical costs of intervention (Fischer et al.,
2011), and the strategies that individuals have adopted to cope with daily informational overload
(Christensen & Levinson (2003).

2. The Implicit Association Test
The roots of prejudice are many and varied. They include personality factors including right-wing
authoritarianism and social dominance orientation, cognitive factors such as categorical thinking,
motivational factors such as the need for self-esteem, and social factors including negative in-group
attributions for out-group behavior (Plous, 2003). Research documenting the role of these factors
began in the 1920’s and initially supported the view that White people were a superior race (e.g.,
Garth, 1925). This changed in the 1930’s and 1940’s with a fledgling civil rights movement and
growing concerns about colonialism and the “pathological” anti-Semitism of the holocaust (see
Adorno, et al., 1950). Research on prejudice continued apace until the point at which the concern
with political correctness affected how individuals responded to questionnaires and surveys.
For example, I once supervised the dissertation of a German doctoral student who wanted to measure prejudice against women. In asking other students at the University of Cologne, she came up with the unlikely finding that not one male she interviewed was prejudiced against women. Some of the guys she interviewed were friends, and she knew from informal gatherings at the local gasthaus that they held very different views than they reported. In the end, we designed a study in which participants reviewed resumes for highly desirable jobs for which the candidates differed in only one respect – their first names: Hannah or Hermann. Not unexpectedly, Hermann got the better jobs (Wollschlaeger, 1981).

Over time, the measurement of explicit biases and prejudice ran into difficulties. Enter the implicit-association test. The implicit-association test (IAT) is a measure that detects the strength of a person’s automatic association between mental representations of objects or concepts. The IAT was introduced by Greenwald, McGhee, and Schwartz in 1998. The conceptual framework for the IAT began three years earlier with an article by Greenwald and Banaji (1995) who asserted that the idea of implicit and explicit memory could be applied to social constructs as well. They reasoned that memories of which we are not consciously aware can influence not only our actions, but also our attitudes and behavior. In addition, where prejudice exists, stereotypes cannot be far behind. Stereotypes can also be activated outside conscious awareness by a fleeting image or word related to the stereotyped group, and once activated, can influence attitudes and behavior (Greenwald & Banaji, 1995). Thus, a measure of implicit attitudes including biases and stereotypes allows investigators to tap into attitudes that cannot be accurately measured through explicit self-report methods, which can be distorted as a result of awareness or the activation of the social-desirability bias.

How does it work? The IAT is a computer-based measure that requires participants to rapidly associate two target concepts with an attribute, for example, Black and White with Gangbanger. The speed of the pairing is interpreted as indicative of a stronger mental association, and the slower the pairing suggests weaker mental associations. The actual process involves seven tasks. First, individuals categorize a variety of stimulus words into two groups, for example White and Black. Next, the person sorts a series of stimulus words into two groups labeled pleasant or unpleasant. The third task requires the individual to respond to word combinations like White/Unpleasant. The fourth task asks the participant to repeat the third task repeating names, words or images. In the fifth task, participants repeat Task 1, but with the placement of the target words reversed and in the sixth task they repeat Task 3 with the objects and subjects of study presented in opposite pairings from the earlier task. Finally, the seventh task is a repeat of Task 6 with more repetitions of names, words or images (Nosek, Banaji, & Greenwald, 2007).

The IAT has opened up new avenues of research, especially into what is called implicit bias, a concept introduced to many Americans in the second Presidential debate of 2016. Implicit bias
can be defined as the attitudes or stereotypes that affect our understanding, actions, and decisions in an unconscious manner. Implicit biases can be both positive and negative. They are activated involuntarily without conscious awareness and are thought to reside deep in our subconscious. They are not the same as known biases that we try and conceal for purposes of social or political correctness. Implicit biases are common to all of us, related to but different from explicit biases, and not necessarily the same as our declared beliefs. In general, our implicit biases favor our own in-group although individuals can hold implicit biases against their group. Finally, even implicit biases can be unlearned through a series of debiasing techniques (Banaji & Greenwald, 2013).

Why do we care? Implicit biases can influence real-world behavior. For example, Sabin and Greenwald (2012) found that pediatricians’ implicit racial attitudes influenced their treatment recommendations for four common pediatric conditions. Pediatricians with a pro-White implicit bias were more likely to prescribe painkillers for patients who were White as opposed to those who were Black. Additional research has found that the stronger a person’s associations of good with White faces and bad with Black faces, the more likely they are to engage in hiring discrimination (Bertrand et al., 2005), “shoot” unarmed Black men in a computer simulation compared to unarmed White men (Glaser & Knowles, 2008), and to accurately diagnose and prescribe appropriate treatment for White patients with coronary artery disease compared to Black patients who were described as having equivalent symptoms and electrocardiogram results (Green et al., 2007).

3. Kurt Lewin
Kurt Lewin is generally recognized as a founding father of social psychology as well as applied psychology, industrial/organizational psychology, and the study of social issues. Lewin was one of four siblings born in what is now Poland to a Middle-class, Jewish family. The family moved to Berlin when Kurt was 15 so that the children could receive a better education. He studied medicine at the University of Frieburg and biology at the University of Munich. Lewin served in the German army during WWII and was injured in combat. As a result, Lewin returned to Berlin and completed his doctoral degree in psychology from the University of Berlin, studying with Carl Stumpf, who also directed the doctoral studies of Wolfgang Köhler and Kurt Kofka. (Greathouse, 1997).

In part as a result of his experiences in the war, Lewin became a proponent of using science to solve real-world social problems, which ultimately led to his development of the MIT Research Center on Group Dynamics. He developed a field approach that went beyond describing group activities to investigate factors that cause groups to change or to resist change. At MIT he coined the term “action research,” which he described as “comparative research on the conditions and effects of various forms of social action and research leading to social action.” This approach uses a spiral of steps, each of which is “composed of a circle of planning, action, and fact-finding about the result of the action.” (Lewin, 1946). The six major program areas that he developed were group productivity, social influence, social perception, intergroup relations, group membership and leader training. Lewin’s approach has been utilized in improving educational facilities, industrial settings, and communities (Hothersall, 1995).

His approach to research and application in each of the six program areas was guided by Lewin’s famous quote that “There is nothing so practical as a good theory” (Lewin, 1951, p. 169), which is
well known in the discipline. That said, this quote is often used in a way that misrepresents Lewin’s position. Lewin proposed that theory and empirical verification should go hand in hand so that both basic and applied aspects of a researchable question could form a true dialogue. Simply said, he called for “close cooperation between theoretical and applied psychology...” (Lewin, 1951, p. 169).

Applications of Lewin’s approach have taken two forms (Buschini, Guimond, & Breakwell, 2010). First, psychologists working with a particular theory analyze a societal problem as a way of testing the application and limitations of their theory. This approach is the most common one used in the discipline, but clearly truncates the approach that Lewin had in mind. This approach results in confirmation or disconfirmation of the usefulness and relevance of particular theories that help us understand particular social problems. As a result, the application of theory to different issues results in articles in specialized journals that don’t recognize the broader application of the theory. Thus, the usefulness of a theory that explains health-related behavior may also explain organizational dynamics, but the readers of articles in the one area can be oblivious to the application of the theory to the other.

The second approach to promoting close cooperation between theory and application is to take a social problem as the starting point without initial regard for possible theoretical underpinnings and to try to work toward a solution for, or at least and improvement in, the social problem. In this case, the problem is not a handy lab for the theorist to test his or her hypothesis but rather a problem that needs theoretical understanding to provide a lasting solution. This approach can promote the development of new analytic approaches and perhaps new theories while at the same time solving real social problems.

Over the years, a number of handbooks of social psychology have been published. Among recent handbooks, Brewer and Hewstone (2004) provide a good example of the first approach to the relationship between theory and application, while Buunk and Van Vugt (2008) is a good example of the second approach as evidence by their “PATH” model (Problem, Analysis, Test, & Help). In recent handbooks, several new fields of application have appeared, and social psychologists have been called upon by journalists, politicians, and social reformers to provide answers that may require them to speculate far beyond their more narrow research interests.

This evolving set of applied areas has also caused institutions of higher education to develop new programs and areas of specialization, for example forensic psychology and health psychology. In addition, new social problems such as climate change and newly recognized issues like implicit bias, have provided new areas to which scientists can apply social psychological research. How we prepare students to conduct research in newly developed fields can benefit by fully implementing Lewin’s mandate that theory and application work together.

References


The Rise of Rogers’ Humanistic Psychology and Skinnerian Behaviorism in Mid-20th Century America: The Historical Context of Personality Theory

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Personality theories both reflect and influence American culture. From the late 1940s until the 1970s, personality and its applications to behavior change which reflected societal shifts in social values. Prior to the 1940s, personality did not focus on individual differences; instead, personality emphasized an ideal set of virtues. Gordon Allport is often credited with changing personality from the study of character to an examination of individual distinctiveness (Nicholson, 2003). While historical changes in the influence of specific personality theories are often demarcated by historians (e.g., those who discuss “The rise of behaviorism and death of psychoanalysis.”), these boundaries are far from firm. The progression from psychodynamic perspectives in the 1930s and 40s to radical behaviorism of the 1950s and 60s and finally, humanistic psychology peaking in the 1970s did not occur abruptly but as a series of gradual transitions. After a discussion of personality’s rise as a field of study, this chapter examines U.S. culture and the ways that views of personality both influenced and were influenced by the era’s social history.

Prior to writing his well-known work, The Structure of Scientific Revolutions (1962), Thomas Kuhn (1957) described the history of Copernican astronomy. This literal shift in world-view, from the Ptolemaic system with the earth as the universe’s center to Copernicus’ heliocentric perspective with the earth and other planets revolving around the sun, did not arise in an historical vacuum. Kuhn (1957) suggests that the Copernican worldview occurred in a context of large-scale social change as Europe transitioned from a mediaeval worldview to an eventual renaissance in culture, science and religion. While Copernicus’ ideas occurred within a climate of social and political change in European society, the new heliocentric model also contributed to this historical era’s challenge to existing knowledge and authority.

Europe in the 1500s was a time of confronting the status quo. The initial 1543 edition of Copernicus’s “On the Revolution of Celestial Spheres” (Copernicus, 1543/1975) appeared 35 years after Martin Luther had openly challenged the teachings of one of Europe’s most powerful institutions—the Catholic Church. Luther’s (2012) disruption of the status quo with “The 95 theses on the power and efficacy of indulgences,” produced a theological upheaval in Christianity. Philosophers of science and sociologists of knowledge suggest that fundamental changes, featuring challenges to the prevailing understanding of humans’ place in the universe and their relationship to God, gain greater acceptance in an era receptive to new ideas. Kuhn describes how a change in the field of astronomy resonated throughout European society in this era:

Initiated as a narrowly technical, highly mathematical revision of classical astronomy, the Copernican theory became one focus for the tremendous controversies in religion, philosophy, and social theory, which, during the two centuries following the discovery of America, set the tenor of the modern mind. Men who believe that their terrestrial home was only a planet circulating blindly about one of an infinity of stars evaluated their place in the cosmic scheme quite differently than had their predecessors who saw the earth as the unique and focal center of God’s creation. The Copernican revolution was therefore also part of the transition and Western man’s sense of values. (Kuhn, 1957, p. 2).
While the conflicting views of human personality during the 20th century probably do not pose the same degree of challenge to our world-view as the Copernican revolution, these descriptions of motivation, development and personality change reflect the historical era in which developed and became recognized by psychologists as well as U.S. society. In a similar vein as Kuhn (1957) suggests for the Copernican revolution, while there are suggestions that the “golden age” of a personality theory occurs within a socially and politically compatible historical period, views of personality are also factors that contribute to and intensify social change.

The United States is a “psychological culture”—a country in which psychological explanations are highly valued (Sommers & Satel, 2007). As a result, new developments in the field often do not stay within the professional or scientific psychology community but instead diffuse into the wider culture. This chapter focuses on several of the historical factors associated with the increased prominence of Skinnerian behavioral and Rogerian humanistic perspectives in American personality theory. These theoretical models, while often seen as polar opposites, both reflect key social changes during post World War II America and contributed to cultural change. Both Rogers and Skinner extended their theories to address social problems within the United States as well as international conflicts. However, it is important to recognize that in the 1940s, B. F. Skinner and Carl Rogers were—relatively speaking—pioneers in this new field of personality psychology.

The Death of Character and the Birth of Personality

Personality as the study of individual differences has a relatively brief history in American psychology (Nicholson, 2003). Not long before the rise of behaviorism and humanism, American psychology underwent a fundamental change in its view of personality. As historians of personality psychology note, through the early 1900s, personality, as the study of individual differences, was not a recognized topic within psychology (Nicholson, 2003). Instead of personality, the focus was on character (Nicholson, 2003). Rather than the contemporary focus on how individual uniqueness, the character emphasis described an ideal personality which all should strive to attain and which is attainable by anyone who strives sufficiently. With its strong moral overtones, character, as a uniform set of virtues, was the subject of multiple self-help books as well as guides for parents and teachers (Prior, 1991). Of note, many of these desired character traits date back to the ancient Greeks and include virtues such as moderation, justice, wisdom, courage, and prudence (Prior, 1991). In the current era of cognitive therapy, it is interesting to read the exhortations on character of early 20th century writers:

Moreover, I think a man ought to ask himself in these lower moments, Why the lower moments? And the second suggestion, therefore that I have to make is: keep yourself persistently at your best. You have no right to have these lower moments continually breaking in upon your life. Just as in health that is the secret so here in character it is the secret. You are to guard conditions and strive to keep yourself at your very best. Not tolerable health but superb health,... The problem of character is the problem ultimately of self-control (King, 1902; pp; 7-8).

In a textbook for school children (White, 1909), each chapter covers a desired virtue. In discussing emotional self-control (“The Folly and the Wrong of Giving Way to Temper”), White (1909) describes the abolitionist Henry Ward Beecher as an example of self-control (i.e., “Beecher’s self-control and self-poise was potent in turning public sentiment against slavery,” p. 45) and Edgar Allen Poe as someone lacking this virtue (“Edgar A. Poe is an example of the lack of self-control. He could not resist the temptation to drink, which destroyed a career that might have made his name the brightest in American literature,” p. 45).
This change, from personality as character to personality as individual differences, had progressed substantially by the early 1930s. In a country undergoing increased industrialization as well as population growth, Americans, according to Nicholson (2003), were in danger of becoming anonymous. Rather than emphasizing moral responsibilities to others, the concept of personality was in sync with “… an industrialized and urbanized age: expressive, adaptable, and morally unencumbered..., having a personality was to be a somebody” (Nicholson, 2003; pp. 5-6). The early trait theories of Gordon Allport and Raymond Cattell (Hall, Lindzey, & Campbell, 1998) appear to straddle the division between the concepts of character and a personality of individual differences.

To the contemporary 21st century American, immersed in a culture of reality television where personality alone can lead to fame and fortune in the absence of any other accomplishments (Kjus, 2009), a culture of character as described by White (1909) may appear quaint. However, while well beyond the scope of this particular chapter, it is noteworthy that character has recently returned to psychology through the study of virtues leading to the “good life.” Within positive psychology, Peterson and Seligman (2004) developed a classification system of 24 character strengths organized according to six virtues. Of interest, there appears to be agreement in the importance of these character features across cultures (Peterson & Seligman, 2004). In the discussion that follows, it will be evident that this tension, between personality as distinctive and unique versus a specific set of processes with universal coverage, is a reoccurring theme in the behaviorism–humanism debate (Dooley, 1982).

**Carl Rogers**

Carl Rogers’ theory of personality developed primarily through his work as a counselor and psychotherapist. After spending the years from 1928-38 as a psychologist at The Society for the Prevention of Cruelty to Children in Rochester, New York, Rogers published his first book. He described his orientation to therapy during this period as “eclectic” (Rogers & Russell, 2002, p. 114). He then moved to Ohio State University. While at Ohio State, Rogers did some early research on psychotherapy. Rogers was one of the first psychotherapy investigators to systematically tape-record and transcribe therapy sessions. Analysis of these transcripts focused on important patterns of interaction between therapists and clients. In his early observation, Rogers noted that therapists’ questions to clients often disrupted the flow of the session (Rogers & Russell, 2002). In terms of his theory, Rogers indicated that it was at an “infant stage” (Rogers & Russell, 2002, p. 136) when he wrote his second book about psychotherapy before moving to the University of Chicago in 1945 to develop a counseling center. It was at the University of Chicago that Rogers went beyond having a theory of therapy to developing a more comprehensive theory of personality.

In reviewing therapy sessions, Rogers noted that when the therapist provided an environment of warmth, unconditional positive regard, and genuineness, clients would begin to examine previously unacknowledged aspects of their personality. According to Rogers, incongruence between one’s genuine “organismic experience” (Hall et al., 1998; p. 467) and a self or identity developed to maintain positive regard of others created emotional distress, bringing the client to therapy (Hall et al., 1998). These conflicts, in turn, both create emotional distress through incongruence but also prevent self-actualization (Hall et al., 1998). Rogers, while developing a quantitative category system for assessing pre-post therapeutic changes, argued that categories such as diagnoses or traits were overly broad and negated the subjective, phenomenological world of unique experience.
B. F. Skinner

While Skinner did not consider himself a theorist and believed that personality was essentially a fiction (Hall et al., 1998), most personality theory textbooks include his view of radical behaviorism. Skinner concluded that personality is little more than a label for consistent patterns of behavior associated with environmental stimuli (Hall et al., 1998)

By the 1970s, Skinner was the best-known scientist in America (Rutherford, 2009), but his early work did not have such a broad audience. The Behavior of Organisms, published in 1938, describes his basic principles of reinforcement (a reinforcing stimulus increases the frequency of behavior that it immediately follows), extinction (reduction in the frequency of a behavior associated with the absence of reinforcement), generalization (response is maintained in the presence of a new stimulus), and early work on schedules of reinforcement. Skinner eschewed any internal motivational explanations for behavior such as Hull’s (1952) drive reduction theory.

Contrasting with contemporary investigations large-sample studies, Skinner studied responses of single animals—rats or pigeons—in a device later known as a Skinner box. After further developing schedules of reinforcement, Skinner applied his model to humans in a novel, Walden II (Skinner, 1948), describing a community based upon operant principles. After developing an account of language acquisition as reinforced behavior (Skinner, 1957), Skinner and Noam Chomsky had several public debates about whether language was a function of reinforcement or a genetically-based capacity.

The Linear Chronology of Personality Theory and Reality

In teaching personality, it is common to use a chronological approach such that psychodynamic theory’s successor is behaviorism with humanistic theory following (see e.g., Olson & Hergenhahn, 2011). This view is consistent with the often-used labels of psychodynamic theory being the “first force,” behavioral theory as the “second force,” and humanistic theory as the “third force” (Greenwood, 2009). Each of these approaches is a reaction to the limitations of its predecessors.

However, while each of these movements may have captured popular attention in this temporal sequence, the actual development and seminal writings associated with each of the three perspectives overlap considerably in time. For example, while the late 1950s and early 1960s coincided with the rise of both behaviorism (Rutherford, 2009) and later humanistic psychology (Grogan, 2013), psychodynamic theory continued to exert significant influence on American culture (Prochaska & Norcross, 1983; Samuel, 2010). The best-selling parenting book during that time was Dr. Benjamin Spock’s Baby and child care (Spock & Fox, 1979), which has been described as heavily influenced by Freudian theory (Maier, 1998). While Skinner’s work initially appeared in the late 1930s and early to middle 1940s, his classic, Science and human behavior (Skinner, 1953), initially appeared in the early 1950s. However, Carl Rogers’ first book, Clinical treatment of the problem child (Rogers, 1939), appeared only a year after Skinner’s (1938) The behavior of organisms. Rogers’ first book considered to be in the “client centered therapy” genre, Counseling and psychotherapy: Newer concepts in practice, (Rogers, 1942), preceded Skinner’s (1948) novel, Walden II (Skinner, 1948). In reality, the development of the “second” and “third” forces occurred simultaneously rather than sequentially, as often presented (Greenwood, 2009).

Social Change in Post-World War II America

Scientists, including psychologists, devoted much of their wartime careers to helping America succeed in defeating the Axis powers (Greenwood, 2009; Rutherford, 2009; Demanchick & Kirschenbaum, 2007). During the post war period from the late 1940s to the early to middle 1970s,
World War II’s legacy continued to both directly and indirectly influence American culture. While it is difficult, if not impossible, to isolate specific themes as distinct from one another, the remainder of this chapter will do so out of the necessity of clarity.

Cultural forces that both influenced and were influenced by radical behaviorism and humanistic psychology include the public recognition of science, applications of new technology to domestic life and accompanying consumerism, a pervasive national fear of Communism, and the changing roles of U.S. women. Again, efforts to compartmentalize these changes would be artificial; these factors often were mutually influential. These transformations in American society supported both radical behaviorism and humanistic personality theory, but, reciprocally, these psychological theories also contributed to social change. In addition, these cultural shifts often triggered counter responses. For example, humanistic psychologists, and particularly their existential colleagues, raised concerns that radical behaviorism influenced the emotional emptiness associated with consumerism and conformity (Grogan, 2013).

**Views of Science**

The atomic bomb, bringing an end to World War II in Japan, brought science to the fore of American consciousness (Isaac & Bell, 2012). As part of the war effort, science had developed rapidly and gained public esteem. However, as “Big Science” helped bring the war to a close, a question emerged: “What to do with the artificially pumped up scientific infrastructure created by the military-industrial complex during wartime?” (Isaac & Bell, 2012, p. 195). While Carl Rogers developed his early ideas about therapy in the Rochester Child Guidance Clinic and Skinner, along with Ferster developed a more precise radical behaviorism through reinforcement schedules (Ferster & Skinner, 1957), post war science improved home food preservation and other unpleasant domestic tasks.

Skinner’s applications of radical behaviorism for improving the quality of everyday life, lagged a bit behind many other new practical labor saving technologies emerging from World War II’s military industrial complex. For example, Tupperware, plastic containers designed to keep leftovers fresh, owe their existence to chemical research during World War II (Clarke, 2014). The DuPont Chemical Company’s famous phrase, “Better Things for Better Living ...Through Chemistry” (later shortened to “Better Living through Chemistry”) originated in the late 1930s (Clarke, 2014). Earl Tupper had a pre-war plastics company that manufactured items such as hairpins and combs (Clarke, 2014). During the war, Tupper joined the effort by subcontracting for DuPont to make plastic parts for military equipment. In that period, he worked with a particularly resilient form of polyethylene. Using what he termed “The Material of The Future,” Tupper developed a lightweight, plastic alternative to the glass jars and metal containers typically used for kitchen storage. Tupperware’s ads famously touted the containers’ modern non-snap lid and vacuum seal; “Always remember to ‘burp’ it or it won’t have that vacuum seal” (Ascher, 1980, p. 326).

If kitchen containers for dinner leftovers could ride the wave of science, psychology could certainly do the same. Skinner’s behaviorism, with its laboratories, specialized equipment, charts depicting precise counts of pigeon pecks, or bar presses by rats, was a major force for the frequently cited definition of psychology during this era, as the science of human behavior (Myers, 2004). Indeed, in many universities, during the 1950s and 1960s, psychology was radical behaviorism.

Personality textbooks often present Skinner as an heir to John B. Watson, who applied classical conditioning to humans in the early 1900s. However, Skinner conducted and presented his work with a much higher level of precision and viewed learning as fundamentally more complex than Watson’s application of Pavlovian principles (Hall et al., 2008). Because of its associations with the
laboratory, radical behaviorism appeared readily connected with the public’s respect for science. Skinner’s recognition as the public face of science was cemented when he participated in an interview for Playboy magazine—the title of the article was “God is a variable interval” (Rutherford, 2009).

While earlier learning theorists such as Thorndike had applied the concept of operationism to learning theory, Skinner takes operationism to its extreme (Isaacs, 2012). In Skinnerian behaviorism, operational definitions of reinforcement, extinction, and punishment, are essentially quantitative increases or decreases in frequency of specific behavior (Isaacs, 2012).

On the surface, Rogers’ phenomenological theory appears “antiscientific” compared with Skinner’s radical reductionism. Rogers would not have agreed with this characterization nor with Skinner’s definition of science. During his famous 1956 debate with Skinner, Rogers articulated his perspective: “Scientific facts are second order descriptions of a more basic reality... [which is that of ]... human behavior and choice which exist prior to and make possible any scientific endeavor” (Dooley, 1982, p. 282). According to Rogers, in addition to failing to recognize the limitations of what Skinner would term “science,” his experience as a psychotherapist led him to conclude that if individuals are recognized as having free will, a self-determined, creative personality will emerge (Dooley, 1982). The fundamental difference between the two personality theorists centered on the type of evidence considered relevant (Dooley, 1982). In his later writings, Skinner argued that he was indeed a humanist, who sought to define and harness reinforcement contingencies for a better quality of life—a theme of his novel, Walden II and a later book of social philosophy, Beyond freedom and dignity (Skinner, 1972). Skinner also wrote essays about humanistic behaviorism in magazines for the general public.

While Skinner is often characterized as “more scientific” than Rogers, psychotherapy researchers would view this conclusion as a gross mischaracterization. Rogers is typically credited with being one of the first investigators to systematically study psychotherapy (Braakman, 2015) and one of the first psychologists recognized by the American Psychological Association for Distinguished Scientific Contributions (Braakman, 2015). By carefully listening to recordings and analyzing transcripts of therapy sessions, Rogers made causal connections between therapists’ verbalizations and clients’ responses. Rogers’ application of the Q sort method to psychotherapy outcome research was also innovative. At the outset of therapy, patients sorted a series of cards with phrases (e.g., “I am uncomfortable in social situations”) into Likert scale categories (1=not at all like me, 9=very much like me). Patients were also asked to classify these phrases according to the same Likert continuum as they described an ideal self. This pre-post therapy assessment—yielded findings consistent with Rogers’ theory that effective treatment reduced the discrepancy between the real and ideal selves (Hall et al., 1998).

Technology and Consumerism

In 1952, then Vice President Richard Nixon had a celebrated exchange with the Soviet Premier Nikita Khrushchev, which came to be known as the “Kitchen Debate.” Nixon was in the Soviet Union attending the American National Exhibition. Nixon and Khrushchev toured a series of exhibits of American life and culture. While examining a modern American kitchen full of the most recent appliances, Nixon pointed out to Khrushchev that technology could be used for peaceful purposes rather than for missile development (May, 2008). At this particular historical juncture, Nixon had good reason to suggest alternatives for Soviet technology, because the U.S. lagged behind the U.S.S.R. in missile development (May, 2008). Khrushchev, unimpressed with the American kitchen, countered that if they wanted to, the Soviets could have equally modern kitchens within a few years—essentially trivializing American consumer technology. Even this debate reflected the
intensity of the cold war. When Nixon stated, “What we want to do is make easier the life of our housewives,” Khrushchev replied, “...[We] do not have the capitalist attitude toward women” (May, 2008, p. 21). The debate, widely broadcast in the United States, led the modern kitchen to become a symbol of capitalist technological development by the Soviets who were using science for military purposes rather than to benefit their own citizens directly.

Purchasing the most recent and up-to-date technology and appliances became a reflection of America’s well-developed application of science as well as a sign of a happy domestic life. One of Skinner’s best known contribution to family life was the air crib, also called a baby tender, designed to make life easier for new mothers (Rutherford, 2009). The crib was temperature controlled and had a movable sheet on the bottom, moved by a roller which could produce an unsoiled surface after the soiled cloth was rolled away. Skinner considered it to be a success and directions for building air cribs are still available (http://www.gearability.com/2007/04/building-a-skinner-air-crib). Appliances such as Skinner’s air crib were consistent with the gleaming modern refrigerators and washing machines as well as vacuum cleaners that carried the subtext of making housework appear attractive to women who, after the end of the war, faced expectations to re-embrace the roles of fulltime housewives and mothers (May, 2008).

Another Skinnerian device, the Teaching Machine, received considerable publicity. Rutherford (2009) suggests that Skinner’s educational device set the stage for the increased application of technology to primary and secondary education in the 1960s and 1970s. In observing his daughter’s class, Skinner noted the impossibility of a teacher being able to give consistent reinforcement to multiple children—the reality was that the teacher went from child to child while their classmates waited for their turns. As result, Skinner developed a hand-held box-like device in which small amounts of content appeared in a window. Immediately after reading the segment or viewing a math problem, the student answered questions about the content to which they had just been exposed. If the student answered the question correctly, he or she moved on to the next segment (Rutherford, 2009).

While humanistic psychologists did not generate machines to make life easier, Skinner’s labor-saving devices, were, perhaps paradoxically for many critics, an impetus to reject the second force of radical behaviorism and align themselves with Rogers’s and Maslow’s humanistic third force. These critics decried the use of teaching machines as dehumanizing education.

With growing public apprehension about alienation and automated mass culture, Skinner’s inventions began to be viewed with anxious concern (Grogan, 2013; May, 2008). American citizens were wary that devices of this type could be used by a totalitarian government to create a populous of passive sheep that could be manipulated by government leaders. Some critics analogized Skinner’s applications to George Orwell’s, book 1984 (Orwell, 1949; Rutherford, 2000). Adding fuel to the fire, the psychoanalyst Bruno Bettelheim publically stated that Skinner’s daughter Debra had become psychotic as a result of being raised in air crib (Rutherford, 2009). Skinner responded to Bettelheim indicating that his daughter was quite successful and seemingly well-adjusted (Rutherford, 2009).

The Cold War
Within five years of the end of World War II, the U.S. Government and its citizens viewed communist countries such as the Soviet Union and China as major threats to America’s security. The depiction of the U.S.S.R. and Communist China as societies of government controlled citizens suggested that these societies engaged in some type of thought programming. This “brainwashing” became a cause for concern after two publicized incidents were shown on American television. In
Soviet-dominated Hungary, Catholic Cardinal Mindszenty was arrested for crimes against the State. In a publicized show trial, there were physical signs that the Cardinal suffered torture as he wearily confessed to his “crimes” (Meerloo, 1951). American POWS from the Korean War made similar false confessions and exhibited a disturbing emotional flatness (Collins, 1988). According to some observers, this televised “success” of Soviet brainwashing suggested to the United States government that there needed to be further research in the area to maintain pace with the Soviets.

The need for an understanding of mind control increased in the early 1960s with the Soviet capture of the U.S. pilot, Francis Gary Powers. While initially claiming to be on a weather forecasting mission, the wreckage of the plane strongly suggested that Powers was spying on the U.S.S.R.—a charge later confirmed. Concerns about mind control either via hypnosis or other methods became particularly prominent when Powers appeared on Soviet television and apologized for America’s treatment of the Soviet Union. (Harbutt, 2002; May, 2008). The confession led many to believe that Powers had been “brainwashed” though a combination of physical deprivation and a primitive application of classical conditioning. By this time, American military personnel such as Powers received specialize training in techniques to resist communist interrogation (Pedlow & Welzenbach, 1988). However, in Powers’ case, the preparatory training appeared to be less than successful.

With the growing concerns about cold war mind control techniques, some psychiatrists were approached by the U. S. Central Intelligence Agency to develop psychological resistance strategies in case of capture (Collins, 1998). While generally associated with psychology, operant and classical conditioning techniques were of interest to some academic psychiatrists. Joseph Wolpe developed systematic desensitization, an application of classical conditioning for treating phobias (Rychlak, 1981). In this procedure, after learning progressive muscle relaxation, patients were gradually exposed, through descriptive imagery, to a progressively threatening hierarchy of anxiety arousing stimuli. Systematic desensitization continues to be recognized as effective in the treatment of phobias. While not always seeming to fully appreciate the underlying conditioning principles, the concept of programming new behavior and emotional associations to previously threatening experiences appeared to influence psychiatrists working on CIA projects (Collins, 1998).

While there was no evidence that Skinner was directly involved in developing brainwashing or anti-brainwashing techniques, the CIA actively funded projects involving distorted applications of classical conditioning. Ewen Cameron, a well-known psychiatrist at McGill University in Canada, received funding from the American CIA to develop and study potential “mind control” techniques (Collins, 1988). Similar to Skinner, Cameron viewed personality as a set of reinforced patterns of behavior. To change these behavioral patterns, Cameron administered multiple electroconvulsive therapy (ECT) treatments and hallucinogenic drugs to uninformed adult psychiatric patients. After being exposed to these techniques to “break” existing personality patterns, Cameron (1956) then applied a technique, “psychic driving,” which entailed playing recorded auditory messages, often taken from taped therapy sessions for hours to patients. In addition to repeatedly hearing the same auditory messages during waking hours, patients’ pillows contained embedded speakers. While there certainly was a strong conditioning element, Cameron, like many psychiatrists of his day, also viewed psychopathology from a psychodynamic perspective. The auditory messages used for counter conditioning often were around sexual themes (e.g., “I am not sexually attracted to my father”). While Cameron died in 1967, the secrecy of this pattern of abuse and its connection to the CIA continued and remained unpublicized until relatively recently. Several survivors of Cameron’s treatment eventually received restitution from the Canadian government (Collins, 1988).
While humanistic psychology and the U.S. Department of Defense might seem to be strange bedfellows, historians have recently become aware that during the Cold War era, Carl Rogers was also on the CIA’s payroll (Demanchick & Kirschenbaum, 2008). Apparently, a colleague employed by the Department of Defense contacted Rogers and asked him to serve as a CIA consultant on a mental health related project. Demanchick and Kirschenbaum (2008) suggest that the government’s motive for Rogers’s involvement was primarily for the benefit of having a well-known psychologist on their payroll. Rogers did receive money for two small grants—one to study biological associations of emotion during psychotherapy and another to fund psychotherapy research with schizophrenia. Rogers had a security clearance and apparently could not discuss all of his activities. During an interview later in life, Rogers reflected upon this involvement with the CIA and indicated that while at that time he was concerned about the Soviet Union posing a threat to the United States, he would no longer be receptive to receiving CIA funds (Demanchick & Kirschenbaum, 2008).

The Changing Roles of Women

While there is some disagreement about the characterization of wartime women taking jobs previously held by men, the immediate post war period’s consumer advertising and articles on family experts certainly glorified the role of housewife (May, 2008). Some historians suggest that the era’s advertising, with women swooning over new refrigerators, was designed to entice working women to re-enter fulltime domestic roles so that returning soldiers would have employment. Soon after the end of World War II, homemaking became “professionalized” (May, 2008). The aforementioned Tupperware containers, with their bright pastel colors were to induce women to leave the factory or office and return to the kitchen. During the 1950s and 1960s, advertisements for psychotropic drugs in medical journals often depicted disheveled housewives leaning tiredly against a sink full of dirty dishes. The medications advertised, some of which were amphetamines, suggest that the goal of psychiatric treatment was to make women into productive homemakers rather than examining underlying causes of their distress.

In the mid to late 1950s, the afore-mentioned Ewen Cameron applied his CIA-funded behavioral techniques to female patients (“patients” was the accepted term at the time) whose chief symptom appeared to be disenchantment with their role as housewives. Cameron’s description of his patient, Flo, is one such example: “...as a wife, Flo left a lot to be desired. She ignored the dirty dishes in the sink, didn’t make the beds...” (Collins, 1998, p. 205). At her first hospital admission, Flo was treated with the hallucinogen, LSD, which apparently was not successful. Cameron discharged Flo from the hospital with a diagnosis of “...severe character neurosis, a very hostile individual” (Collins 1998, p. 205). Two years later, Cameron re-admitted Flo to the psychiatric hospital. At this admission, Cameron applied a sequential protocol in which Flo underwent 15 ECT treatments for depatternning followed by “...32 days of negative driving, 32 days of galvanic stimulation [in which Cameron had a shock applied to her leg with each repetition in an effort to reinforce the driving cue] and 11 days of positive driving... [Within three weeks] Flo ...was very much improved, cheerful, and quite a different person...” (Collins, 1998, p. 206). Characterized by a loosely conceptualized mix of behavioral and psychodynamic concepts, Cameron’s depatternning and repatterning treatments for depressed housewives included Electra complex messages mixed with directions to cheerfully serve husbands and children.

Psychotherapists of this era frequently seemed to ignore growing social discontent experienced by the majority of their clientele—women (Chesler, 2005). While Carl Rogers would no doubt deplore psychic driving, he remained similar to many male therapists of his era in that he was not always sensitive to the social contexts of his female patients’ lives. While working to grasp his clients’
phenomenological experiences, Rogers failed to recognize the “real life” dilemmas that women were experiencing in relation to family and work in the 1950s and 1960s. Probably the best-known depiction of Rogers’ approach to therapy is the famous “Three Approaches to Psychotherapy” video recording (Shostrom, 1965). In the segment with Rogers, Gloria, a recently divorced woman in her 30s, repeatedly asks him for direct advice about how to talk with her young daughter about her post-divorce dating relationships. Rogers persistently yet warmly indicates that he does not have the answer but, instead, is there to help Gloria find her own way through this dilemma:

Gloria …I want to be a good mother so bad, and I feel like I am a good mother, but then there's those little exceptions. Like my guilts with working. I want to work and it's so fun having extra money. I like to work nights. The minute I think I'm not being real good to the children or giving them enough time, then I start feeling guilty again. Then, that's when I—it's uh- what do they call it? (Looks away briefly.) A double bind. That's just what it feels like. I want to do this and it feels right, but after all I'm not being a good mother and I want to be both....

Rogers: Or, I guess I hear it a little differently - that uh- what you want is to seem perfect, but it means it’s ...a matter of great importance to you to be a good mother and you want to seem to be a good mother, even if some of your actual feelings differ from that. (Points to Gloria) Is that catching it or not?

Gloria: Gee, I don't feel like I am saying that. No, that isn't what I feel, really. I want to approve of me always, but my actions won't let me...

Rogers: I’d like to understand it. You sound as though your actions were kind of outside of you. You want to approve of you, but what you do somehow won't let you approve of yourself. (Shostrom, 1965).

From a 21st century perspective, it is clear that Rogers “doesn’t get it.” However, it is not a complete surprise that Rogers cannot accurately reflect Gloria’s feelings. The feminist writer and researcher, Betty Freidan, would describe Gloria’s struggle to articulate her experience as representing the “Problem That Has No Name” (Friedan, 2011). During the late 1950s, Friedan interviewed women in her college graduating class for a project associated with Smith College's 15th reunion. Freidan encountered a number of well-educated women reporting a vague, yet pronounced, sense of malaise:

I’ve tried everything women are supposed to do—hobbies, gardening pickling, canning, being very social with my neighbors, joining committees, running PTA keys. I can do it all, and I like it, but it doesn’t leave you anything to think about—I never had any career ambitions. All I wanted was to get married and have four children. I love the kids and Bob and my home. There’s no problem you can even put a name to. But I’m desperate, I begin to feel I have no personality. I am the server of food and a putter on of pants and a bed maker, somebody who can be called on when you want something. But who am I? (Friedan, 2011; p. 48)

While retaining the supportive and authentic stance of humanistic approach, the 1970s saw the development of distinctly feminist schools of psychotherapy (Enns, 1997). While addressing emotional distress, feminist therapists also saw treatment as a process of empowerment and validation of their clients' experience as women in an often patriarchal culture. As part of treatment, feminist therapists included attention to gender discrimination and challenged traditional sex roles (Engler, 2013).
The Decline of Radical Behaviorism

Kuhn (1975) suggests that paradigm shifts occur when there are a growing number of anomalies that do not fit the prevailing worldview. In personality and psychotherapy, the anomaly reveals a theory’s limits in understanding or changing human behavior.

Chomsky’s (1959) critique of Skinner’s (1957) book, Verbal Behavior, heralded a serious, well-publicized challenge to the limits of radical behaviorism. Chomsky argued that language acquisition was a complex neurodevelopmental process not explainable by reinforcement principles. With this perspective Chomsky helped initiate the cognitive revolution (Miller, 2003). Another key challenge would occur in the early 1960s when Albert Bandura’s work on modeling established that observation of a model alone could lead to changes in behavior (Engler, 2013)—individuals did not need to experience reinforcement directly for behavior change.

However, as Kuhn (1975) predicted, radical behaviorists responded to these challenges by attempting to bend their paradigm rather than abandon it. Cautela (1970, 1971) described thoughts as a form of behavior subject to the operant principles of reinforcement, extinction, and punishment. In this model, thoughts were behaviors that could be reinforced or extinguished by other thoughts. With the shift to internal processes, and the opening of the Skinnerian black box, behavior became linked with cognition. In clinical settings, this led to the development of cognitive-behavioral therapy. Employing the quantitative methods that brought scientific respect to radical behaviorism, cognitive behavioral therapists rapidly established their approach as the evidence-based treatment of choice for conditions such as major depressive disorder (Beck, 1979).

The Decline of Humanistic Psychology

The limits of the non-directive approach became strikingly evident when Rogers applied his model to persons with schizophrenia. During his final academic appointment at the University Wisconsin Medical School, Rogers and his colleagues (Rogers, Gendlin, Kiesler, & Truax, 1967) carried out a large federally-funded grant funded project studying relationship-oriented therapy with clients experiencing serious symptoms. As might be expected, client-centered therapy was not as effective in addressing symptoms of people with psychosis as it had been in addressing life adjustment issues with undergraduates at the University of Chicago (Feinsilvers & Gunderson, 1971). Informal observers indicated that even Rogers stopped being quite so nondirective in working with this population. Rogers left his final formal academic setting with a good deal of frustration about university politics and about an environment that he viewed as unsupportive of students (Rogers & Russell, 2002).

By the late 1960s, there was conflict within humanistic psychology (Grogan, 2013). Rogers and Abraham Maslow had become status quo humanists with their research and scholarship aligned with established academic institutions. However, a new cadre of humanists became very visible and emphasized the experiential aspect but with less attention to rigorous humanistic scholarship conducted by scholars such as Joseph Rychlak. These newer humanistic psychotherapists touted the use of hallucinogenic drugs as well as marathon, emotionally intense encounter groups to help their clients become more authentic (Grogan, 2013). Unfortunately, this small group of self-identified humanists received a good deal of attention in the popular press (Elkins, 2008). A humanistically-identified approach that shocked much of the general public was Paul Bindrim’s nude marathon encounter therapy. Based upon a view that clothing formed an obstacle to genuine “authenticity” (Nicholson, 2007, p. 344), Bindrim believed that physical nudity was a rapid route to psychological transparency. He “equated intensity with insight” (Nicholson, 2007, p. 346) and received considerable publicity in the process. Bindrim’s therapy drew considerable public
attention when *Life* magazine did a story about it—complete with photographs. Unfortunately the empirical psychotherapy research of humanists such as Carl Rogers was overshadowed by figures such as Bindrim who pushed humanistic psychology into being caricatured as a “touchy feely’ movement (Elkins, 2008, p. 272).

**Conclusion: What was Left Behind**

Personality psychology began with a focus on character; a list of virtues that all should strive to emulate. However, around 1940, the study of personality began to shift from a universal model of a socially desirable person to an examination of individual differences. To account for individual differences, it was necessary to be able to at least, hypothesize about the reasons for human psychological variability. These explanations for differences in behavior, values, and motivation required more complex theories than the moral uniformity of the character perspective. During a 30 year period in the middle of the 20th century, as the character emphasis waned, radical behaviorists and Rogerian humanists joined their psychodynamic partners as pioneers of contemporary personality theory.

Both Skinner and Rogers have left lasting contributions to psychotherapy and behavior change. Reinforcement-based behavior programs are widely used in school settings as well as in teaching skills to persons with developmental disabilities. Many graduate programs offer degrees and certification in applied behavioral analysis, and the job title, applied behavioral analyst, growing demand—particularly with the increased identification of people with Autism Spectrum Disorders. While no longer considered sufficient for behavior or personality change, Rogers’s therapeutic conditions are the foundation of all effective psychotherapies. For example, a therapeutic climate of warmth, genuineness and unconditional positive regard is a core component of motivational interviewing approaches treating persons with substance abuse problems (Miller, 2015). Even though our current social climate is much different than the 1950s and 1960s, these personality theorists have left their mark on the study of personality as well as on organizational, clinical and counseling psychology.

**Vignettes**

**1. The Fall and Rise of Character**

Personality as a set of unique individual differences is a relatively recent view of human beings—dating to approximately 1940 (Nicholson, 2003). Prior to that time, personality was the study and development of character, a set of universally desirable virtues. Character set a standard that was less interested in differences between people than as a goal for all to attain.

**Character Development**

In 1909, the Character Development League of the United States published a guide for schoolchildren, grades 1-8. The book, *Character lessons in American biography* (White, 1909), featured 31 character virtues that The Character Development League believed should be inculcated in young people. White and his colleagues believed that right living could be best taught by imitating inspiring individuals. Each virtue is described in depth and illustrated by biographical examples of virtuous (and occasionally, to make a point, non-virtuous) historical and literary figures. The League had a developmental orientation—the introduction of specific character virtues should occur in specific grades. So, for example, in grade one key virtues were obedience, helpfulness, and kindness; eighth grade instruction focused on purity and imagination. There are several hundred biographical illustrations. As an example of the virtue of perseverance, White describes Charles Darwin’s study of earthworms. Darwin had to wait 39 years to determine worms’
impact on soil. Union civil war General Sherman illustrates the ability to instill obedience the troops under his command. According to White (1909), Sherman’s men served with “a sense of pleasure.”

**Character versus Personality**

As is evident from these examples, character has a moral connotation. In the preface to White’s (1909) book, this point is underscored by the words of Abraham Lincoln: “The aim of moral instruction is to form character; character is the unconscious obedience to conscience” (Lincoln, as cited in White, 1909, p. ii), which sets the stage for the lessons that follow.

Personality, by contrast, examines how and why individuals differ. While values do periodically creep in, personality research generally attempts to describe people with moral neutrality. As an example, Costa and McRae’s (1992) “Big Five” personality traits—Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism—are bipolar continuous dimensions along which individuals can be characterized as having more or less of a particular feature. However, while there are certainly implications that certain traits may be more highly valued than others such as low Neuroticism and high Conscientiousness, any blind emphasis on values is offset by examining the situation. For example, in their personality text, Carver and Scheirer (2012) review the relative benefits and possible limitations of “Openness to Experience” by noting that high scorers are more accepting of cultural diversity but also more prone to be arrested. When adding Mischel’s Cognitive-Affective Processing system and its situational implications (Carver & Scheirer, 2012), scoring high or low on a Big Five dimension does not carry the same moral significance that a low level of Honesty would among character proponents. Additionally, in the character model, while certain situations may be more challenging, virtues are relatively unchanging personal characteristics for which we strive. The trait by situation relativism is not part of the character virtues model.

**Virtues and Positive Psychology**

Within the past 15 years, however, character has returned through the door of positive psychology. While the language of contemporary virtues is different than that of the Character Development League in the early 1900s, there are some similarities. Peterson and Seligman’s (2004) framework features six overarching categories of strengths—Wisdom and Knowledge, Courage, Humanity, Justice, Temperance, and Transcendence—under which are a total of 27 virtues. In a similar vein as White’s (1909) use of figures such as General Sherman to illustrate character virtues, Peterson and Seligman (2004) also rely on descriptions of exemplary individuals. For example, one Temperance virtue is self-control (Peterson & Seligman, 2004). These authors present Arnold Schwarzenegger as an example of someone with strong self-control. While perhaps not being an example of self-control in all domains of life, Schwarzenegger’s success in body building occurred because of his repeated and ongoing goal setting, honest appraisal of weaknesses, and development of concrete plans for overcoming deficits. As an aspect of Courage, Bravery [Valor] refers to voluntary actions, including judgments of personal consequences such as risks of physical harm or loss. A group of World War II Army chaplains who readily gave up their lifejackets to soldiers aboard the sinking USS Dorchester illustrate this virtue (Peterson & Seligman, 2004).

**Activities and Questions for Students**

1. Obtain an excerpt one of the manuals from the late 1800s or early 1900s that describes character (e.g., White, 1909, available at [https://books.google.com/books?hl=en&lr=&id=UGQAAAAAMAAJ&oi=fnd&pg=PA2&dq=White+1909+character+development+league&ots=a_xgRIKgljl&sig=LH--](https://books.google.com/books?hl=en&lr=&id=UGQAAAAAMAAJ&oi=fnd&pg=PA2&dq=White+1909+character+development+league&ots=a_xgRIKgljl&sig=LH--))
ru6z5D6oxnBPYmqd3dGbpxk#v=onepage&q=White%201909%20character%20development%20league&f=false). Would these character virtues still be viewed as desirable today?  

2. a. To take a contemporary character assessment, go to http://www.viacharacter.org/www  
   b. To take a contemporary “personality” assessment, go to: http://www.16personalities.com/free-personality-test  
   c. Is there any overlap between results of these tests?  
   d. What are the differences in the test results?  
   e. Which of these tests do you think most accurately describes you? 

3. Find a description of someone who was noted for their “strength of character.” (e.g., Abraham Lincoln, Susan B. Anthony, etc.). Make a list of the traits or virtues used to describe the person you selected  

4. Locate a written description or watch a video clip of a contemporary “social media” celebrity (e.g., Kim Kardashian, Kanye West, etc.) How would you describe this person? Would the historical figure you selected be best described as a “personality” or a person of “character”? 

2. Skinner’s Radical Behaviorism in an Ethical Context

Case Example

George is a 20-year-old male diagnosed with autism at age eight. George’s language is minimally developed and recent intellectual testing showed a WAIS-III IQ of 55. George attends a sheltered workshop for approximately six hours per day where his main activity is to package plastic knives forks and spoons into packets. In the past year, George has become increasingly disruptive at the workshop. Initially, George broke the plastic utensils and threw them at the wall; these episodes increased from one event every two weeks to two episodes per week. However, more concerning is that George engages in repetitive head banging; his forehead is badly bruised, and his mother fears that George is incurring traumatic brain injury, further diminishing his cognitive functioning. Verbal direction is ineffective in reducing head banging, and George requires physical restraint involving three staff simultaneously. In addition, George bites and tears at the skin on his hands and arms, requiring stitches on at least three occasions. There no clear precipitant for these episodes, but they are becoming more frequent and of greater duration. The workshop staff initially used timeout with George, but it was ineffective. Additionally, George received small snacks for every 20-minute period without self-harm. George’s mother and workshop staff are concerned about the physical harm that he is inflicting upon himself. Because the behavior is disruptive, the workshop staff raised the option of removing George from their setting. A local psychologist is consulted and, after observing George, raises the possibility of using painful but non-physically harmful electric shock to reduce the frequency of George’s self-harming behavior and describes several case reports of successful applications of positive punishment. The final decision will be made by George’s mother and the workshop director. The psychologist discusses the case with a colleague who argues that use of shock in this context is unethical.

Operant Learning and Punishment

Positive punishment, applying an aversive stimulus to reduce the frequency of a given behavior, while effective, may have limitations (Myers & DeWall, 2015). One problem with implementing punishment is a potential time delay between the behavior and the punishing stimulus (e.g., “Wait until your father gets home.”). Another limitation, particularly pertinent to persons with cognitive impairment, is that punishment does not specify desired behavior. Finally, some investigators associate punishment with longer-term and unwanted emotional and behavioral changes such as aggression (Myers & DeWall, 2015).
**Ethics in Psychology**

Psychological research, education, and practice all involve ethical dimensions. Discussions of classical studies such as Watson’s Little Albert study, in which a phobia was experimentally established in a young child, or Milgram’s obedience study, in which naïve participants were instructed to administer what they believed to be painful electric shock to a confederate, often include questions about whether the researcher’s conduct was “ethical” (Myers & DeWall, 2015). In these discussions, “ethical” is typically presented as a unitary concept—based on what is considered to be morally right or wrong. While most students readily conclude that Milgram’s and Watson’s studies were “unethical,” describing an underlying reason for an action being ethical or unethical is more challenging.

A personal note may help clarify these issues. As a clinician, I learned in my graduate ethics classes that having sexual relationships with clients was unethical. However, while I and my classmates viscerally recognized that these relationships were not good for clients, there was minimal discussion about the underlying reasons that therapist-client sex was wrong—it just was. It was not until 15 years later, while taking a medical ethics course taught by a philosopher-ethicist that I truly understood the rationale for the prohibition.

**Video about Cases Like George**

The video clip below describes a recent news story on the use of aversive procedures with persons with autism.


**Ethical Theory**

Skinner’s operant model has likely triggered more ethical discussion than any other personality theory. Using aversive procedures to reduce the frequency of self-harming actions, while not frequent, raises ethical issues about applied behaviorism (Breger, 1965). Conceptually similar to the various personality theories or “schools” of psychotherapy, there are multiple ethical theories that can be applied to George’s situation. In analyzing ethical dilemmas, the American Psychological Association’s Ethical Principles (American Psychological Association, 2002) are frequently invoked. APA’s ethical principles are often taught as a list of actions without explanation (e.g., Standard 3.08 “Psychologists do not exploit persons over whom they have supervisory, evaluative or other authority such as clients/patients, students, supervisees, research participants and employees” (American Psychological Association, 2002).

In the APA ethics code, there is a section immediately after the Preamble titled, “General Principles,” which describes six philosophical tenets underlying the specific standards. These six tenets are similar to the prevailing ethical framework in medical ethics termed “Principlism” (Beauchamp & Childress, 2013). These principles are: Autonomy—directing one’s own life without interference; Beneficence—acting in the best interests of another person; Nonmaleficence—not knowingly inflicting harm; and Justice—treating people fairly. APA’s code adds Integrity—being honest; Fidelity and Responsibility—upholding responsibilities, and Respect for Rights and Dignity—similar to Beauchamp and Childress’ (2013) Autonomy but also including respect for diversity.

Autonomy and Respect for Rights and Dignity are particularly relevant when considering human applications of operant learning. Behavioral reinforcement schedules, as well as positive and negative punishment are often employed with children and persons with cognitive limitations. To
make an autonomous choice, one has to be able to comprehend and weigh relevant information. In George’s case, because of his cognitive limitations, genuine autonomy may be compromised. “APA’s general ethical code recognizes that “…that special safeguards may be necessary to protect the rights and welfare of persons or communities whose vulnerabilities impair autonomous decision making” (American Psychological Association, 2002)

While a principle-based system provides a meaningful set of dimensions for addressing ethical dilemmas arising in psychological practice and research, its use for decision-making is sometimes limited. In this ethical system, all of the principles have equal weight—prioritization of the principles is not part of the model. In reality, values probably play significant roles in prioritizing principles; in the United States, autonomy often takes precedence (Searight & Perkins, 2012).

**Virtue-Based Ethics**
The “virtues” framework has been discussed previously. In keeping with the character emphasis, virtues specify the qualities of a “morally good” professional such as a psychologist. Probably the best known virtue-based professional code is the Hippocratic Oath, featuring guidance such as: “I will comport myself and use my knowledge in a godly manner” (Pellegrino, 2002). According to Pellegrino (2002), important virtues for health care providers include: trustworthiness, compassion, prudence, fidelity to trust, honesty, and courage (Pellegrino, 2002). Operating from this ethical code might require the psychologist involved in George’s case to consider what a respected colleague would do in this situation.

**Kant’s Deontology**
Immanuel Kant’s Deontological ethics, focuses on the inherent “rightness” or ‘wrongness” of specific actions regardless of their consequences (Pence, 2004). Kant does not allow for ambiguity—he argues that there are universal principles based in obligation. Kant would likely say that an act, such as use of electric shock, is inherently wrong since it involves the deliberate induction of pain in another individual. A related Kantian principle is that human beings should never be used as a means to an end. Every individual life has inherent value (Pence, 2004). Thus, research involving deception or physical or psychological distress should not be conducted because human participants are being “used” for hypothesis testing or the generation of knowledge. In George’s case, a Kantian would argue that despite the possibility of a beneficial outcome, the use of aversive techniques that include physical pain is categorically wrong.

**Utilitarianism**
Utilitarians such as Jeremy Bentham believe that a morally correct act produces the greatest good for the greatest number of people (Pence, 2004). John Stewart Mill articulated the closely related principle of consequentialism; outcomes are more important than motives or intentions (Pence, 2004). From a utilitarian perspective, the outcome of the electric shock intervention is the key element. If the shock results in a reduction in self-harm as well as the need for fewer workshop staff to monitor George, everyone benefits. In addition to preventing him from further harming himself, the pain and indignity inflicted on George is outweighed by benefit to others; freed from the task of protecting George, staff can then better attend to the needs of other clients.

**Questions for Students**
1. Consider George’s situation from the perspective of deontology. Are certain actions such as using aversive procedures unequivocally wrong regardless of their intended outcome? How would a utilitarian view the use of shock to reduce problem behavior? From a virtues perspective, what would a highly virtuous psychologist decide in George’s case?
In evaluating aversive procedures from the perspective of principlism, which principles would support the use of aversive conditioning? Which principles would call into question the morality of using aversive procedures?

In the United States, autonomy is often ranked as the most important principle in medicine. For example, the importance of autonomy is reflected in the growing number of states permitting physician-assisted suicide. Skinner would argue that our belief in autonomy is an illusion that makes us feel better. He would argue that we are all responding to environmental contingencies but that we prefer to see our actions as under our own control. Are there examples of situations in which you would agree with Skinner? Do Westerners place excessive emphasis on autonomy?

3. Women and Psychotherapy in the 1950s and 1960s
The “Gloria” films (Three Approaches to Psychotherapy, Shostrom, 1965) have been a staple of many personality and psychotherapy courses. Gloria, recently divorced with a daughter, is filmed discussing current life issues with three different therapists. In addition to Rogers, she has a session with the rational emotive therapist, Albert Ellis, and the gestalt therapist, Frederick Perls. The film is typically available through many university libraries and parts of it are available readily online.

It is useful to think about this film in its historical context—the Three Therapies was made in the 1960s, an era in which humanistic psychology was becoming more popular. Humanistic psychology’s emphasis on self-development and genuineness was consistent with the zeitgeist of the time. Questioning the status quo, including the traditional role of women, was increasingly common, with 1960s feminists initially focusing on gender inequality in employment (May, 2008). During this time, divorce rates continue to rise. While some theorists suggest that increased divorce rates reflected the increased number of women in the workforce and the lower likelihood that financial dependency would keep women in bad marriages, others point to the increased expectations about marriage as a source of emotional closeness and meaning (May, 2008).

Women and Mental Health Treatment in the 1940s and 1950s
Women’s mental health care during the 1950s has been harshly criticized for reinforcing traditional gender roles. In her classic, Women and madness, Phyllis Chesler (2005), argued that while these stifling roles contributed to women’s mental illness, this social confinement never entered the psychotherapeutic discourse. A major contributing factor to this conspiracy of silence was that men controlled both the access to as well as the provision of mental health care. Carol Warren (1987) studied psychiatric records from California hospitals from the 1950s and noted that many women with symptoms of mental illness were committed to psychiatric hospitals by their husbands. Husbands also had to approve their wives’ electroconvulsive therapy (ECT). Often the memories of marital conflicts contributing to the hospitalization vanished through ECT’s side effects (which are now less common with current applications of ECT), potentially another reason for some husbands’ support of the treatment (Warren, 1987).

In Warren’s (1987) study, a chief complaint leading to hospitalization was the husband’s concern that their wives were not keeping up with the housework. Reviews of ads in psychiatric journals, such as the American Journal of Psychiatry, during this era often implicitly suggest that not completing housework was a psychiatric symptom, but one that medication could effectively treat. Women’s out-of-control outbursts because of the children’s behavior could be treated with benzodiazepines. Dirty dishes piled in the sink in a disorganized kitchen were the backgrounds for pharmaceutical ads suggesting that successful treatment with amphetamines could result in a transformation from being overwhelmed to joyfully washing and cleaning.
Gender Bias in Psychotherapy

Chesler (2005) argued that the male psychotherapist-female client pairing reenacted an iatrogenic dynamic. Male therapists, often automatically, reenact the father-daughter relationship with female clients. Psychologically distressed women were harmed by the male therapist’s guidance, which only served to underscore women’s dependence on men. It is noteworthy that in the Three approaches to psychotherapy (Shostrom, 1965) film, Gloria repeatedly asks Rogers for advice about her daughter; Rogers in true client-centered fashion reflects Gloria’s desire for an answer without giving her one. However, the father-daughter dynamic is explicit by the end of the session: Gloria: “Gee, I’d like you for my father…” Rogers: “You look to me like a pretty nice daughter” (Shostrom, 1965). Exchanges like these only serve as “…reenactments of a little girl’s relation to her father in a patriarchal society; both control and oppress women similarly…” (Chesler, 2005; p. 167). These psychotherapeutic dynamics, including the denial of social inequality, led Chesler (1985) to conclude that men should not provide psychotherapy to women.

In the early 1970s, Broverman (1972) asked 79 male and female mental health professionals to complete an adjective survey in which they were asked to choose terms to describe a mature healthy woman, mature healthy man, and mature healthy adult whose gender remained unspecified. The ratings for the man and person of unspecified gender were essentially the same. When comparing ratings of healthy males and healthy females, men were rated higher on confidence and independence while women were received high ratings on more warm, expressive characteristics including concern and kindness for others. Women were also rated as being more emotional and more excitable in response to crises. Importantly, the results concluded that a healthy mature woman was the equivalent of an unhealthy mature adult.

The impact of gender on psychotherapeutic outcomes was repeatedly studied in the 1980s and 1990s. Jones and Zoppel (1982) also found evidence that male and female therapists viewed their clients differently with male therapists viewing female clients more negatively. Compared with male therapists, female therapists rated themselves as more effective with both male and female clients. After therapy’s completion, both female and male clients rated the therapeutic relationship with a female therapist more positively. However, in terms of global outcome there were no differences in between the two therapist genders. Research, since that time, while not clearly laying the question to rest, does indicate that therapist experience is a more important factor than gender (Beutler, Machado, & Neufeldt, 1994).

Class Activities

American Life and Mental Health in the 1950s and 1960s
1. Go to http://vintage-ads.livejournal.com/88173.html. Consider the messages about sex roles being communicated through the pharmaceutical ads from the 1950s and 1960s. What is the current status of many of the medications advertised in these ads?

2. View some of the classic family-oriented television shows of the era (e.g., Father Knows Best; Leave it to Beaver—these are often shown on “classic” tv cable stations or on youtube)
   a. What picture do they portray of the roles of adult men and women?
   b. What picture do they present regarding consumerism and technology?

3. View the “Gloria” sessions (Shostrom’s Three Approaches to Psychotherapy). These may be available through your university library but are also available (in segments) on youtube.
   a. How do the three therapists (Ellis, Rogers, Perls) approach Gloria’s issues?
   b. Describe each of the therapist’s assumptions about human behavior, personality, and causes
of psychological distress?
  c. What is the implicit message about gender roles that they convey to Gloria?

Gender Stereotypes
4. Have a small group of students do a variation on the Broverman (1972) study. However, do not provide any background information. Ask students to make a list of adjectives describing a psychologically healthy, mature person who is male and a separate list for a psychologically healthy and mature female.
   a. Are there differences in your descriptions?
   b. Do you see a similar pattern as obtained by Broverman?

References


Historical Perspectives Across Time

Ancient perspectives on mental illness

The first known records of people with mental illnesses came with the discovery of a document from Egypt called the Ebers papyrus (Menninger, Mayman, & Pruyser, 1963). This document was dated to circa 3000 B.C.E. and contains a description of an ailment plaguing an Egyptian prince that is very similar to the modern concept of dementia (Weckowicz & Liebel-Weckowicz, 1990). The Egyptians were familiar with other mental illnesses as well, many of which they considered physical ailments. These were medically treated by a special group of priests (Millon, 2004). Other disorders were conceptualized as different forms of possession, a belief that many other cultures and groups of people shared with the ancient Egyptians (Weckowicz & Liebel-Weckowicz, 1990). In India, for example, the Ayur-Veda from circa 1400 B.C.E. classified mental illnesses into seven categories based on different types of demonic possession (Menninger et al., 1963).

Early Greek thought attributed mental illness to the will of the gods, while later philosophers and great thinkers approached mental illness from both spiritual and physical perspectives (Simon & Weiner, 1966). Plato proposed three forms of soul: the spirited soul, the desiring soul, and the rational soul. Plato believed that deviance resulted from the rational soul being unable to control the spirited soul and the desiring soul, an idea later utilized by Freud in his concepts of the id, ego, and superego (Leahy, 2013). Plato also had a theory for mental illnesses (or as he called it, “madness”). Plato proposed that there were four types of madness inspired by divine beings (prophetic madness, ritual madness, poetic madness, and erotic madness), as well as madness caused by disease (Menninger et al., 1963; Nietzsche, 1967; Weckowicz & Liebel-Weckowicz, 1990).

Though the influence of the divine played a large role in many ancient explanations of mental illnesses, not all subscribed to this thought. Hippocrates, a physician living in the fifth century B.C.E., emphasized empiricism and observation when studying medical phenomena (Millon, 2004). Hippocrates was one of the first individuals to view mental illnesses in the same way that he viewed physical illness; in other words, mental illnesses were just another type of physical disease. For Hippocrates, health depended on the balance of four humors within the body (blood, phlegm,
black bile, and yellow bile), and an imbalance among the humors caused physical or mental ailments (Millon, 2004; Weckowicz & Liebel-Weckowicz, 1990). Hippocrates also proposed different methods to treat diseases resulting from humoral imbalance, including a proper diet, adequate sleep, and the use of music (Millon, 2004).

**Medieval times through the Renaissance**

Physical and medical explanations of mental illnesses declined during the Middle Ages (circa 500 C.E to 1500 C.E.) in the Western world, replaced by a resurgence of spiritual attributions through the expansion of the influence of Christianity. Empiricism and scientific thought were rejected, and issues of faith and dedication to Christian teachings became common explanations for life circumstances (Weckowicz & Liebel-Weckowicz, 1990). Mental illness once again was attributed to spiritual causes; however, it was now believed to be caused by some moral offense committed by the individual rather than caused directly by a divine being. Mental illness could be the result of various transgressions, such as sin or lack of faith, or it could be the result of demonic possession (Neugebauer, 1979). Sometimes mental illness was seen as a punishment for transgressions by a just God; therefore, people with mental illness were blamed for their conditions. Corruption by Satan became a common explanation for psychological abnormalities, and the belief that Satan took control over people gave way to the idea that people with mental illnesses willingly gave themselves up to the Devil (Millon, 2004). Men and more commonly women who exhibited strange behavior were sometimes accused of sorcery and witchcraft, which became another accepted explanation of the behaviors seen in mental illness. Witches were thought to be conspirers against Christianity, and the resulting witch hunts included widespread persecution of those who exhibited strange or bizarre behavior, including some symptoms associated with mental illnesses (Millon, 2004; Weckowicz & Liebel-Weckowicz, 1990). This view became so popular that in 1233 Pope Gregory IX began the Inquisition in order to rid the world of those who were believed to be serving the Devil (Millon, 2004).

While the scientific study of medicine declined in the Western world at this time, it was preserved and transformed in the Arabic world (circa 700 C.E. to 1200 C.E.). The works of Galen, an influential Roman physician who built upon the work of Hippocrates, and others were translated into Arabic or Syriac and thus distributed. As Islam grew in numbers and influence, there was a concerted effort on the part of scholars and rulers to construct an Islamic culture. The Middle East at this time was an interesting blend of a variety of religious traditions, including Arabs, Jews, and Christians. The new Islamic world was tolerant of this diversity and incorporated what these different groups had to offer. In this way, classical works of the West became a part of the nascent Islamic culture. However, the new Islamic scholars did not simply copy the work of previous scholars but extended this scholarship and made it their own (Conrad et al., 1995).

Beginning in the sixteenth century, spiritual explanations and religious fervor began to fade in Europe in favor of a resurgence in intellectual thought and questioning, partially fueled by a reintroduction of classic texts preserved in the Middle East (Millon, 2004; Weckowicz & Liebel-Weckowicz, 1990). Though the exorcisms, torture, and maltreatment of the Dark Ages had fallen away, people with mental illnesses continued to have poor living conditions during the Renaissance. Many were forced out of their homes and towns and reduced to become beggars (Weckowicz & Liebel-Weckowicz, 1990). Others were isolated in small rooms or chained to walls due to the fear that they were dangerous. Eventually these individuals began to be kept together in hospitals and asylums, isolated from the general public. Conditions within the asylums were brutal, and the individuals housed within were treated like wild animals, even to the point of keeping them in cages. Patients were often displayed to the general public for a fee, operating like
zoos serving entertainment to the public. The asylums in Europe and North America during the 1700s were overrun with corruption in leadership, and most lacked basic medical care (Millon, 2004).

Amid the horrors of institutionalization in asylums, some individuals chose to speak out against the mistreatment and abuse of the mentally ill (Leahy, 2013; Mack, Forman, Brown, & Frances, 1994; Menninger et al., 1963; Millon, 2004). Philippe Pinel (b. 1745 – d. 1826) emerged as a champion of this viewpoint through the zeitgeist of the French Revolution. The French Revolution marked a major political shift in Europe as a large lower class rebelled against the supposedly inborn authority of the noble class. In the view of the French revolutionaries, people were believed to be born equal, a radically different notion from the structure of society up to that point; rather, they believed that society and experience shaped the differences seen among the classes. Mental health was no different; psychiatrists in this movement viewed mental disorders as the product of societal imbalances of power. Pinel believed that the lack of recovery for patients in asylums was directly due to the inhumane treatment they received. Pinel believed that if given freedom and kindness, people with mental illnesses could progress through treatment and make steps toward recovery. After the Revolution, Pinel was appointed to be the chief psychiatrist in France because he was sympathetic to the cause during the Revolution. Pinel was able to test his ideas at the Bicêtre Hospital, where he ordered patients to be freed from their chains and given the freedom to roam throughout the hospital. After finding great success with his humane treatments, Pinel began to train other hospital workers in his Moral Treatment (Leahy, 2013; Millon, 2004).

Jean-Etienne-Dominique Esquirol advanced Pinel’s Moral Treatment throughout France. A devout follower of Pinel, Esquirol worked to establish widespread acceptance of humane treatment throughout asylums in France (Leahy, 2013). Esquirol also proposed the idea of environmental factors influencing mental illness. For Esquirol, withdrawal from close social contacts could be beneficial, as he believed that dysfunctional relationships exacerbated many mental illnesses (Millon, 2004).

The concept of Moral Treatment in America was promoted by Dorothea Dix, who illuminated the horrific treatment of people with mental illnesses in prisons and asylums in the United States. Dix believed that the general public had an inherent responsibility for the humane care and concern for people with mental illnesses, and she worked to establish systems of humane state-supported hospitals throughout the U.S. (Millon, 2004).

Emil Kraepelin v. Sigmund Freud

Emil Krapelin (b. 1856 – d. 1926) was an integral character in the development of the modern conceptualization of mental illness and psychopathology. Kraepelin subscribed highly to a physiological explanation for mental illness because he was trained as a neurologist under Griesinger, whose other students included Broca and Wernicke (Menninger et al., 1963). Kraepelin also believed in the systematic observation and study of behavior because of his time studying with Wundt. Kraepelin took his first job as director of a hospital in Dorpat (in modern day Estonia). Being German, he did not speak the same language as most of his patients and had to rely on his observations of their behavior and laboratory tests as much as self-reported symptoms. Kraepelin kept a specific and detailed system of data collection and record keeping through the use of counting cards (Zalkarten), which he used to track information about the details of each patient, including factors such as diagnosis, symptoms, course, demographics, and treatment (Berrios & Hauser, 1988; Weber & Engstrom, 1997). Kraepelin then sorted his cards into groups as a means of identifying “kinds” of patients.
The major contribution of Kraepelin’s work was his classification of his patients’ psychopathological symptoms. His “classifications” were literally the table of contents in his popular textbooks on psychopathology. He viewed people with mental illnesses as occupying distinct categories with different symptoms, etiology, prognosis, and treatment (Berrios & Hauser, 1988; Havens, 1965; Menninger et al., 1963). Among his most notable contributions were the concepts of manic-depression and dementia praecox (Havens, 1965; Menninger et al., 1963; Leahy, 2013; Millon, 2004). Kraepelin’s hospital in Dorpat had the good fortune of being near a train station, and so it was easy for patients to return to the hospital for follow-up visits, leading to a longitudinal perspective that was heretofore unprecedented in the study of people with psychopathology. Kraepelin’s observations on the mood cycles of mania and depression—which were already well described syndromes—led to the conclusion that they sometimes occurred in the same patient across time. He termed this category manic-depressive psychosis, a concept that paved the way for the modern concept of bipolar mood disorders (Havens, 1965; Millon, 2004). Kraepelin also popularized the concept of dementia praecox, the deterioration of mental processes in individuals too young to be suffering from traditional dementia. The concept of dementia praecox later morphed into what is known now as schizophrenia (Havens, 1965; Leahy, 2013; Millon, 2004; Weckowicz & Liebel-Weckowicz, 1990).

Another influential thinker at this time was Sigmund Freud (b. 1856 – d. 1939). Due to the current social climate and the nature of his outpatient work, Freud’s patients were mostly women with neurotic symptoms. Neurotic disorders were believed to be linked to sexual fantasies and trauma, thus providing for purely mental (rather than physical) explanations for neurotic behavior. One of Freud’s most influential and famous patients was a woman given the pseudonym Anna O., who suffered from various strange neurological symptoms (including temporary paralysis of specific body parts and temporary visual disturbances). Josef Breuer, a colleague of Freud’s and famous Genevan neurologist, assisted in the treatment of Anna O. through hypnosis (Freud & Breuer, 1895/1966). Breuer observed the temporary remission of Anna O.’s symptoms following hypnotic sessions where she revealed deeply kept secrets and fantasies. His observations from Anna O. were to become the basis of Freud’s psychoanalytic theory of psychopathology.

**The birth of the first DSM**

There was no standard classification system for mental illnesses during the time of the asylums and hospitals. Psychiatrists working in asylums and hospitals typically had a general way of classifying what they were seeing in their patients, with broad categories like “psychotic” or “emotionally disturbed,” but these systems were not standardized and often differed from person to person (Millon, 2004). While there was a desire for a small, limited classification system in order to obtain statistics about what psychiatrists were seeing, the idea of creating a comprehensive classification system was not viewed favorably because many psychiatrists held the underlying assumption that every person with mental illness was unique and so there was no value in grouping them with other patients (Grob, 1991).

The first major classification system in the United States had its origins in an international group of psychiatrists called the International Congress of Alienists. In America, the Association of Medical Superintendents of American Institutions for the Insane (the precursor to the American Psychiatric Association) unofficially used this system, but later officially began to use a British classification system that was very similar. The British system was broader than modern classification systems and had only eight categories (Grob, 1991; Menninger et al., 1963).

Though the British classification system had been adopted as standard, it was not put into widespread use. Different groups, areas, and individuals still used various other classification systems.
systems. Without a standardized and nationally accepted system, it became very difficult to gather data for statistical purposes (Grob, 1991). In 1908, the American Medico-Psychological Association (the new name for the Association of Medical Superintendents of American Institutions for the Insane) created the Committee on Nomenclature of Diseases to combat this problem. Partnering with the U.S. Bureau of the Census, the American Medico-Psychological Association created a new classification system called the *Statistical Manual for the Use of Institutions of the Insane* (American Medico-Psychological Association, 1918). Like the general state of psychiatry at the time, this system was based on practicality for use in hospitals rather than on creating a comprehensive descriptive system of mental disorders (Grob, 1991).

Several influential voices arose during this time. For example, Adolf Meyer (b. 1866 – d. 1950), a German psychiatrist, helped to import the ideas of both Kraepelin and Freud to the United States (Mack et al., 1994; Menninger et al., 1963). While generally agreeing that there was a biological basis for mental illnesses, as Kraepelin argued, Meyer also incorporated environmental factors into his concept of mental disorders, believing that outside environmental and social situations could impact an individual’s psychological functioning, as Freud argued (Mack et al., 1994; Sabshin, 1990).

The next major step towards the DSM occurred during World War II. At this time, psychiatry gained ground as an important medical practice in the armed forces. Military men from the front lines were quickly treated and returned to battle with great success (Grob, 1991). The success of psychiatrists within the military helped legitimize psychiatry as a respectable and important profession with the general public, and psychiatrists gained interest in conditions beyond the severe mental illnesses seen in hospitals. In addition, the impact of war on the mental health of the soldiers in the military helped solidify the importance of environmental factors for mental health. The success of treating and returning soldiers to battle showed that mental illnesses are not always stable and permanent and that mental illnesses can improve and patients could recover (Grob, 1991).

During the war, the branches of the military developed their own classification systems to better fit the problems occurring on the battlefield. The War Department Technical Bulletin, Medical 203, the system used by the army, included both disorders and reactions (an allusion to the importance of environmental factors; Houts, 2000). The success of treatment in the army prompted a more widespread acceptance of psychiatry and psychotherapy with the general public in the United States. The old classification system became outdated because it focused only on inpatient problems. As a result, there was a push for the American Psychiatric Association to develop a new classification system that better fit the ideology and conceptualization of the time (Grob, 1991; Raines, 1952). This new system became the first edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM; American Psychiatric Association, 1952).

**Progression of the DSM editions**

The second edition of the DSM (DSM-II; American Psychiatric Association, 1968) was very similar to the first, although it expanded to include childhood mental disorders for the first time. During the 1960s and 1970s, there was growing discontent with the discipline of psychiatry, termed the “anti-psychiatry” movement (Szasz, 1961). One source of discontent was mounting evidence that psychiatric diagnosis was unreliable. The vague paragraph-style definitions of the DSM-I and DSM-II were open to the interpretation of psychiatrists, leading to wide variability in diagnostic practice. A patient presenting to three different psychiatrists could easily come away with three entirely different diagnoses. A joint US/UK diagnostic project found that use of the diagnoses of schizophrenia, manic-depressive illness, and personality disorders were substantially different in
the United States and Great Britain (Kendell et al., 1971). Americans tended to label everything as schizophrenia, whereas psychiatrists in the United Kingdom were more nuanced in their diagnostic practice.

In addition to concern about reliability, the public had growing concerns about the reach of psychiatric practice. Against the backdrop of the anti-establishment movement in the US in the 1960s and 1970s, psychiatric diagnosis was viewed as a mechanism of social power and oppression of the disenfranchised (Goffman, 1959, 1963; Scheff, 1966, 1975). In 1973, Rosenhan published an influential paper describing a study where fake patients sought admission to psychiatric hospitals by reporting hearing a voice that said “empty” or “thud.” The patients were completely healthy and otherwise were honest about their history and symptoms. All were admitted with a diagnosis of schizophrenia. After intake, the patients stopped reporting any symptoms, but remained in the hospital an average of 19 days. Rosenhan (1973) used these results to claim that psychiatry was unable to differentiate people with mental illness from mentally healthy individuals. However, there are numerous methodological problems with the study that do not justify such a strong claim (Spitzer, 1975). For example, the pseudo-patients did intentionally mislead their physicians during the intake interviews, so care providers’ inability to detect the malingering is not necessarily an indication of poor diagnostic reliability for actual conditions. Nonetheless, the paper’s message significantly altered professional and public opinion about psychiatry.

Up until the 1980s, the orientation of psychiatrists in the United States and Europe was predominantly psychoanalytic, although other theoretical orientations were represented (Cooper & Blashfield, 2016). However, a growing group of more biologically-oriented psychiatrists were dissatisfied with the state of affairs in their discipline and wanted a return to the more “medical” descriptive and etiological framework of Kraepelin. One group of these psychiatrists at Washington University in St. Louis proposed a radical new solution to the problem of diagnostic reliability. Following the advice of philosophers of science (Hempel, 1964), they attempted to generate operational definitions of mental disorder categories, which they believed would delimit entities of illness that would correspond to separate etiologies, have different responses to treatment, and represent different heritabilities (Robins & Guze, 1970). This group of psychiatrists became known as the neo-Kraepelinians (Blashfield, 1984; Compton & Guze, 1995). The diagnostic criteria they generated became the basis of the third edition of the DSM (Feighner, Robins, Guze, Woodruff, Winokur, & Munoz, 1972; Spitzer, Endicott, & Robins, 1975).

The selection of who leads the revision process for a particular DSM is in the hands of the Board of Directors of the American Psychiatric Association. Immediately prior to the development of DSM-III, a neo-Kraepelinian psychiatrist named Robert Spitzer (b. 1932 – d. 2015) helped himself stand out through resolving a pressing political controversy. Special interest groups and others were decrying the inclusion of homosexuality as a mental disorder in the DSM-II. However, a significant portion of the membership of APA wanted to keep the condition in the manual because they treated homosexuality as a disorder in their clients. Spitzer proposed a compromise termed “sexual orientation disturbance” that depathologized homosexuality per se. Instead, only individuals who sought treatment to change their homosexual orientation would qualify for a diagnosis. The issue was put to a vote of the general membership of the American Psychiatric Association in 1973, with the majority approving the change. Following his political success in this controversy, Spitzer was selected to head the next DSM revision (Williams, 2015).

The DSM-III represented what philosophers of science term a paradigm shift (Kuhn, 1962). It was a radical break from tradition that stemmed from the reaction against the problems described above. Spitzer had the power to implement the changes advocated by the neo-Kraepelinian group.
Therefore, the DSM-III (APA, 1980) incorporated structured diagnostic criteria that listed, point-by-point, the required features for a diagnosis as opposed to paragraph-style definitions that were ambiguous about which features were suggested rather than required. The DSM-III was a resounding success, both scientifically and financially. It resulted in a storm of research on the best operational definitions for the diagnoses and a nearly eight-fold increase in sales (from $1.27 million for DSM-II to $9.33 million; Blashfield, Keeley, Flanagan, & Miles, 2014). The flood of new research made it clear that a revision to the diagnostic criteria was necessary, thus leading to the DSM-III-R in 1987.

Three more editions of the DSM have arisen since that time—the DSM-IV, DSM-IV-TR, and DSM-5—but each structurally looks very similar to DSM-III. Where the major project of DSM-III was to improve reliability, the project of DSM-IV was to document and improve validity of the diagnoses. Therefore, the chair (Allen Frances, b. 1942) placed a threshold on the scientific evidence needed in order to justify a change as a means of preserving continuity with previous editions (Frances, Widiger, & Pincus, 1989). The DSM-IV committee undertook massive literature reviews and re-analyses of existing datasets to justify any changes that were subsequently published in a series of sourcebooks (Widiger et al., 1994; 1996; 1997; 1998). Six years after its publication, the APA published a text revision (DSM-IV-TR) that did not alter any of the diagnostic criteria1, but updated the supplemental content associated with the description of the disorder (e.g., gender prevalence, cultural information, etiology). The most recent edition of the DSM was published in 2013 amid notable dissatisfaction from a variety of interested parties (e.g., Frances & Widiger, 2012; Sanislow et al., 2010), similar to the controversy surrounding DSM-II. The chapter will next address some of those current nosological issues, along with their historical precedents.

**Modern Diagnostic System and Debate**

A current debate centers around disagreements about whether psychopathological conditions are better conceptualized as discrete categories characterized by certain types of pronounced symptoms or as marked variations of common behaviors found in the general population. For example, one could think of an individual as either having Major Depressive Disorder or not (categorical), or one could think of the degree to which the person is depressed from mild to moderate to severe (dimensional). Both models have a long history in the study of people with psychopathology. For example, the four kinds of “madness” described by Plato earlier in the chapter are an example of a categorical model, where Hippocrates’ humoral theory incorporates dimensional components by describing the balance between amounts of bodily fluids. Categorical and dimensional theories have faded in and out of popularity many times. The modern classification systems have favored categorical approaches, in part because of the return to Kraepelin’s ideology. However, the pendulum is beginning to swing again, as many modern psychopathologists begin to value the benefits of a dimensional system.

The categorical model has been credited with bringing about improvements in diagnostic agreement (i.e., reliability) and communication among mental health professionals, with the more precise diagnostic criteria allowing for the development of research instruments, providing a worldwide common diagnostic language that has also enhanced teaching, and facilitating public access to diagnostic definitions, resulting in improved communication between mental health professionals and their clients (Helzer, Kraemer, & Krueger, 2006). Diagnostic decisions based on a categorical model are dichotomous in nature. Clinicians are required to judge the presence or

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1 There was one exception; the criteria did change for some of the paraphilic disorders following a clear oversight that led to inadvertent effects on forensic cases. In essence, the change clarified that individuals who acted upon paraphilic interests with a non-consenting partner by definition had met the clinical significance criterion (First & Pincus, 2002).
absence of symptoms on a yes or no basis. For example, a woman is either pregnant or not. An underlying assumption of the categorical model is that particular constellations of diagnostic symptoms can accurately distinguish normal from abnormal behavior patterns and one psychological disorder from another.

The categorical model has been a source of significant controversy. Many critics of the DSM believe that it relies too heavily on arbitrary judgments and diagnostic cutoffs (Helzer et al., 2006; Widiger & Samuel, 2005). For example, take criterion A of major depression from the DSM-5 (American Psychiatric Association, 2013): why are five symptoms required to be present for a diagnosis? Why not four or even three? The cutoff of five symptoms represents a consensus of the DSM authors. However, a person could display four symptoms to such an extreme as to disrupt social and occupational functioning. Conversely, a person can display five symptoms to a milder extent with no significant disruption in interpersonal functioning. Another point often raised by critics is that many diagnostic features of various disorders are also found in the general population. For example, people experiencing major depression often report feeling sad, hopeless, down in the dumps, and blue. However, these types of affective symptoms are also often reported by individuals without a depressive diagnosis. The question becomes differentiating normal from abnormal variations of mood. Other categories of disorders such as personality and anxiety disorders present similar challenges (Helzer et al., 2006; Widiger & Samuel, 2005).

As a result of these criticisms of the categorical model, a dimensional model of psychopathology has been proposed (Helzer et al., 2006; Widiger & Samuel, 2005). The dimensional model conceptualizes abnormality as extreme variations of human behavior found in the general population. From this perspective, emotions like feelings of sadness or hopelessness exist on a continuum ranging from normal to abnormal. Thus feelings of sadness classified as being clinically significant represent an extreme variation of the same sadness present in the general population (Helzer et al., 2006; Widiger & Samuel, 2005). In other words, when compared with normal behavior, categorical models propose that abnormality differs in kind, but dimensional models propose that abnormality differs more in degree. Advantages of dimensional models are that they offer mental health professionals advantages such as a more suitable framework for understanding relationships among social and biological variables. Dimensional models provide professionals more information regarding quantitative levels of symptom, type, and severity. These models would serve well in creating diagnostic profiles, treatment plans, and provide increased precision in collecting epidemiological and research data (Helzer et al., 2006; Widiger & Samuel, 2005).

Diagnostic symptoms such as those found in major depression can be expected to vary across time and situational contexts. A person may feel sad at certain times but not at others. For this reason dimensional models have tended to focus on personality traits assumed to be more stable (Helzer et al., 2006; Widiger & Samuel, 2005). Psychopathology is represented using personality traits taken from the five factor model (a.k.a., Big 5) theory of personality (Costa & McCrae, 1992). Personality functioning is understood in terms of five domains which are bipolar in nature: negative affectivity/neuroticism vs. emotional stability, detachment vs. extraversion, antagonism vs. agreeableness, disinhibition vs. conscientiousness, and psychoticism vs. lucidity (American Psychiatric Association, 2013, p.773). In the dimensional model, major depression would be characterized by low levels of emotional stability and extraversion. Dimensional models are not without limitations. For example, a limitation of dimensional models is the lack of a clear diagnostic threshold for determining how extreme a symptom or trait must be for it to be of clinical significance. The DSM-5 authors considered hybrid models that combine features of both categorical and dimensional models. For an example of such a model, interested readers are
encouraged to see the alternative model of personality disorders presented in DSM-5 (American Psychiatric Association, 2013, pp. 761-783).

Thus far we have presented the major historical developments regarding understanding and classifying psychopathology. Now we will shift gears and provide a more detailed overview of a specific model of psychopathology. We will focus on the multicultural or sociocultural model. In choosing this particular model we fully acknowledge there are viable biological and psychological models. However, to address all perspectives is beyond the chapter’s scope save for a very cursory treatment and would only duplicate what can be easily found in the opening chapter of any abnormal psychology text. Given current social and political tensions it seems most useful to provide a closer look at the role played by cultural dynamics and mental health.

The Multicultural Model of Psychopathology

Multicultural perspective

The chapter will now address a more recent model of psychopathology known as the sociocultural or multicultural model. The authors recognize the importance of other biological or psychological models. Space limitations combined with recent tragic shootings, such as those in Dallas, Texas, render it most prudent to highlight existing connections between multicultural considerations and the development of psychopathology.

The multicultural model of psychopathology presents an alternative to the biomedical model coming from Kraepelin’s tradition. According to the multicultural perspective, psychopathology cannot be fully explained without considering the role of social and cultural factors. Variables such as gender or racially related prejudice, religious preference, social class, physical or intellectual ability level, sexual orientation, and age constitute sociocultural risk factors for the development of various forms of psychopathology (Sue, 2004). According to multicultural theorists, members of various disadvantaged populations, such as individuals with disabilities, racial minorities, and women, are more likely to experience unique stressors in the forms of prejudice and discrimination. Members of such marginalized groups live within a constellation of individual, institutional, and cultural forces serving to demean and deny them equal opportunity (Sue & Sue, 2008a; 2008b; Ridley 2005). For multicultural theorists, factors such as prejudice, discrimination, immigration, and acculturation are causally linked with, and not mere correlates of, psychopathology (Sue, 2004; Sue & Sue, 2008a; 2008b). In other words, multicultural theorists place the primary locus of causality with failures in society and not maladaptive processes within the individual. Notice that this perspective has some similarity to the ideas about psychopathology that emerged following the French Revolution described earlier in the chapter. To some extent current multicultural ideas regarding psychopathology are historically grounded in the work of individuals such as Phillip Pinel and later Adolf Meyer. Thinkers such as these promoted the notion that social, cultural, and other environmental forces could significantly impact a person’s psychological health. In a similar fashion the increased emphasis given to environmental factors arising from World Wars I and II also helped provide a foundation for current multicultural perspectives. Contemporary multicultural theory has refined earlier ideas by specifically targeting certain variables like discrimination and acculturation and continuing to develop a scientific framework to support its claims.

Contemporary as well as historical forces have helped shape the multicultural perspective. The focus on cultural dynamics becomes increasingly central due to the numerical increases in ethnic minority groups. Higher birth rates and immigration trends are resulting in ethnic minorities becoming “emerging majorities” (Brammer, 2012; Hays & Erford, 2010). The best demographic
projections predict that by 2050 Caucasian Americans will represent about 50.1% of the total United States population, down from 69.4% in 2000. By contrast, Hispanic Americans are projected to increase from about 12% in 2000 to about 24% in 2050 (Hays et al., 2010, p. 2). Hays et al. (2010) note that as the United States population becomes increasingly diverse, psychologists are becoming more aware of how cultural and contextual factors contribute to the development of psychopathology. A second factor accounting for the growth of the multicultural model is continuing efforts to expand civil rights protection to members of various minority populations (Sue 2004; Sue 2008a; 2008b). Legislation aimed at targeting institutional segregation such as the Civil Rights Act of 1964, the Voting Rights Act of 1965 and the 1991 Americans with Disabilities Act have contributed to an appreciation of the negative impact of various forms of prejudice. We will now provide readers some concrete applications of the multicultural model. For brevity’s sake we will limit our discussion to gender, race, and social class.

**Gender and sexism**

Women are at least twice as likely as men to be diagnosed with psychological disorders such as depression and anxiety and several times more likely to be diagnosed with an eating disorder (Sue & Sue, 2008a, 2008b; American Psychiatric Association, 2013). Multicultural theorists assert that women are more vulnerable to these types of difficulties due to their experiences of greater levels of unique stress (Sue & Sue, 2008a; 2008b). Women assume more responsibility for domestic affairs such as child care as well as social and interpersonal relationships. This is true even for women finding themselves employed full time outside the home (Sue et al., 2013).

Additionally, women experience many unique workplace stressors. According to the National Academy of Sciences, National Academy of Engineering, and Institute for Medicine (2006), women are more likely to be employed in low-wage, traditionally female occupations. Women are also more likely to be paid less than men even when employed in similar occupations. Women are also more likely to encounter career barriers such as difficulty or inability to locate a career mentor, lack of access to formal or informal organizational pathways to promotion, and a general lack of organizational social support (Sanchez-Hucles & Davis 2010). According to a 2008 report of the Equal Employment Opportunity Commission (EEOC), women are more than five times as likely to be subjected to sexual harassment in the workplace (cited in Sue et al., 2013). As many as 60% of women report being sexually harassed at work. From a multicultural perspective, these types of domestic and employment related inequalities are owed to institutional and individual sexism.

Sexism is the key factor in women’s lower promotion rates, greater job segregation, and negative career expectancies. Women, particularly women of color, are significantly underrepresented in professional managerial and CEO positions in leading American corporations (Sanchez-Hucles et al., 2010). In 2005, women accounted for 14.7% of Fortune 500 board of director seats and 2.4% of Fortune 100 CEO positions (Sanchez-Hucles et al., 2010). The few women promoted to high level corporate positions are often placed on a “glass cliff” by being given high risk situations fraught with chances for failure.

**Classism**

Classism is a term used by multicultural theorists when referring to prejudice and discrimination directed against individuals from low socio-economic status (SES) backgrounds (Hollingshead & Redlich 2007). Psychologists are becoming increasingly aware of ways in which low SES negatively impacts mental and physical health. Low SES includes people who are living in poverty due to being unemployed or under-employed. Definitions of SES all include indexes of education, income, and occupational status (American Psychological Association Task Force Report, 2007). By any definition
of SES, women and other minorities are over-represented in poverty (Hollingshead & Redlich 2007; APA Task Force Report, 2007). Classism manifests itself in several ways through logistical and psychological mechanisms.

It is well-documented that living in poverty subjects people to a greater number of logistical and practical stressors (Sue et al., 2013; Sue & Sue, 2008a, 2008b). People in poverty experience low wages, lack of transportation, a lack of personal savings, lack of access to quality health care, and restricted dietary options (American Psychological Association Task Force Report on Socio-Economic-Status, 2007; Smith, 2010). The inability to meet such basic needs has obvious implications for physical and psychological well-being. This array of stressors significantly accounts for the greater number of psychological disorders found among poor people. Virtually all psychological diagnoses are found in greater number among poorer people (Hollingshead & Redlich, 2007; Butcher et al., 2013).

People in poverty are also subject to negative stereotypes and bias. These negative perceptions are not only held by general society but have been frequently found among psychologists and other mental health professionals (Smith, 2010). Compared to middle and upper SES people, low SES individuals are more likely to be perceived as less worthy, less capable, and socially isolated. They are more likely to receive inferior and less effective types of psychological services (American Psychological Association Task Force Report on Socio-Economic-Status, 2007; Smith, 2010). Together these types of stressors are thought to account for the lower physical and psychological well-being often found among low SES groups.

Racial and ethnic prejudice

Early multicultural theory and research focused on racial and ethnic populations such as African Americans, Hispanic Americans, Asian Americans, and Native Americans. Many authors focused on the role of prejudice, discrimination, and cultural oppression in contributing to increased psychological distress among racial and ethnic minority groups (Sue, 2004). For example, Breslau, Aguilar-Gaxiola, Kendler, Su, Williams, and Kessler (2005) found that African and Hispanic-Americans showed greater persistence and chronicity of psychological disorders (e.g., mood and anxiety disorders) compared to Caucasian Americans. Similarly, Native Americans show high lifetime prevalence rates for alcohol dependence, Posttraumatic Stress Disorder (PTSD), and, in some Native American tribes, a higher lifetime rate for depression (Beals, Novins, Whitesell, Spicer, Mitchell, & Manson, 2005). Rates of alcohol-related disorders and suicide are 4 to 6 times higher among Native Americans than other ethnic minority groups or Caucasians. Rates of suicide are particularly high among Native American adolescent males—the highest in the nation (Beals et al., 2005: Gone & Trimble, 2012).

Ethnic differences in symptom expression have also been found. Asian-Americans, particularly those who are more traditional, often express emotional states such as anxiety with somatic symptoms such as tightening in the chest or heart palpitations (Hinton, Park, Hsia, Hofmann, & Pollack, 2009). Various writers have noted that men, particularly men of color, manifest emotional disturbances in atypical ways such as in somatic cognitive or motivational complaints (Levant & Kopecky 1996; Pollack 1990; 1995; 1998). Such differences contribute to under or misdiagnosis of psychological disorders in ethnic minority individuals.

Culture-bound psychopathology

Cross-cultural research provides strong evidence to support the claim that the symptoms of various forms of psychopathology found in a given culture may depend on specific cultural norms. For example, internalizing disorders such as depression or anxiety tend to be more frequent in non-
Western countries (such as Thailand); conversely, externalizing disorders such as conduct disorders are more often found in Western countries like the United States (Butcher et al., 2013; Comer, 2013; Sue et al., 2013). Such differences may reflect a cultural tolerance for particular types of psychological symptoms. In many Asian countries parents and other family members are very intolerant of externalizing or under-controlled behavior. Young people are taught to suppress expressions of anger (Butcher et al., 2013; Nevid et al., 2014). Specific sociocultural factors influence which types of problems typically develop. Kleinman and Good (1985) in their classic cross-cultural study of depression noted marked differences in depressive symptom patterns. Key diagnostic features such as a sense of guilt, frequently seen in Western countries, are not found in many other non-Western societies. Other depressive features such as social withdrawal, lack of pleasure, and sadness have different cultural meanings in non-Western societies. In Buddhist religious traditions, suffering stems from a desire for worldly things and a separation from the world is a necessary step towards enlightenment. In Muslim religious traditions, grief and sadness is a natural consequence of living a just life in an unjust and corrupt world. Thus, experiences of grief are a sign of depth of character (Kleinman & Good, 1985).

Certain types of psychological disorders appear to be culture-bound and found only in certain cultures (Butcher et al., 2013: Comer, 2013). These are recognized in the DSM-5 in the glossary of cultural concepts of distress (American Psychiatric Association, 2013, pp. 833-837). These syndromes often have features similar to DSM-5 diagnoses but also have many unique features and do not fit any DSM category. Ataques de nervios—attack of nerves—found among individuals of Latino descent consists of symptoms of emotional distress including anxiety, grief, and anger. Taijin Kyofusho (TKS), interpersonal fear disorder, found in Japan, is characterized by an anxiety that one’s actions or appearance will make others uncomfortable or offend them (American Psychiatric Association, 2013; Nevid et al., 2014). In sum a great deal of evidence suggests that the particular symptoms as well as types of psychological difficulties are impacted by specific cultural norms and context.

Conclusion
The chapter has aimed to provide readers an increased understanding of the nature and scope of psychopathology. Hopefully the chapter helps readers appreciate that our understanding of abnormality continues to evolve. The classification and understanding of psychological disorders is far from settled. Certainly the mental health professions have come a long way since psychopathology was simply considered madness. It is equally certain there is much work to be done as we continue to move towards a more complete knowledge of human abnormality.

Vignettes
1. Micro-Agression: Am I a Racist?
Am I a racist? Most of us would say there is only one possible answer to this question. Certainly not! We can all say we do not belong to any racist organizations like the Ku Klux Klan, skinheads, or any neo-Nazi group. We recoil in horror at hate crimes like the mass shooting of the Emanuel 9, the 9 African Americans shot to death by a self-proclaimed white supremacist during a Wednesday night Bible study in Charleston South Carolina.

Those of us who came of age during the 1960s can recall the vivid television images of race riots in places like Selma and Birmingham Alabama, Chicago, and New York City. All of us can recall vivid television images of racially motivated crimes against African Americans such as church bombings, church burnings, and fatal shootings. Hopefully none of us support social policies such as racially
based school segregation or job discrimination. We feel anguished by the 1997 murder of Matthew Shepard and offended by a leading presidential candidate’s recent offensive comments referring to most undocumented individuals from Mexico as rapists. After all, many of us voted for America’s first African American president. So how could we possibly be considered racists?

In his book *Overcoming Our Racism* D. W. Sue presents the controversial notion that all of us are to some degree racists. How could this be? Simply put, we are all products of a racist society and have been socialized to hold racially biased views of other groups. Sue gives particular attention to white racism since white people still control the majority of America’s social, political, and economic institutions and because these types of systems largely benefit white people. We must understand he is not saying only white people are racist. In fact racists exist in all groups. However, since white people still control most of America’s resources our racism has disproportional effects for individuals of color. Sue is also not saying that all or even most white people commit the types of hate crimes we all abhor. The racism of most white people is unintentional. Dr. Sue flatly states that the unintentional racism of good and decent white people poses a greater threat to people of color than overt acts of discrimination. So if the racist acts are not overt then how exactly can they affect minority individuals? Our racist acts are covert, sometimes subconscious, and carried out in the form of micro aggressions.

Micro Aggressions are the stuff of daily life. They are the racial insults and jokes “nice people” laugh at or do not object to. Thinking about micro aggressions always brings to mind experiences of one of my former students. Sarah, not her real name, was a 25 year old Hispanic female. She was a single mother and also happened to be one of our honors undergraduate psychology students. She had a goal of pursuing her doctorate in clinical or counseling psychology. When she discussed her goal with the departmental faculty the typical response went something like “Great! You will have no trouble getting into a doctoral program being a Hispanic female.” Such comments were made by several faculty across many academic disciplines. Of course Sarah was a Hispanic female, but consistently her gender and race seemed to be more relevant as perceived qualifications than her academic ability and earned accolades. At this point it should be pointed out that one author works at a Hispanic-serving university. Therefore most of my students are Hispanic individuals. Sarah graduated and entered a doctorate psychology program were she was the only Hispanic person in the program. She soon noticed her peers never initiated any form of social conversation with her. When she spoke to them, they politely responded, then immediately resumed conversing with each other. Sarah is a composite taken from real life experiences of many of our Hispanic students. These are examples of micro aggressions.

Micro aggressions generally do not violate any laws and are often unnoticed by the perpetrator. They include comments such as “you are a credit to your race,” and “are you from around here” when speaking to a person of color. Micro aggressions are the racist jokes we all laugh at when we know they are not really funny. Many multicultural theorists believe that micro aggressions serve to create a social climate that devalues individuals of color, rendering them more vulnerable to experiences of psychological distress (Hays et al., 2010; Brammer 2012). Micro aggressions arise from our unexamined prejudice. A social mechanism of devaluation occurs when people of color internalize the negative judgments always inherent in micro aggression (Sue 2004; Hays et al., 2010).

The concept of micro aggression is well supported by recent social psychological research (Myers 2013). Readers may notice it is virtually identical to the social psychological concept of implicit racism.
Sue offers a hopeful message to all people by presenting many specific recommendations for developing a non-racist identity (Sue: 2004 PP. 190-230). For example, we all can actively seek challenging experiences that place us in positions where we are interacting with ethnic minority individuals of equal status. White college professors like us could choose to attend a professional conference or workshop sponsored by an African American organization. Similarly, an African American professor can choose to attend events sponsored by Asian professional organizations. All of us can ensure that our course curriculums address issues of racial equality or other diversity concerns, and all of us can strive to make our interactions with others respectful and inclusive.

2. General Paresis

During the beginning and middle of the 19th century, an interesting health problem was spreading in Europe. Middle and upper-class men would suddenly begin to have severe delusions, followed by paralysis of the limbs and body, quickly followed by death. This mental illness was called general paresis, and it was one of the most prevalent mental disorders of the time.

The identification of the cause of paresis began with a French physician named Antoine-Laurent Bayle, who discovered through autopsies of those with paresis that their brains seemed to have shrunk and their meninges were inflamed. Thus, he called the illness chronic meningitis (Brown, 1994). However, his discovery, rather than being praised, led him to be fired from his position because the idea of biological causes of mental disorders went against the culture of emerging psychiatry at the time, which was led by Phillipe Pinel and his moral treatment (Goldstein, 1987).

Many other causes of paresis were posited, but the disorder remained largely a mystery until epidemiology gained popularity as a method of investigating medical problems. General paresis was known to occur mostly in wealthier men who were in their 30s or 40s. The disease varied by sociocultural groups, with the Irish and Italians having particularly high rates, and stereotypes, among other factors, guided researchers to the belief that general paresis may be due to chronic alcoholism. Military men and sailors had high rates of the disorder, where priests and rural individuals had lower rates, leading to a separate idea that it may be sexually transmitted.

The idea that syphilis might be a cause of general paralysis did not take hold until it was discovered that syphilis could be transmitted from mother to child, explaining the mysterious case of adolescents with paresis. Emil Kraepelin differentiated the delusions caused by dementia praecox (his term for what would later be called schizophrenia) from those in paresis, which he called dementia paralytica. He believed the origin was a toxin, which could be caused by syphilis, among other factors (Kraepelin, 1918). The discovery of neural degeneration led F.W. Mott to conclude that paresis was the result of a lengthy exposure to syphilis (Mott, 1901). Indeed, the symptoms of general paresis do not emerge until 10-20 years after the initial syphilitic infection. The reason is that syphilitic bacteria remain dormant in the body for many years, slowly migrating through the body’s tissues. It takes approximately 10 years for the bacteria to migrate into the central nervous system, where it once again becomes active and causes florid psychotic and paralytic symptoms.

In the beginning of the 20th century the bacterial cause of syphilis was identified, a bacillus called *Spirochaeta pallida*. A newly-developed blood serum test was able to identify *Spirochaeta pallida* in the cerebrospinal fluid of those with paresis, thus confirming the cause of general paresis. The history of general paresis was a great success for the newly formed discipline of psychiatry, because they could cure approximately 30% of patients in their asylums with a simple course of antibiotics. This method of defining, investigating, and identifying the biological cause of general paresis is the model that is widely accepted for investigating mental illnesses today. Modern
psychiatry operates under the assumption that research will one day identify a biological cause or a system of biological causes for most mental illnesses.

3. Homosexuality as a Mental Disorder

The acceptance of homosexuality has varied across human cultures throughout history. Homosexual acts (at least among men) were considered commonplace in ancient Greek and Roman society. The dominance of Judeo-Christian-Islamic religions through the Middle Ages into current times swung the pendulum the other direction; according to many in these religious traditions, homosexuality is an amoral abomination at worst and unacceptable behavior at best. The early diagnostic classification systems in the United States included homosexuality as a mental disorder deserving of treatment.

The various human rights movements of the 1960s and 1970s pushed for equal treatment of numerous marginalized groups, among them homosexual individuals. The DSM-II in particular came under attack from civil rights groups, who lamented that a legitimate lifestyle was pathologized as a mental disorder. At one such protest at a meeting of therapists in New York City, a young psychiatrist sat down with the protesters to learn their point of view. This psychiatrist was Robert Spitzer, who later went on to chair the development of DSM-III.

Spitzer was sympathetic to the arguments of the protesters that homosexuality lacked the characteristics of many other mental disorders. In particular, the person does not have any impairment in functioning or inherent distress about the condition other than society’s rejection of it. Therefore, it did not seem to him to be a mental disorder. As a junior member of the American Psychiatric Association’s task force for the revision of the DSM, he began a discussion among his colleagues about the placement of homosexuality. The resulting debates were heated, with many senior psychiatrists forcefully arguing that homosexuality should remain a mental disorder. Their argument cited two pieces of evidence: (a) psychoanalytic theory considered homosexuality the result of incomplete or disrupted psychosexual development; (b) some individuals sought treatment to change their homosexual orientation. Spitzer proposed a compromise. He proposed a category termed “sexual orientation disturbance” that included individuals who wished to change their sexual orientation, thereby providing these people with a diagnosis and the opportunity to undertake treatment. Simultaneously, homosexuality per se would no longer be a disorder. In the end, the American Psychiatric Association put the decision to a vote of its membership in 1973. Homosexuality was removed as a mental disorder and replaced with sexual orientation disturbance in the 7th printing of the DSM-II (American Psychiatric Association, 1973).

This political compromise earned Spitzer the role of chair for the next revision toward the third edition (DSM-III). “Sexual orientation disturbance” received a new name (”ego-dystonic homosexuality”) and a more thorough diagnostic description but continued to exist in DSM-III. This last vestige of homosexuality as a mental disorder was not removed until 1987 with the publication of the DSM-III-R (American Psychiatric Association, 1987).

However, the story did not end there for Spitzer. As with the rest of his career, he enjoyed challenging conventional wisdom (Williams, 2015). Toward that end, he undertook a study to investigate the efficacy of “reparative therapies” for people who identified as homosexual, which he presented at the annual meeting of the American Psychiatric Association in 2001. He conducted phone interviews with 200 individuals who reported undergoing some form of reparative therapy, and he concluded that the treatment seemed to work (Spitzer, 2003). The study was fundamentally flawed and unable to comment upon the efficacy of the therapy because it was based on the retrospective recall of the individuals and his participant selection was not random—many
politically motivated individuals volunteered for the study. There was immediate outcry when his claims received media attention, but Spitzer stuck to his guns and held fast to his claim that the therapy worked.

Spitzer then attempted to publish his findings, which many of his colleagues counselled against, warning that it could damage his reputation and end his illustrious career. Nonetheless, he published the paper in 2003 in the Archives of Sexual Behavior. The editor of the journal, Kenneth Zucker, was a friend and former colleague of Spitzer and agreed to publish the paper based upon his reputation, but insisted on pairing it with a series of commentaries, most of which strongly denounced the science and ethical implications of the work.

It took 11 years, but Spitzer eventually admitted that he was wrong (Carey, 2012). In 2012, he published a formal statement of apology to the gay community and recognized that the criticisms of his 2003 paper were correct. He tried to retract the paper, but was unsuccessful.

References


The History of Psychotherapy
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As long as there have been healers in human society, there have been attempts to ameliorate mental and behavioral problems, and vice versa. The ancient history of psychotherapeutic interventions overlaps almost entirely with the history of general medicine, as distinctions of mind and emotion from body were not commonplace. Hippocrates (460 – 377 B.C.E.) treated conditions such as mania and melancholia through changes in diet, exercise, and abstinence from excess (Maher & Maher, 1994). Sadly, other forms of treatment such as exorcism and trephination—drilling holes into the skull to release spirits—also remained prevalent for much of recorded history. The history of modern psychotherapy does not begin until after the scientific revolution of the Renaissance.

This chapter will review the progression of modern psychotherapies. Each tends to be a reaction to the failings of the previous dominant school of thought, often colored by the prevailing culture of the time. The chapter will start with how the pseudo-medical practices of Mesmerism and hypnosis led to the first major school of psychotherapy: psychoanalysis. The chapter will then progress through a series of reactions to psychoanalysis that birthed distinctly different approaches to healing the human condition. It will end with current directions in psychotherapy and likely directions the discipline will follow.

Earliest Forms of Psychotherapy

Psychotherapies emerged in the late 1700s and early 1800s as novel treatments for mental disorders. At that time, a physician, Franz Anton Mesmer (1734 – 1815), began treating patients’ psychological problems with what he called animal magnetism. Mesmer’s premise for animal magnetism was that bodily fluids were magnetized and that mental problems occurred when these fluids became unbalanced. Mesmer believed that he could heal his patients by placing magnets on their skin in order to control and redirect the flow of these fluids (Cautin, 2011). Supporters of animal magnetism continued these practices even after the scientific community of the era discounted it as a legitimate therapy (Fancher, 1996).

Louis XVI, the king of France from 1774-1792, sought to settle the debate on Mesmer’s animal magnetism. To do so, he solicited the help of Benjamin Franklin and formed an investigative committee to examine the legitimacy of Mesmerism on March 12, 1784 (Pattie, 1994). Franklin was the American Commissioner to France, and, although he had no formal scientific training, he led a group of intellectuals seeking to scientifically legitimize or refute animal magnetism (McConkey & Perry, 2002). During this process, Franklin and other commission members observed animal magnetism in action, and following these observations, Franklin wrote a thorough report on his scientific conclusions. Franklin determined that animal magnetism did not have curative abilities in and of itself and suggested that a person’s imagination and/or positive belief in a curative outcome might have led to the person reporting positive outcomes—in modern terms, a placebo effect (McConkey & Perry, 2002). Following Franklin’s death, Thomas Jefferson (who had assumed the role of American Commissioner to France) described Franklin’s conclusory opinions regarding this investigation: “The animal magnetism, too, of the maniac Mesmer...received its death-wound from [Franklin’s] hand, in conjunction with his brethren of the learned committee appointed to unveil the compound of fraud and folly” (Hale & Hale, 1888, p. 309). Although Mesmer claimed he had treated disorders using animal magnetism (Crabtree, 1993), the Franklin Commission’s conclusions prevailed (McConkey & Perry, 2002).
Years after Mesmer’s controversial work, Sigmund Freud emerged as the preeminent figure in psychotherapy and brought with him his own style of therapy, psychoanalysis, which treated mental illness through a person’s subconscious. Freud based his approach, at least in the beginning, on the procedures of hypnosis, which had gained some favor as a viable treatment of otherwise intractable psychological issues. Jean-Martin Charcot, working in Paris, had popularized hypnosis as a treatment for a variety of ailments, including “hysteria” which was a loosely defined construct involving many miscellaneous symptoms that could not otherwise be medically explained (Charcot, 1889). As a young professional, Freud received a fellowship to study under Charcot, where he developed an interest in psychopathology (Aguayo, 1986). Freud had entered medical training—specifically neurology—as a “backup plan” to his original goal of attending law school (Freud, 1969). Working with a colleague Josef Breuer in Vienna, Freud and he adapted Charcot’s methods into what later would become known as the “talking cure.” For the story of the case that directly led to the development of Freud’s psychoanalysis, see Vignette 1.

Freud suggested that people with psychological problems, or “hysterical patients” as he referred to them, were struggling with their symptoms due to impressive and forgotten events that the individual repressed. Freud treated his client’s traumata from a subconscious standpoint. Freud believed that the repressed memories one endures are the very pillar of one’s distress, and therefore he based his psychoanalytic theory on the notion that repressed memories exist, can be brought to the forefront of one’s consciousness, and are resolved by talking about them. The idea was to have clients bring subconscious issues to the forefront of their minds in order to heal whatever their problems might be. The psychoanalytic process often targeted repressed sexual trauma (Freud, 1938). Early in his career, Freud was convinced that sexual abuse was responsible for the manifestation of psychopathology; however, he later relaxed that claim and instead contended that the trauma could be imagined (Forrester, 1990). Freud rarely changed his opinions once he had formulated them. Part of Freud’s focus on sex was the sexually repressive culture of upper-class Europeans that purveyed the period, and many bought into his assertions regarding sexual abuse. After changing his views, Freud lost credibility in the eyes of sexual abuse survivors, the medical field, and the general public. Nonetheless, Freud maintained that he had not been completely wrong in his initial view but that his theory simply needed to be updated to include imagined sexual abuse.

As time progressed, Freud continued to develop psychoanalysis and expanded the approach to include dream analysis and free association. He conducted dream analysis by having clients recount their dreams and would comment upon recurring themes suggestive of subconscious distress (Freud, 1938). Free association, on the other hand, involved clients allowing themselves to experience and verbalize a free flow of thoughts. Even if clients were unaware of how thoughts related to one another, Freud believed these thoughts were linked to subconscious perceptions (Wolitzky, 2011).

Freud struggled to find supporters in Europe and the United States, partially because of his sensational claims that psychological problems were related to sexuality in general and to real or imagined child sexual abuse in specific. Followers and critics were unsure of how confident Freud was in his own teachings. Then, in 1909, Sigmund Freud delivered a guest lecture at Clark University and wrote about the experience afterwards, stating, “We found, to our great astonishment, that the unprejudiced men of that small but respected pedagogic-philosophical university knew all the psychoanalytic writings... even in prudish America one could, at least in academic circles, discuss freely and treat scientifically all those things that are regarded as offensive in life” (Freud, 1938, p. 950).
Initially, many of Freud’s clientele were wealthier individuals who could pay for multiple sessions of psychoanalysis per week for a prolonged period of time. However, in the aftermath of World War II, Freud determined to assist people with lesser means through free community-based clinics. Freud discussed this evolution within psychoanalysis in a speech he gave in Budapest in 1918, and the first free clinic was built in Berlin which provided psychotherapy for everyone, including people living in poverty (Freud, 1955). This era in the psychoanalytic movement attended to both the mental and materialistic well-being of clients from all socioeconomic backgrounds (Danto, 2005).

**Jung’s analytical psychology**

Carl Jung, the founder of Analytical Psychology and at one time Freud’s premier student, also believed that unconscious processes played a role in psychopathology. Jung’s theory of the unconscious was more inclusive than Freud’s three-component model and encompassed psychological processes that are outside of conscious awareness. Jung also introduced the concept of the collective unconscious, which he believed to be a set of unconscious expectations, behaviors, and interpretations that developed over the course of human evolution and are thus common to all individuals. Jung believed that psychological distress occurred when the needs and desires of the individual are at odds with the demands of the collective unconscious. Thus, Jung’s approach to psychotherapy was to examine how the individual client relates to the collective unconscious and to reduce psychological distress by resolving any conflicts between the two (Jung, 1939).

Soon after entering his psychiatric apprenticeship, Jung became frustrated by the prevailing attitude held by his teachers and contemporaries that patients’ inner experiences were unimportant. They were focused entirely on symptoms and diagnoses, whereas Jung was interested in what the patients thought, felt, and experienced as well as the factors that motivated his patients (Jung, 1963). Jung observed that patients did not benefit from being diagnosed with a disorder. He asserted, “[t]he crucial thing is the story. For it alone shows the human background and the human suffering, and only at that point can the doctor’s therapy begin to operate” (Jung, 1963, p. 124). Jung became attracted to Freud’s work because of their mutual interest in exploring neuroses, but he did not fully believe Freud’s assertion that all neuroses resulted from sexual trauma. Jung voiced these concerns but Freud did not take them seriously, claiming that Jung was too inexperienced to fully understand his sexual theory. As their friendship and working relationship developed, Jung observed that Freud became unusually fervent while discussing sexuality, stating, “[w]hen he spoke of it, his tone became urgent, almost anxious, and all signs of his normally critical and skeptical manner vanished” (Jung, 1963, p. 150). Jung described Freud as a “tragic figure,” because he could not escape the tunnel vision of sexuality to entertain other viewpoints (Jung, 1963, p. 153). Jung attributed the dissolution of their friendship to Freud’s inflexibility (Jung, 1963).

**Behaviorism**

So far, we have reviewed therapeutic approaches that primarily focused on resolving conflicts between conscious and unconscious processes. Although psychoanalysis and analytical psychology likely helped many people reduce distress, many members of the psychological community remained dissatisfied with the murky nature of working with the unconscious. This dissatisfaction, among other factors, gave rise to behaviorism, a movement rooted in the principles of learning, which sought to reduce psychological distress by directly modifying problematic behaviors, learned associations, and aspects of the client’s environment that contribute to that distress (Wachtel, 1997). Behaviorism focused on observable and measurable phenomena only. Behaviorists considered all forms of cognition—conscious or unconscious—irrelevant and unworthy of study.
because they failed to meet these standards (Watson, 1924). The behaviorism movement also emphasized the importance of evaluating and supporting treatments experimentally. In classical psychoanalysis, therapists viewed the therapy room as sacrosanct and dismissed any observation of the therapy process for study as detrimental to the outcome. In contrast, a behavior therapist begins treatment by first conducting a thorough analysis of the antecedents and consequences of the problem behavior—termed a functional analysis (Haynes & O’Brien, 2000). After completing the functional analysis, psychotherapeutic approaches then attempt to reverse maladaptive learned processes (Rescorla, 1988).

John Watson’s experiment with Little Albert (Watson & Rayner, 1920), arguably the most famous study to come out of the behaviorism movement, established that an experimenter could condition anxiety and fear in humans. Watson conditioned Little Albert to fear a white rat by repeatedly pairing the rat with a loud noise. Because the unpleasant noise consistently followed the presentation of the rat, Little Albert learned to expect something unpleasant when he saw the rat. The experimenters also presented Little Albert with a rabbit, a dog, a fur coat, and a Santa mask to determine whether his fear response generalized to stimuli with similar features (e.g., furry and white). When presented with these stimuli, Little Albert cried and attempted to avoid them by crawling away (Watson & Rayner, 1920). There are several substantial problems with the Little Albert study. Little Albert, being an infant, could not understand or consent to participate in a study that existed to cause distress and fear. This was especially problematic because Watson did not attempt to extinguish the fear response that Albert developed due to conditioning (Watson & Rayner, 1920). There has been some debate as to the identity of Little Albert. Some research into the identity of Little Albert calls the validity of the experiment into question by suggesting that Little Albert was an infant with hydrocephalus named Douglas Merritte, who died of his condition at the age of six (Beck, Levinson, & Irons, 2009). This evidence suggests that Little Albert was not developmentally normal and casts doubt upon the legitimacy of Watson’s findings (DeAngelis, 2012). However, other historians have argued that Little Albert was Albert Barger, a healthy boy who was the son of a wet nurse living at the hospital where Watson and Rayner conducted their work (Powell, Digdon, Harris, & Smithson, 2014). While there is evidence that the conditioning process was limited, Barger’s niece later reported that he had a lifelong fear of animals (Powell et al., 2014). Even if Watson and Rayner did not knowingly and intentionally select an infant with a serious medical condition, the study remains rife with ethical problems.

**Humanism**

Unlike the environment-focused behavioral approaches to psychotherapy that prevailed during the first half of the 20th century, humanistic approaches believe that individuals become distressed when something prevents them from reaching their full potential. Humanism was couched in the context of the American civil-rights movement, which valued individual freedoms and the acceptance of diversity. The humanistic approach characterizes individuals as purposeful actors who seek to maximize their potential, rather than simply reacting to their environment (DeCarvalho, 1990).

Carl Rogers is arguably the most well-known advocate of the humanistic approach to psychotherapy. Rogers’ person-centered therapy departed from the traditional therapeutic dynamic by changing the roles of the therapist and the client. Rogers did away with the traditional power dynamic by establishing the client as the expert and allowing the client to direct the course of therapy. The therapist’s primary responsibility is to interact with the client in specific ways that allow the client to reach her goals. Therapists who practice person-centered therapy must
demonstrate unconditional positive regard, empathy, and congruence to their clients (Rogers, 1980). Rogers acknowledged the influence of Otto Rank in his therapeutic approach (Kramer, 1995). Rank was a member of Freud’s inner circle until their ideological differences regarding the therapeutic relationship and the focus of therapy caused them to part ways (Kramer, 1995). Unlike Freud’s therapy, which focused on unearthing repressed trauma of the past that occurred over a long period of time, Rank’s therapy emphasized the importance of present experience and free will, focused on improving patients’ present functioning, and terminated upon reaching this goal (Wadlington, 2012).

**Gestalt Therapy**

Gestalt therapy, developed by Fritz and Laura Perls in the 1940s, was influenced by the Gestalt principles of visual perception and organization in cognitive psychology. Fritz Perls entered the medical profession with an interest in studying brain-injured soldiers after fighting in the trenches of World War I. Later, Perls developed an interest in psychotherapy and became a student of Wilhelm Reich, who was the director of Freud’s outpatient clinic (Perls, 1969; Sharaf, 1994). In this role, Perls was also influenced by psychoanalytic theory, but developed his own ideas after emigrating to South Africa following the rise of Adolf Hitler. Figure and ground perception (that is, identifying the part of an image that is the figure or subject and the parts that make up the background) was particularly influential as a metaphor for his philosophical stance on life. The most famous example of flexible figure-ground perception is a simple black and white image that can be perceived in two different ways. A viewer who focuses on the white portion of the image sees a goblet, whereas a viewer who focuses on the black portion of the image sees two faces in profile almost touching nose-to-nose. Perls used this example to illustrate the idea that an individual’s perception of the world around him or her is subjective; two people can experience the same stimuli and come to vastly different conclusions about what they experienced. The centrality of this conclusion partially may have come from Perls’ varied life experiences, having lived in Germany, the Netherlands, South Africa, and the United States. Therefore, one of the main goals of Gestalt therapy is to increase the client’s awareness of his or her surroundings so that he or she can have a better understanding of their environment as well as his or her emotional reactions to it. The Gestalt therapist may accomplish this goal, in part, by having the client focus only on what is happening in the moment (Perls, 1951). For an example of how Perls kept clients in the moment during therapy, see Vignette 2.

Some advocates of Gestalt psychology claim that Perls did not fully understand the Gestalt terminology that he adopted for his therapy. For example, Henle (1978) argued that Perls used the terms figure and ground as if they were interchangeable with “important” and “unimportant,” and failed to incorporate Gestalt aspects of visual perception and organization into his therapy. Henle also remarked that in Gestalt psychology, reversible figure-ground images such as the one described above are the exception rather than the rule. Barlow (1981) added that Perls’ viewed figure-ground perception as a matter of selective attention, rather than the automatic process described by the Gestalt psychologists. Barlow also noted that Laura Perls, who had a degree in Gestalt psychology, objected to her husband choosing this name for their therapy. Regardless of whether Perls was remiss in naming his therapy after a branch of psychology of which he had a limited understanding, Gestalt therapy is worth mentioning because of its unique present-focused perspective. See Vignette 2 for an example of how Perls’ focus on the present plays out in a therapy session.
Cognitive-Behavioral Therapy

Albert Ellis’s Rational Emotive Behavior Therapy (REBT) was one of the first cognitive-behavioral therapies (CBT). While traditional behavior therapy ignored cognitions, later therapies integrated a client’s thoughts into the treatment formulation and thereby became termed cognitive-behavioral. Ellis believed that psychological distress resulted from irrational thoughts or beliefs about the implication of experienced events that have no basis in reality. Therefore, the main goal of REBT is to reduce distress by providing the client with the skills needed to identify irrational thoughts that cause emotional distress and replace them with rational thoughts that will allow the client to have more appropriate emotional reactions to the events in his or her life (Ellis, 1973). Ellis received graduate training in psychoanalysis and practiced it for several years before becoming dissatisfied with its passive nature, citing a lack of “real activity and homework” as one of the main reasons why he abandoned the practice (Weinrach, 1980, p. 157). Ellis’s personal experiences during his youth influenced his decision to include behavioral techniques such as in vivo desensitization in REBT; he claimed to have gotten over his fear of public speaking and approaching women by forcing himself to engage in these activities on a regular basis (Weinrach, 1980). Ellis was an extremely productive person. During his lifetime, he conducted REBT with thousands of clients, published many papers on REBT as well as controversial subjects such as sex and religion, and critically examined the validity of several psychometric tests (“Awards for distinguished professional contributions: Albert Ellis,” 1986). Ellis’ ideas and techniques are still used in many modern CBT treatment manuals. 

Contemporary with Ellis, Aaron Beck developed another form of cognitive-behavioral therapy. Beck (1985) outlined a set of key principles that should be taken into consideration when attempting to conduct this form of psychotherapy. He stated that CBT should be brief; require a strong, collaborative relationship between the client and therapist; use Socratic questioning; emphasize structure, direction, inductive reasoning, and a problem-oriented focus; educate the client; and utilize homework to promote better outcomes. Like many of the other therapists covered in this chapter, Beck felt compelled to develop his own form of therapy after becoming dissatisfied with psychoanalysis. That said, Beck’s departure was unique. He experimentally tested the validity of the psychoanalytic hypothesis of depression and abandoned the practice after the evidence failed to support its claims (Beck, 2008). As a result of this research, Beck observed that many depressed individuals tended to negatively appraise themselves and their experiences, while simultaneously disregarding or deemphasizing positive information. These observations provided the groundwork for Beck’s research into cognitive distortions that are specific to depression, anxiety, and suicidality (“Distinguished scientific award for the applications of psychology: Aaron T. Beck,” 1990). Beck developed several research-based assessments that measure the likelihood that a person has a psychological disorder or is at risk for developing a disorder based upon how strongly they endorse disorder-specific cognitive distortions. In a longitudinal study of suicide risk, patients identified as high risk by Beck’s Scale for Suicidal Ideation were seven times more likely to die by suicide than their low-scoring counterparts (Brown, Beck, Steer, & Grisham, 2000). Today, many clinics that provide outpatient therapy use Beck’s scales to inform treatment goals and to monitor client progress.

Third-wave therapies

Psychoanalysis and its variants were the first “wave” of psychotherapies. Cognitive-behavioral therapy, humanistic therapy, and Gestalt therapy were all reactions to psychoanalysis in one form or another. These approaches are “second-wave” therapies (Hayes, 2004).
behaviorism and psychoanalysis dominated American psychology, researchers and practitioners believed humanism was radical. Behaviorists and psychoanalysts called humanism the “third force” in psychology. However, humanism is no longer novel and radical. Now, a new set of therapeutic styles have emerged from these forefathers, and are so termed “third-wave” therapies.

**Dialectical behavior therapy.** Marsha Linehan developed dialectical behavior therapy (DBT) for the treatment of borderline personality disorder (Chambless & Hollon, 1998). The core theory of DBT is a biopsychosocial approach, which suggests that a person’s biological disposition for being emotionally vulnerable, coupled with experiences of growing up in an invalidating environment, allows for emotional dysregulation to become a major deficit in a person’s interpersonal skills (Lynch, Chapman, Rosenthal, Kuo, & Linehan, 2006). Marsha Linehan developed DBT, in essence, because of her personal experience with mental illness. At the age of 17, Linehan was hospitalized due to self-mutilating behavior (e.g., cutting, burning, head banging), emotional dysregulation, and suicidal ideation (Carey, 2011). Individuals with Borderline Personality Disorder often engage in self-destructive behavior, and Linehan sought to help those who struggle with the same symptoms that she did: “I honestly didn’t realize at the time that I was dealing with myself. But I suppose it’s true that I developed a therapy that provides the things I needed for so many years and never got” (Carey, 2011, p. 11). Vignette 3 examines her experiences more closely.

**Mindfulness.** A variety of treatment approaches, including DBT, utilize an attention-training tool called mindfulness. However, mindfulness can also be an independent treatment, and so we discuss it separately here. Mindfulness has its roots in Buddhist practices, and promotes attending to the here-and-now through techniques such as meditation. Some clients, especially those crippled by anxious thoughts or emotion dysregulation, excessively worry about the future or situational outcomes for which they have no control (Scott et al., 2004). Mindfulness became a therapeutic tool in the late 1970s when Jon Kabat-Zinn founded the Mindfulness-Based Stress Reduction Program at the University of Massachusetts Medical School, borrowing heavily from his experiences with Buddhist teachers (Wilson, 2014). Later, Kabat-Zinn created the Center for Mindfulness not only to treat clients but also to train other clinicians how to implement mindfulness-based techniques (Center for Mindfulness, n.d.). Today, mindfulness-based approaches are used to treat a wide range of clinical and non-clinical issues (Grossman, Niemann, Schmidt, & Walach, 2004).

**Acceptance and Commitment Therapy.** Traditional Western medicine has generally pursued the goal of reducing pain and discomfort. Acceptance and Commitment Therapy (ACT) takes the unconventional stance that suffering is unavoidable in life, and so adopts the goal of teaching one to accept suffering when it occurs, rather than engage in a set of paradoxical strategies aimed at avoiding suffering that ironically usually prolong it. ACT also focuses on helping clients to life lives consistent with their values, and committing to actions consistent with those values (Hayes, Strosahl, & Wilson, 1999).

**Integrative and trans-theoretical models**

Instead of identifying with a single theoretical orientation, more and more therapists choose to integrate components of multiple orientations into a cohesive framework. This movement toward integration stems from the notion that no single theory can adequately capture all aspects of human experience, nor can it incorporate the best methods of alleviating suffering by combining elements from two or more theoretical orientations (Patterson, 1989). Research on therapy has shifted from evaluating the efficacy of a single therapy to investigating the components of therapies that are most efficacious and effective (Messer & Wampold, 2002). The goal of this
research is to identify these so-called “common factors” and then implement them across therapeutic orientations to achieve optimal outcomes.

Conclusion

The history of psychotherapy has largely been a series of reactions to the preceding dominant approach. The cultural zeitgeist of the times likely has as much to do with the favor of various schools of psychotherapy as their efficacy or evidence-base. The days of “schools of psychotherapy” are coming to an end in favor of general competencies and empirically supported techniques (Barlow & Carl, 2011). Similar to the ways general medicine moved away from broad schools of thought to specific mechanism-based interventions, psychotherapy appears likely to become increasingly diversified. Nonetheless, the history of psychotherapy provides a valuable lens for understanding the nature of psychological interventions now and in the future.

Vignettes

1. Case of Anna O.
One of the most famous case studies in psychoanalysis was that of Anna O., a young woman who suffered the symptoms of what was termed hysteria in Vienna in 1880. Anna O. had no personal or immediate family history of psychological problems when she began to develop strange and seemingly inexplicable symptoms. These symptoms included numbness and paralysis in her arms and legs, a squint that became worse when she was agitated, blurred and restricted vision, muscle tension and rigidity in her neck, intense headaches located at the front left side of her head, and disturbing visions of black snakes while awake and asleep. Anna’s symptoms began in the first week of December of 1880 after she had taken bed rest for a severe cough accompanied by weakness and loss of appetite. During the months leading up to these health issues, Anna O. served as a nurse and constant attendant to her father, who suffered from tuberculosis that would eventually prove fatal.

Anna’s condition deteriorated over the course of a week, and she began to exhibit several of these symptoms. After multiple doctors could not determine the cause of her symptoms, Anna’s family contacted Josef Breuer, a renowned Austrian physician who had made several important advances in neurophysiology early in his career. Breuer believed that Anna O. suffered from hysteria, the term for any physiological symptoms caused by psychological conflicts. Breuer began treating Anna O. with hypnosis, the leading treatment for hysteria at the time. At first, Anna O. did not respond to this treatment; she would not speak to Breuer (or anyone else) in her normal or hypnotized state. Breuer made a small breakthrough one evening when he asked Anna O. what she was thinking. She responded, stating that she hated her governess. Although Anna O. claimed to have no memory of the conversation after waking from hypnosis, she began to verbally respond to Breuer in her un-hypnotized state. Breuer then hypothesized that Anna’s physical symptoms related to her refusal to discuss her negative thoughts and feelings with others. Breuer continued to hypnotize Anna and to prompt her to talk about her feelings. He applied this treatment systematically, working backwards from the onset of a particular symptom until he discovered the upsetting event that triggered it. Breuer observed that Anna’s physical symptoms would usually become less severe or would disappear entirely after she discussed her emotional reactions to the events that led up to each symptom’s development. Although Anna O. experienced some setbacks during which her symptoms reemerged (namely, her father’s death), she continued to improve under Breuer’s care. Anna O. described Breuer’s treatment as the “talking cure,” a name that continued to be associated with psychoanalysis for many years. Breuer’s work with Anna O.
influenced the practice of psychoanalysis and inspired his colleague, Sigmund Freud, to develop his own version of the “talking cure.”

2. Gloria and the Three Approaches to Psychotherapy Film Series
In 1965, a woman named Gloria appeared in a film series in which she worked with three prominent psychotherapists: Carl Rogers, Frits Perls, and Albert Ellis, each the developer of his own style of psychotherapy (Ellis, 1973; Perls, Hefferline, & Goodman, 1951; Rogers, 1965). Gloria’s problems revolved around her post-divorce dating life and how it impacted her relationship with her nine-year-old daughter.

Gloria first met with Carl Rogers, the founder of client-centered therapy. Rogers made several reflections and restatements as Gloria described how she felt conflicted about whether or not she should be open and honest with her daughter about her dating and sex life. By reflecting Gloria’s feelings and rephrasing her arguments for and against talking honestly to her child, Rogers allowed Gloria to elaborate on her feelings without introducing any of his own opinions about what she should do. Rogers emphasized that he did not have the answer to her problem but that he would work with her to find the answer. Gloria eventually realized that she wanted to become more accepting of her sexual needs and of herself as an imperfect person.

In the second session, Gloria met with Fritz Perls, the founder of Gestalt therapy. Almost immediately, Perls interrupted Gloria and pointed out inconsistencies between what Gloria said verbally and what she showed non-verbally (e.g., smiling when she said she is nervous). Gloria’s concerns about dating and parenting did not come up at all during her session with Perls. Instead, Perls explored Gloria’s self-reported tendency to “go into the corner” when she feels afraid, or when she wants attention from others. Perls used a series of short, direct questions to keep Gloria in the moment and in touch with her emotional reactions. For example, when Gloria started to say that she feels like she did as a child, Perls interrupted her by asking, “Are you a little girl?” until she said “no” and stopped trying to focus on a past experience. Perls intentionally frustrated Gloria by calling her a “phony” for going into her corner instead of directly confronting or approaching the situation.

In the third session, Gloria met with Albert Ellis, the founder of rational-emotive behavior therapy. Gloria started the session by asking why she cannot seem to date the men she is really interested in. Gloria explained that her feelings of shyness and anxiety around the men she is interested in cause her to act “flip” with them and ruin her chances of entering relationships with them. Ellis prompted her to describe her thoughts about this pattern in two simple sentences: an objectively true statement and an irrational interpretation. In her first sentence, Gloria stated that she “missed her chance” with another eligible man. In her second sentence, Gloria stated that she felt like she would never find the right man for her. Ellis explained to Gloria that she was catastrophizing for having such an extreme interpretation of the missed chance. Ellis then helped Gloria reduce the perceived pressure of acting perfectly around eligible men.

At the time the film was made, there was much controversy and competition among the styles of psychotherapy. This film was an effort to showcase the differences in theoretical stance and practical intervention. Gloria faced the option of selecting which of the three psychotherapists she would like to continue to see; she selected Ellis.

3. Marsha Linehan and the birth of DBT
Marsha Linehan, Ph.D.—a clinical psychologist and researcher at the University of Washington—had long kept her personal journey guarded from the public. In 2011, Dr. Linehan finally agreed to
an interview with the New York Times, in part to help decrease stigma associated with mental illness. This interview followed a speaking engagement the week prior at the Institute of Living where Dr. Linehan stated, “So many people have begged me to come forward, and I just thought—well, I have to do this. I owe it to them. I cannot die a coward” (Carey, 2011, p. 4). The significance of discussing her own life journey at the Institute of Living lies in Dr. Linehan’s own battle with mental illness; in fact, she was once treated at that very facility for 26 consecutive months. According to her interview, Dr. Linehan—only 17 years of age at that time—was described to be one of the “most disturbed” patients at the facility (Carey, 2011, p. 21). During her stay at the Institute of Living, physicians diagnosed Dr. Linehan with Schizophrenia, prescribed to her strong antipsychotics, forced her to undergo hours of psychoanalysis, and even treated her with electroconvulsive (shock) therapy.

Dr. Linehan described her experience as “[being] in Hell” (Carey, 2011, p. 28). She spent a portion of her time in total isolation as a means of protecting her from her own self-harming behaviors such as cutting her wrists, legs, torso, and burning her flesh with cigarettes. Although she inflicted harm on her own body, Dr. Linehan recalls not feeling in control—she would know an episode was approaching but not be able to stop it. After discharging from the Institute of Living, Dr. Linehan made an attempt on her life and then another attempt after moving to Chicago a few years later, which led to further hospitalization. Dr. Linehan, a devout member of the Catholic faith, often prayed in a nearby chapel, and, following her discharge after the latter suicide attempt, she felt a change occur that had never happened before. She states, one night after praying, Dr. Linehan uttered “I love myself” (Carey, 2011, p. 32) which was something she had never felt—a feeling many people have no problem acknowledging. Dr. Linehan recalls this newfound love for herself lasted only a year, and she returned to her old thoughts and negative beliefs when a romantic relationship dissolved.

Dr. Linehan went on to obtain a doctoral degree in clinical psychology from Loyola University in 1971—10 years following her initial hospitalization at the Institute of Living. It was through her training she kept a promise she had made a decade prior; in regard to feeling trapped in Hell, “I made a vow: when I get out, I’m going to come back and get others out of here” (Carey, 2011, p. 28). From that personal vow came Dialectical Behavior Therapy (DBT), intended for those suffering from Borderline Personality Disorder (BPD). BPD is a disorder that is characterized by chronic, pervasive mood dysregulation, self-injurious behavior (e.g., cutting, burning), suicidal ideation, unstable relationships, and overly dramatized expression of emotions. Although never diagnosed with BPD, Dr. Linehan suggested she created DBT to offer the type of help she herself needed many years ago. The love she found for herself that fateful night praying led Dr. Linehan to base DBT on the idea of “radical acceptance,” whereby the therapist and client accept where the client is and what the client does without judgment. For those with BPD, feeling accepted and understood can be very therapeutic and too often is an experience many of them have never had.

Today, DBT is recognized as a very efficacious therapy for BPD (Stoffers et al., 2012). Dr. Linehan, being one of the main researchers to conduct studies on DBT, did so by treating those she called “supersuicidal” with the idea that if it would work for the most severe, it would work for all. And that it did: the American Psychological Association has accepted DBT as an empirically supported treatment (APA, n.d.), indicating research findings suggest it is safe, valid, and efficacious (Stoffers et al., 2012).

Before leaving the Institute of Living the day she publicly spoke of her time there, Dr. Linehan was able to see the tiny room where she had been kept in isolation. She stated, “Well, look at that, they changed the windows. There’s so much more light” (Carey, 2011, p. 59). Dr. Linehan’s own
personal journey has undoubtedly been difficult, and the number of lives saved because of her dedication will validate the promise she made for generations to come.

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History of Child Development
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Twenty-first century understanding of how children think, feel, and processes information at different ages comes from a century of psychological research in addition to the research of other disciplines such as education, philosophy, and sociology. Historically, our perceptions of children have differed dramatically from how we view children today (Cunningham, 2014). This chapter will explore how early philosophers and psychologists thought about child development and how these views influenced the ways in which children were treated.

This chapter will be divided into three sections. First, early perceptions of child development, before psychology was a science, will be examined. Then, this chapter will examine five ground-breaking psychologists at the turn of the 20th century: Sigmund Freud, John Watson, B. F. Skinner, Albert Bandura, and G. Stanley Hall. Lastly, this chapter will detail the mid-20th century psychologies of Jean Piaget, Lev Vygostky, Erik Erikson, and John Bowlby who laid the foundation for the further specialization of developmental psychology into cognitive development and social-emotional development.

Perceptions of Children before Psychology

The scientific study of child development did not emerge until the early 1900’s. Historians have struggled to piece together how children were perceived and their role in society in the ancient past as there was not much written about them across cultures and history (Cunningham, 1995; Stearns, 2006). Heywood (2001) contends little was written about children in the medieval times because they were viewed as “deficient and entirely subordinate to adults [and thus] their stage of life was likely to be of little interest for its own sake” (p. 2). The most popular portrayal of children during the Middle Ages was one promoted by a historian by the name of Aries. He stated that during the 5th-15th century CE, children were viewed as shorter, smaller versions of adults but were not viewed as being fundamentally different in their intellectual or social-emotional capabilities (Aries, 1960). History of psychology and child development textbooks often cite Aries’ portrayal of children during the medieval times; however, contemporary historians believe that Aries’ account is flawed. Psychologists have “an alarming tendency to treat it [Aries’ book] as a ‘historical report’ rather than a highly contentious thesis” (Haywood, 2001, p. 12). Thus, historians of the 21st century largely disregard Aries’ long believed portrait of children during the medieval period (Cunningham, 2005; Heywood, 2001; Stearns, 2011).

If children were not viewed as “little adults” in the medieval times, how were they viewed? Historians suggest that not much is known about the perceptions of children and what children were like during this period. What is known is that most children were expected to work around the home, on the farm, or within a particular trade starting at a very young age and that there was little emphasis on formal education (Cunningham, 2005). Most of the historical documents of this time period center on adult males so the picture of childhood and child development before the 15th century is not well known (Haywood, 2001).

The 18th century, with the defining theories of John Locke and Jean-Jacques Rousseau, introduces the early philosophies of child development (Cunningham, 2005). One of the most important historical and modern day debates within developmental psychology is whether children’s development is influenced more by nature (i.e., now seen as genetic inheritance) or by nurture (i.e., the environment which they were raised; Berger, 2014). Locke and Rousseau represent
contrasting theories. Rousseau’s theory aligns better with the idea of nature being the primary influence on child development. Locke supports the side of nurture stating that children were born as a “blank slate” and that parents and education could mold them to their fullest potential.

In his book, *Some Thoughts Concerning Education*, John Locke argued that the roles of parenting, education, and environment are critical to children’s development. Specifically, he stated that children develop best with individualized education and should be motivated to learn through positive reward and not corporal punishment, which was common during that time period (Cunningham, 2005). Locke emphasized the role of fathers over mothers in child rearing, stating that mother’s affections might harm the child. He stated that fathers should be a constant presence in son’s lives to direct their development (Mendelson, 2010). Moral and intellectual development hinged on the child’s individualized attention from both parents and the school system.

In contrast, Rousseau suggested parents should turn against Locke’s advice to nurture children’s development through formal education as it might further damage the child’s natural born traits (Cunningham, 2005). Rousseau suggested that children should not have formal education until age 12 and that childhood should be spent interacting with nature (Cunningham, 2005). As much as Locke’s theory influenced parents and educators to immerse children in formal education at a young age, Rousseau’s ideas influenced parents and educators to do the opposite (Cunningham, 2005; Mendelson, 2010).

Both Locke and Rousseau were philosophers. While their ideas helped to pave the way for continued research on the influence of nature and nurture on children’s development, they never used scientific methods to test their theories.

The study of children became less philosophical and more scientific during the nineteenth century with the advent of the “Baby Biographers.” Psychologists such as Pestalozzi, Washburn, Shinn, and even Darwin set about to study how children learn and grow by conducting naturalistic observations of their children (Davidson & Benjamin, 1987). The importance of this work lay in the use of the scientific method, but not in the findings. Criticisms of the “Baby Biographers” movement include observer bias (they observed their own children), lack of comparison (each scientists observed a different age child), and lack of generalizability as each biographer only observed one child (Schaffer, 2009). Despite these shortcomings, the influence of the “baby biographers” helped set the precedent for the scientific study of child development.

**Origins of the Psychological Study of Child Development**

Born in 1844, G. Stanley Hall was instrumental in helping to solidify psychology in general and developmental psychology in particular as a serious scientific field of study. In 1892, he helped found the American Psychological Association, served as its first president, and founded the first journal in psychology (Buckley, 1989). Later in his career, Hall popularized the testing techniques of studying children and adolescence which generated an enormous amount of information about children (Davidson & Benjamin, 1987).

Under the guidance of pioneer psychologist Williams James, Hall became the first person to get his Ph.D. in psychology in the United States in 1878. As there were little opportunities for further psychological training in America, Hall moved to Germany to study under Wilhelm Wundt (Buckley, 1989). There he learned systematic introspection, the primary experimental method of the time. He also became interested in the school system. He admired the *Child Questionnaires* developed by Bartholomai in 1870 and took this method of study back to America in 1882 (Davidson & Benjamin,
Hall’s research started an entire program of research on the scientific study of children called the “Child Study Movement.” During the Child Study Movement, 194 questionnaires on child development were created, and the data collected from those questionnaires were published in nine different books on child and adolescent development and education published between 1904 and 1911 (Davidson & Benjamin, 1987).

There were three primary goals of the Child Study Movement. The first was to help to improve the education system in America. The second goal of the movement was to help solidify the study of children’s development and education as a science. This goal was achieved through the development of a half a dozen journals of education and child development as well as the proliferation of research that came out of this movement (Smuts, 2006). Lastly, the child study movement aimed to establish norms for children’s development including their physical, cognitive, social, and religious development (Davidson & Benjamin, 1987). It should be noted that while the Child Study Movement was instrumental in securing the popularity of developmental psychology, the actual research has been met with a mixture of criticism and accolades (Davidson & Benjamin, 1987). The main criticism was that many of the measures used to collect the data were flawed, thereby producing less than valid or reliable results. However, Hall’s two volume book entitled Adolescence (1904) contains the foundation for many of the principals developmental psychologists still use to define adolescence (Arnett, 2006).

At the same time of Hall’s work at Clark University, Sigmund Freud’s psychoanalytic theory was gaining popularity in Europe. G. Stanley Hall understood the influence of Freud on the burgeoning field of psychology and thus sponsored his one and only trip to America in 1909.

Psychoanalysis and Sigmund Freud

Sigmund Freud’s influence touched all the pioneering developmental psychologists including G. Stanley Hall, John Watson, Erik Erikson, and John Bowlby. A common question about Freud is whether he was a “sex obsessed fanatic, a dabbler in dreams encouraging the garrulities of the mentally disturbed, or whether his admirers were right in hailing him as a brilliant discoverer of a new world of psychology?”(Westen, 1998, p. 3).

Freud was born in 1856. He received his doctorate degree in medicine in 1881 but gained training as a clinician working in a hospital for “hysterical” patients. Freud developed his theory of psychoanalysis over ten years of seeing patients and published his first influential book, Interpretation of Dreams, in 1899.

Freud popularized the idea that parents had a critical role in children’s development and that unresolved issues in childhood had a large impact on the developing personality. Freud’s explanation of exactly how parents influence their child’s development through helping their child navigate natural sexual and aggressive urges is a theory that has been met with mixed support in more recent times (Friedman, 2000). While his psycho-sexual stages, including the Oedipus complex, are largely considered to be archaic and obsolete, his influence on 20th century psychologists studying child development is undeniable (Westin, 1998).

Behaviorism

The most popular branch of psychology during the early to mid-20th century was Behaviorism. Developmental psychology was heavily influenced by the research of behaviorists John Watson, B. F Skinner, and Albert Bandura. John Watson was born in 1878 in South Carolina. His mother
wanted him to become a Baptist preacher. He put himself through college by living at home and working as a research assistant in a chemistry lab. Late night cramming sessions were fortified by quarts of cocaine infused Coca Cola syrup (at this time, Coca Cola contained cocaine; Buckley, 1989). Despite later becoming a college professor, Watson did not have much use for college. He stated that college resulted in sloth and delaying of adulthood. At the age of 22, Watson started graduate school at the University of Chicago under the study of John Dewey and Jacques Loeb. Psychology had only been a scientific discipline for a short time, and it remained largely influenced by a more philosophical orientation (Buckley, 1978).

Watson presented himself as a confident and self-assured man but struggled with insecurities and anxiety (Buckley, 1978). In childhood, he was happiest on the farm working where he could forget his anxiety. In graduate school, he worked tirelessly to the point of having a mental break. “His obsession with achievement reflected deep anxieties about failure and success” (Buckley, 1978, 43). Ultimately, Watson dealt with his anxious nature by channeling all of his energy into his career.

Watson departed dramatically from popular branches of psychology at the time, Voluntarism, Structuralism, and Functionalism. He postulated that one can only know what another person is thinking by examining his or her behavior not by examining his or her thoughts or emotions. While both Freud and Watson agreed that emotions should regulated, Watson disparaged Freud’s use of psychoanalysis to control emotions. Emotions, he stated, were simply reactions to events, and to change emotions one had to change the environment. To this end, in 1916 Watson conducted a series of experiments to show he could control the development of basic emotions such as fear, rage, and love in infants (Buckley, 1978). His most famous experiment involved the manipulation of fear in a 9-month-old baby named Little Albert. Watson placed a neutral stimulus in Little Albert’s lap, a white rat, and then hit an iron bar behind Albert’s head with a hammer to create a loud disturbing noise. This noise created fear in Albert. After only a few pairings of the rat with the loud noise, Watson had successfully conditioned Little Albert to fear (and cry at) the sight of the rat because Albert anticipated the loud noise (See Vignette 1 for an ethical examination of this study).

Despite major methodological flaws in this study (e.g. a sample size of one, lack of follow-up, and observer bias), this experiment has become one of the most widely cited studies in introduction to psychology textbooks (Harris, 1979).

In 1928, Watson published a summary of his work and beliefs on child development in his book entitled The Psychological Care of Infant and Child. Similar to Freud’s beliefs, Watson felt that emotional trauma was a result of parent’s poor choices. He particularly admonished mother’s demonstrations of affection for their children (Buckley, 1978). To properly raise a child, he stated, one should never kiss or hug him or her. Watson dreamed of a “baby farm” where child rearing would be under laboratory control. To help control the attachments and emotions of children, he suggested children not know the identity of their parents but instead be rotated among neighbors every four weeks until the age of 20 (Buckley, 1978).

For a man who was obsessed with controlling emotions, it is ironic that his academic career ended in scandal when he could not control his own emotions and fell in love with his graduate assistant. Johns Hopkins University forced Watson to resign when this scandal became public, and, at the age of 44, his academic career was over.

Another prominent behavioral psychologist who applied his research to the study and care of children was B. F. Skinner. Born in 1909, Skinner became a psychologist after having been inspired by the works of Watson and Pavlov. During his graduate studies at Harvard, he conducted many experiments that resulted in his first book, The Behavior of Organisms (1938). Skinner, known for
his widespread research on operant conditioning, was ranked most eminent psychologist of all time in 2002 (Hagggloom et al., 2002). While the vast amount of research on operant conditioning has occurred with animals, this theory has also been used to explain how infants, children, and adults learn (Gewirtz & Pelaez-Nogueras, 1992). Operant conditioning is especially useful to parents and teachers who want to modify children’s behavior.

Many traditional developmental psychologists draw a distinction between development and learning as defined by classical and operant conditioning (Gewirtz & Pelaez-Nogueras, 1992). Specifically, development is defined “broad and spontaneous occurring over relatively long time segments” (Gewirtz & Pelaez-Nogueras, 1992, p. 1416). In contrast, learning with classical conditioning and operant conditioning is narrow in focus and contingent to specific stimuli and situations.

Albert Bandura’s social learning theory expanded Skinner’s theory of operant conditioning. Bandura stated that one did not have to be rewarded or punished to influence behavior, the central tenant of operant conditioning. Instead, a participant could merely observe someone else being rewarded or punished and the observation could modify the participants’ behavior (Bandura, 1977). Bandura was born in 1925 in Canada. He earned his bachelor’s degree in psychology in 1949 and his Ph.D. in clinical psychology in 1952. He began his program of research examining the development of aggression in children. In the 1950’s, Freudian theory influenced the belief that children’s aggression was influenced by innate aggressive drives and that violence on television was an effective catharsis for children to help drain their aggressive drives (Grusec, 199). In 1961, Bandura conducted the now famous Bobo doll experiment in which he showed that watching violent and aggressive television caused children to exhibit similar levels and forms of aggression (Bandura, Ross & Ross, 1961). Bandura further fleshed out his learning theory to suggest that children’s behavior is influenced through both operant conditioning (as originally suggested by Skinner) and modeling. Bandura’s theory has become fully acculturated into 21st century understanding of how children learn and influences parenting decisions, education, media, and child developmental research (e.g. O’Connor & Scott, 2007).

Watson, Skinner, and Bandura were all behavioral psychologists whose research placed emphasis on explaining behavioral change via stimuli and learning environments. They did not place emphasis on the examination of how mental processes influenced behavioral change. While behaviorism dominated the study of child development during the early part of the 20th century, Piaget and Vygotsky helped to dramatically broaden the focus of developmental research.

Origins of Cognitive Developmental Psychology

Piaget and Vygotsky both developed global theories of children’s cognitive development that explored how children’s mental processes of thinking, reasoning, memory and language developed. In many ways, they lived parallel lives despite being separated by thousands of miles (Pass, 2004). Both were born in 1896 in small towns. Piaget was born and lived in Neuchatel, Switzerland and Vygotsky in Orsha, Russia. Both had very difficult childhoods which would later impact their cognitive developmental theories. In addition, both were considered child prodigies, and both published their first article by the age of 10. Amazingly, they both married within a year of each other and had three children each, who were born in 1924, 1927, and 1931. While Vygotsky read and was influenced by Piaget’s works, Piaget was not privy to Vygotsky’s works as Vygotsky lived under a communist regime that limited communication with Western countries (Pass, 2004).

Through Piaget’s early work, helping administer testing to elementary age children, he noticed that not only were children’s answers different depending on their age but the ways in which they
arrived at the answers were fundamentally different. This led him to the idea that children think
and reason differently depending on their biological ages (Cohen, 1983). Through the careful
detailed observation of his own three children, Piaget developed his basic theory of cognitive
development which states that children progress biologically through four discrete stages of
cognitive development: sensory-motor (0-24 months), preoperational (2-7-year-olds), concrete
operational (7-11-year-olds), and formal operational (12-adult). Every stage of children’s cognitive
development is structured and organized in a unique and fundamentally different manner from
every other stage (Piaget & Inhelder, 1969). Students learn in accordance to the stage they are in.
This idea revolutionized the way children were taught and parented.

When Piaget first introduced his four-stage theory of children’s cognitive development in the 1920,
it was not widely accepted. However by the mid 1950’s, Piaget’s Theory “seemed literally to take
over the whole of developmental psychology for a period” (Cohen, 1983, p. 5). From the 1950-
1980, Piaget’s cognitive developmental theory inspired over 2,000 experiments. His influence even
spread to areas of children’s development which he never studied. Cohen (1983) argued that
Piaget received such a large degree of notoriety during his lifetime because his theory was so
global, encompassing many different areas of children’s development.

Piaget’s work also inspired Vygotsky’s theory of cognitive development. Piaget felt that
development leads learning. Simply put, children cannot learn above their biological stage. In
contrast, Vygotsky felt that that a child’s “learning leads development” (Bordrova & Leong, 2006, p.
13). Meaning that children’s cognitive abilities are not restricted by their biological maturation. He
stated that children’s cognitive growth relies on what and how they learn. Specifically, he found
children learn best when their learning is scaffolded by a more competent peer or teacher. He
advocated that teachers should assess each child’s ability level (e.g. zone of proximal development)
and then teach to that specific level (Vygotsky, 1978).

Vygotsky’s socio-cultural approach stresses the importance of social and cultural interactions on
children’s cognitive development. He felt that one could not study a child’s cognitive development
in isolation because learning occurs through social interaction. He believed that culture provides
young children with “tools” for higher mental functions such as voluntary attention, voluntary
perception, and complex memory skills (Bordrova & Leong, 2006). He also stressed the importance
of language in the development of children’s cognition. According to Vygotsky, a prelingual child’s
cognitive capabilities are no more complex and sophisticated than that of a chimpanzee. It was not
until the child learned how to use “signs” (e.g., words) that their cognitive capabilities surpassed
those of animals (Vygotsky, 1978).

In contrast to Piaget’s widespread notoriety, Vygotsky’s works were relatively unknown to
European and American psychologists during his lifetime. His obscurity was probably due to the
fact that his works were not translated into English until the 1960’s and 70’s. In fact, his
sociocultural theory has only become popular in the last thirty years (Pass, 2004).

Vygotsky died at the young age of 39 and worked in the field of psychology for only 10 years;
however, during this time he still managed to write almost a dozen books and over a hundred
articles and lectures in the area of children’s development. Despite his delayed recognition,
Vygotsky is renowned as a pioneer in developmental psychology. Vygotsky was one of the first
psychologists to systematically stress the importance of parents, teachers, peers, and others in
helping children acquire the necessary knowledge and skills that are valued by that child’s culture
(Pass, 2004).
Piaget and Vygotsky were instrumental in initiating the study of cognitive development in children; however, their global theories did not address the social and emotional aspects of children’s development. There are a number of pioneering psychologists in the areas of social emotional development and this chapter will highlight three of them: Freud, Erikson, and Bowlby.

Origins of Social-Emotional Development

Freud’s theory of psychoanalysis influenced the beliefs of psychologists Erik Erikson and John Bowlby; both Erikson and Bowlby started their careers as psychoanalysts. Psychoanalysis influenced their clinical practice and perceptions of child development early in their careers. However, both psychologists felt that children were influenced by far more than the psychosexual stages outlined by Freud (Friedman, 2000; Van der Horst, 2011).

Erik Erikson, originally named Erik Salomonsen, was born in 1902 in Germany and was formally trained as a child analyst in 1927. Erikson was a student, patient, and employee of Anna Freud. His journey to separate himself from his initial psychoanalytical training and to further formulate his identity theory and identity took thirty years and a move to America (Friedman, 2000).

Erikson’s wife, Joan, was instrumental in Erikson’s career as she convinced him to leave Vienna for America (Friedman, 2000). Erik and his family got out of Europe at the last possible moment before World War II, the same year that the Nazis in Vienna burned Freud’s books. Despite never graduating from college, Erikson went on to teach at a number of universities. Students may have enjoyed his classes as they involved little assigned reading, few writing assignments, and no syllabus (Friedman, 2000).

Freud felt that one’s personality was formed by age five and that adulthood difficulties related to unresolved issues within the psychosexual stages. In contrast, Erikson felt that development was a lifelong process and that struggles in adulthood related more to periods of an “identity crisis.” An identity crisis was the temporary absence of knowing who one is and where one belongs in life. He believed that this type of crisis most often occurs in adolescence but can also occur in other periods. His most famous book, Childhood and Society, which outlined his theory of psycho-social development, was published in 1950 but did not achieve acclaim until much decade later (Friedman, 2000).

Despite a Pulitzer Prize and widespread notoriety in the field of psychology, Erikson’s critics felt his work had drawbacks similar to Freud’s theory. Specifically, both Erikson and Freud developed theories that did not lend themselves to empirical testing, tended to operate in vast generalizations, and did not tease apart potentially correlational relationships from causal relationships (Friedman, 2000).

Another influential psychologist in the area of social and emotional development, John Bowlby, was born five years after Erikson. Bowlby was raised by nannies in an upper middle class home in London. He saw his mother only an hour a day and his father only on Sundays. His loving nanny, Minny, took care of him until she suddenly left when Bowlby was four. At the age of 11, he was sent to boarding school. These dramatic separations in childhood may have influenced his own theory on how separation influenced children’s attachment (van der Horst, 2011).

In 1929, after graduation from the University of Cambridge, Bowlby sought formal psychoanalytic training in the British Psychoanalytic society. He began work as a psychoanalyst, but his beliefs quickly strayed from his psychoanalytic training. Popular psychoanalytic theory at the time stated that children’s difficulties stemmed from their fantasies around their libidinal and aggressive drives (van der Horst, 2011). In contrast, Bowlby felt that children’s disturbances stemmed from family
experiences and maternal deprivation (Bretherton, 1996; Steele, 2010). Bowlby’s theory gained mainstream attention with his book entitled Maternal Care and Mental Health published in 1951. It initially sold 400,000 copies and purported that for children to be mentally healthy, they needed to have the continuous loving care and support of their mother or another substitute parental figure. Attachment theory continues to be a driving force in both clinical psychology and developmental psychology.

**21st Century Developmental Psychology**

Over a hundred years has passed since G. Stanley Hall founded the first child development journal. How has the field of developmental psychology evolved? There are a few similarities and some fundamental differences between the study of developmental psychology today and that of a hundred years ago. One similarity is the differentiation of developmental research into the sub-areas of cognitive, social-emotional, and physical development. It took the first 50 years to establish this differentiation of sub-specialties within developmental psychology, but those sub-areas of development continue today.

Another similarity is the continued research on the importance of culture on development. Both Erikson and Vygotsky had originally emphasized the importance of culture on child development. Today, Bronfenbrenner’s ecological systems theory outlines how children’s development is influenced by varying environmental and cultural influences such as the family, school, religion, and cultural mores (Bronfenbrenner & Morris, 2006).

Pioneering psychologists debated whether development was influenced by nature (as Piaget suspected) or nurture (as the behaviorists and Vygotsky suspected). In recent decades, developmental psychologists have come to see all aspects of development involving complex interactions between nature and nurture (Gottlieb, 2007; Meaney, 2010). A new sub-field of genetics called epigenetics explores how environment influences genetic expression. This exciting field will continue to further tease out how nature and nurture interact to influence developing behavior (Berger, 2014).

Lastly, a fundamental difference between developmental psychology of today and that of the distant past is the view of development as a continuous process of growth and change in contrast to the discrete stages of development defined by Freud, Erikson, and Piaget (Berger, 2014). While the developmental stages of Piaget and Erikson are helpful in guiding developmentally appropriate practice, research has shown that these stages are not finite, unidirectional, or universal.

In conclusion, the field of child development has advanced significantly in the last 100 years. However, with continued technological advances in brain imaging, genetics, and advanced statistical models, the field will continue to grow.

**Vignettes**

1. **History of Ethical Guidelines for Research with Children**

Informed consent is one of the most important tenants of conducting ethical research. The term consent when used in research means the participant is agreeing to be a part of the research study. Informed consent is understanding exactly what is involved in participation in the study, particularly the risks and benefits of participation before agreeing to be a part of the study. Children are a uniquely vulnerable population of participants in research because of their potential inability to grasp the short and long term consequences of what is being asked of them during informed consent. Starting in the late 20th century, scientists began to recognize the vulnerability
of children and their need for extra protections against unethical research. This vignette will outline the history of ethical guidelines with children and how that lead to modern ethical standards.

**Self-Regulated Ethical Guidelines**

Up until the second half of the twentieth century, there were no imposed ethical guidelines for conducting research with children (or for conducting research in general). Researchers had to be self-regulated in determining the ethicality of their research. Much of the earliest research done with children involved the “baby biographers” such as Darwin, Baldwin, and later Piaget and Vygotsky. Although there is no formal documentation, it could be argued that these researchers treated their research participants very well because the participants were their own children, even if this relationship limited options for informed consent and raised confidentiality issues.

In the 1920’s and 30’s, research involving children suffered from criticisms that their work lacked scientific rigor. As a result, many researchers over compensated by using investigative methods with children in highly controlled sterile environments away from potential confounding variables. It was during this period that there was less focus on the individual rights of people in lower socioeconomic classes. In the research that Prochner (1996) reviewed from this period (the 1920’s and 30’s), there was no mention of any attempt to gain consent (informed or otherwise) from the children who participated in research or from their parents or guardians. “Instead, participation as arranged through private arrangement between researchers and whoever was responsible for the welfare of the children; for example, parents, hospital officials, and social service workers” (Prochner, 1996, p. 106). These transactions were not documented, unlike the mandatory written informed consent that is required today. Thus, these arrangements “replay a hidden aspect of the investigative practices of the 1930’s.” (Procher, 1996, p. 106). Equally ambiguous was if Little Albert’s mother gave consent, let alone informed consent, for her baby to participate in John Watson’s historically infamous classical conditioning experiment in which Little Albert was conditioned to fear rats, rabbits, and a variety of other fury pets and objects (Powell, Digdon, MacEwan & Smithson, 2014).

Little Albert participated in Watson’s research from 8 months to 12 months (Beck, Levinson, & Irons, 2009). Watson himself admitted feeling some qualms about how Little Albert would be treated in his study. He stated “At first there was considerable hesitation upon our part in making the attempt to set up fear reactions experimentally. A certain responsibility attaches to such a procedure” (Watson & Rayner, 1920, p. 3). After eliciting fear in Little Albert, which was evident by screaming and crying, Watson stated, “In order to not disturb the child too seriously no further tests were given for one week” (Watson & Raynor, 1920, p. 4). Despite these reservations, Watson continued with the study and made no attempt to recondition Little Albert to no longer be afraid of white rats. Buckley (1989) notes that “In fact, he speculated with some amusement that if little Albert developed a phobia to fur coats later in life, some psychiatrist would be sure to attempt to find some sexual basis for the fear” (p. 122). Despite much speculation, not much is known about the long term consequences of Watson’s conditioning on Little Albert. Some speculate that Little Albert is actually Albert Barger Martin who did indeed have a lifelong aversion of dogs (Powell et al., 2014).

**The Nuremberg Trials and the Declaration of Helsinki**

A turning point in the creation of ethical standards for both children and adults was the Nuremberg Trials, which took place after the Second World War. The Nuremberg Trials were a series of trials after WWII that helped bring to light many of the atrocious, unethical, and inhumane Nazi led
experiments on humans. Many of these experiments were conducted for the benefits of the Aryan community at the expense of adults and children who were considered inferior. For example, Dr. Josef Mengele conducted experiments on 1,500 sets of twins (taken from concentration camps) to see if he could learn how the superior race could be multiplied faster than the typical natural rate via having twin births. His investigations were often torturous and resulted in many deaths.

As a result of the Nuremberg Trials, it was decided that scientists could not be trusted to regulate their own research activities. Muller-Hill (1992), writing about Nazi experimentation, stated, “The attempt of science to provide acceptable values and ethics has failed. Medicine and science should never again be trusted when they promise to deliver their own ethical values. These values have to come from other sources” (p. 48). The Nuremberg Code was created in 1949 to set up certain moral, ethical, and legal principles relating to research involving humans. This code included such important and basic ethical codes such as: voluntary consent for research participation, the need to ensure that research benefits society, and that unnecessary physical and mental suffering should be avoided.

Fifteen years after the publication of the Nuremberg Code, the Declaration of Helsinki outlined more detailed research protocols to be used with human participants. This code both elaborated and clarified the issues of children as research subjects in relation to informed consent. Specifically, researchers need signed informed consent of a child’s parent or legal guardian and signed consent from a child over the age of seven or verbal assent from a child under the age of seven.

Present Day Ethical Standards for Research with Children
Society for Research in Child Development (SRCD) was founded in 1933 and developed out of the Committee on Child Development. In 1927, there were only 425 scientists who were listed in the Directory of Research in Child Development. Today, SRCD has over 5,500 members from 50 different countries. Thirty years after its conception, SRCD set forth a series of detailed ethical standards that must be used for research with children. The SRCD standards are based on 16 principles, and for a study to be approved by a university IRB, the study must meet all of these principles. In order for children to be able to participate in research, their parent must sign a consent form, the child must give verbal assent (if under age 7) or written consent (if over 7), and school or childcare center must give consent. Also, of particular concern for conducting research with children is not to make the incentive so large that it would unduly influence the child. In addition, the principle of no harm states that children cannot be exposed to anything in a study that would be more harmful than what they would normally experience. To that end, Watson’s Little Albert study would never be deemed ethical and be allowed to take place today.

2. “Proper” Education of Women: Views by John Watson and G. Stanley Hall
The proceeding chapter described the historical contributions of John Watson, G. Stanley Hall and others to the field of Developmental Psychology. While their pioneering contributions to the field have endured, their views regarding women’s education have become quite outdated.

G. Stanley Hall and John Watson, both born in the 19th century, shared beliefs about women’s education that reflected the cultural mores of their era (Heywood, 2001). Both felt that if women were to be educated at all, they should learn the art of domesticity. Watson stated that women’s education should focus on the use of cosmetics, staying thin, being a good hostess, and sexual techniques to please their husband, in addition to the care and handling of children (Buckley, 1989). Watson stated, “the jobs of keeping themselves young and beautiful, useful, and in learning about home science gives [women] all the activity they need” (Watson’s “Behaviorist’s Utopia” as cited in Buckley, 1989, p. 164). Similarly, G. Stanley Hall stressed the importance of women’s
education to focus on proper hygiene, exercise, nutrition, and motherhood (Diehl, 1986). Hall stated, “Dress and toilet should be almost raised to fine arts and objects of constant suggestion” (Hall, 1908, as cited in Schofer, 1978, p. 197). Thus, Watson and Hall stressed that women’s education should primarily if not solely to be used to train women to become better wives and mothers.

Hall’s belief in “proper” education for women stemmed from his belief that women’s roles were to marry and bear as many children as possible. He states, “to a man wedlock is an incident, but for women it is destiny” (Schofer, 1976, p. 197). Thus, women should be trained for motherhood and their intellectual pursuits should be subverted (Schofer, 1976).

What if women wanted a more scholarly education? Hall felt that this sort of education could have dire consequences for women. G. Stanley Hall famously asserted that women’s reproductive organs would suffer if women were educated (Diehl, 1986; Schofer, 1976). Intellectual pursuits during puberty were expected to stunt the development of women’s reproductive organs and inhibit women’s desire to have children. As a scientist, Hall aimed to tested his theory by creating and administer a survey to college educated women about their reproductive health. His survey found no relationship between the education of women and their reproductive health. However, Hall dismissed his findings, asserting that women must have lied on the survey (Diehl, 1986).

Hall’s believed that women were best suited for motherhood and should be directed and educated to that above all else. This belief led him to initiate a war on the co-education of women. During the early 1900’s, 98% of women were educated with men in public schools (Diehl, 1986). Hall, however, led a campaign to separate women and men’s education. He felt the sexes should not be educated together as women should only receive education in the area of domesticity. In addition, co-education would lead women to have lower reproductive capability and men to find women less attractive. Ironically, Hall educated many women in his college courses, including the doctoral program in psychology at Clark University, and he had numerous female research assistants (Diehl, 1986).

No one felt that women needed proper education on mothering and domestic life more than John Watson. Left to their own devices, women’s natural instincts led them to “destroying the happiness of their children” (Watson’s “Behavioral Utopia” as cited in Buckley, 1989, p. 162). Watson felt that women’s affection and outward displays of love for their children were highly destructive (Buckley, 1989). Instead, Watson suggested to mothers in his book Psychological Care of the Infant and Child, that they “Never hug and kiss them, never let them sit on your lap...Give them a pat on the head if they have made an extraordinarily good job” (Watson & Watson, 1928, p. 81). Watson felt that education should involve the classical conditioning of traits and that any affection (maternal or otherwise) would “ruin” children’s training.

Both Hall and Watson felt that women were biologically predisposed to be mothers and that motherhood was their natural role in life. Ironically, both men felt that women needed proper education on how to be good wives and mothers. Almost a century later, almost all of these ideas have largely been dismissed by both psychologists and society at large.

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A Selected History of Statistical Practice

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Opinions vary about the value of statistics. Here’s a selection from the last paragraph of a 1901 article in the Atlantic Monthly:

...statistics are the first resort of the ill-informed. They may be of use in the concrete but there is little beauty in them, and with due respect to the public, the World Almanac is not the highest achievement in American literature... It was delightful unmathematical, unstatistical blood which did most worth doing of that which has been done. The Greeks attained to passable prominence without the trail of Arabic notation smeared across their national life or sullying conversation in Academe. The Elizabethans did much without referring to the decimal system. And Genesis was written before Numbers (White, 1901, p. 844).

At the other end of the distribution, from 1889, we have:

Some people hate the very name of statistics, but I find them full of beauty and interest... Their power of dealing with complicated phenomena is extraordinary. They are the only tools by which an opening can be cut through the formidable thicket of difficulties that bars the path of those who pursue the Science of Man (Galton, 1889, p. 63).

As it turned out, 20th century investigators bought into Galton’s idea that statistics is a powerful technique for dealing with complicated phenomena. Statistics developed and was embraced because its techniques produced better understanding, regardless of the investigator’s field of interest. Many disciplines and business operations contributed.

This chapter recounts a progression of changes in statistics during the past two hundred years. The changes provided solutions to limitations of that day’s statistical techniques. Today, about one-fifth of the way into the 21st century, more change is on the horizon. These changes are quite apparent to those who study statistics and who recommend how they should be applied.

Early 19th Century

Numbers (0 – 9), commonly known as Arabic or Hindu-Arabic numerals, are the foundational elements of statistics. Invented in India before the 7th century CE, they spread westward to Arabic countries in the Middle East and North Africa. From there they were adopted in Europe by the 12th century CE (West, Griesbach, Taylor, & Taylor, 1982).

By 1834 there was enough interest in statistics in England for a group to found the Royal Statistical Society (Charter of the Royal Statistical Society, 1887). Early issues of their journal recount statistics on education, crime, and other social topics. In America in 1839, a group in Boston founded the American Statistical Society. Just three months later they renamed themselves the American Statistical Association (ASA), which continues today (Mason, McKenzie, & Ruberg, 1990). The statistical reports from the early 19th century would today be classified as descriptive statistics. Descriptive statistics endeavor to convey characteristics about a sample or population without any use of probability. Probability was well established in mathematics, but useful applications to statistics would come later in the century.

Adolphe Quetelet (1796-1874) was a Belgian astronomer of considerable fame and influence. (A passable English pronunciation is Kate‘-ul) Quetelet established and directed the Royal Observatory
in Brussels. Familiar with the Gaussian Law of Error, which predicts astronomical observations (today’s normal distribution), Quetelet was the first to recognize that human and social data (such as heights and crime reports) mirror an approximately normal distribution (Boring, 1929). Thus, proportions associated with the normal curve could be used to predict the incidence of human and social phenomena.

Central Limit Theorem

By the latter half of the 19th century, researchers were finding the probability that a sample mean come from a population with a known mean. The probability figure came from the normal distribution, which was appropriate because of the central limit theorem (CLT). The CLT says that for any population of scores, regardless of their form, the distribution of means of randomly drawn samples will approach a normal curve as the sample size increases (Miles, 2005).

The most remarkable feature of the CLT is that it works regardless of the form of the original distribution of scores. The most serious concern that comes with the CLT is the question of how large a sample size must be. Nineteenth century researchers in all fields addressed this concern by using very large samples, often involving hundreds or thousands of observations. Another requirement of the CLT, hidden in the phrase randomly drawn samples, is that the samples must be independent of each other (not correlated). Of course, for many interesting questions, data are scarce and sometimes correlated. In such situations, some statisticians recognized that the CLT did not apply and probability figures obtained from the normal distribution were not trustworthy.

Francis Galton (1822-1911)

For Sir Francis Galton, one label won’t do. Wikipedia uses 13, which range from anthropologist to tropical explorer and include psychologist and statistician. This overview will cover just one of his statistical contributions in use by many disciplines today: correlation.

Galton was enchanted with counting. He felt strongly that quantifying was the best path to better understanding of a phenomenon. But once the measurements were in, what to do with them? For example, he lamented the near universal attention to the mean:

> It is difficult to understand why statisticians commonly limit their inquiries to Averages, and do not revel in more comprehensive views. Their souls seem as dull to the charm of variety as that of the native of one of our flat English counties, whose retrospect of Switzerland was that, if its mountains could be thrown into its lakes, two nuisances would be got rid of at once (Galton, 1889, p. 62).

To remedy these deficiencies, Galton set about devising new methods. In particular, he wanted better ways to measure relationships among data sets. He complained that data sets were “entangled.” The statistic that emerged from his effort to describe the co-relation between two variables was the predecessor to today’s correlation coefficient. To examine what he called co-relation, Galton studied English scientists using the questionnaire method, which he gets credit for inventing. Early on, he listed head size down the first column of a sheet of paper and weight across the top row, creating what today is called a scatterplot. Galton could see that as head size got larger, weight increased. But how to convert the data into a statistic that described the relationship? Galton was a fair mathematician so he converted the raw scores in each distribution to standardized scores but failed to derive today’s product-moment correlation coefficient. That task fell to his protégé, Karl Pearson.
If we ask what Galton wanted to accomplish with all his quantitative endeavors, the answer was that he wanted to improve the human condition by improving humans themselves. The first task though was to understand the forces that shaped humans and for Galton, the primary force was evolution. He was particularly interested in investigating the emerging field of genetics (Galton, 1901). Around the turn of the century, the feeling of progress for humankind was in the air, especially among intellectuals.

For most of the rest of this chapter, you might think of Galton as standing at the head of a long line of people who developed statistical techniques. The connections between those standing side by side were personal as well as academic. They knew each other, mentored each other, and argued, insulted, and supported each other. The result was statistics, the dominant way to investigate phenomena in the 20th century and beyond.

**Karl Pearson (1857-1936)**

Karl Pearson was 35 years younger than Francis Galton, who had no children. If you think of their relationship as father-son, you won’t be far wrong. For example, Pearson published at his own expense a 3-volume biography of Galton after his death (Pearson, 1914, 1924, 1930a, 1930b).

Based on Galton’s start, Pearson derived a better correlation formula, the product-moment correlation coefficient, and published it in 1896. It is widely used. Probably every discipline that uses quantitative data has correlation coefficients scattered in its literature. A correlation coefficient tells readers not only whether or not there is a relationship between two variables but also whether the relationship is positive or negative AND the strength of the relationship.

In 1900 Pearson published the chi square statistic, a technique that is also widely used in many disciplines. Pearson first used chi square as a goodness-of-fit test to determine the degree that observed data fit predictions from a theory. Often, the theory was that data from a population were normally distributed. A chi square test gives the probability that the observed data are consistent with those predicted by a normal curve. If the probability is very small, it is easy to conclude that the theory should be rejected. If the test produces a large probability, it means the data are consistent with what the theory predicts. Unfortunately, Pearson often interpreted large probabilities as evidence that the theory was correct. Of course, it is a logical fallacy to declare a theory is true just because it has not been contradicted. Later, Pearson used the chi square test to determine whether two variables were related, an application that is today’s chi square test of independence.

In 1901, Pearson and W. R. F. Weldon, a geneticist, founded the journal, Biometrika with financing from Galton. They established the journal because the Royal Society of London, the principal scientific society in Great Britain, would not publish biology papers that contained statistics. Biometrika (bio and metric), in contrast, promoted the marriage of the two fields (Galton, 1901). Early issues of Biometrika report the relationship in flowers of petal length and sepal length (r = about .25) and the goodness of fit of the cephalic index of 900 modern Bavarian peasants to a normal curve (good fit).

**William S. Gosset (Student) (1876 -1937)**

William Sealy Gosset studied chemistry and mathematics at Oxford University, graduating in 1899. He went to work for Arthur Guinness, Son, & Co., where he gathered data about the brewing process and made recommendations (Biography 12.1: William S. Gosset). Gosset’s samples
were small, and his measures often correlated with the next measure taken in a sequence. Thus, the central limit theorem could not be relied on for accurate probabilities (Salsburg, 2001).

Gosset met Karl Pearson in 1905 and then spent the academic year 1906-07 with him in London, working to find a statistic that would be accurate for small, correlated samples. The result was the t test, which he published in 1908 under the pseudonym, Student. The pseudonym was necessary because the Guinness Company had a rule that their employees could not publish their discoveries (Salsbury, 2001). (The rule at Guinness seemed to be, “Publish AND perish.”) Gosset’s biggest contribution was to derive a new curve of probabilities, today called the t distribution. Gosset originally labeled the distribution z (Student, 1908). The t distribution is a family of distributions that differ according to their degrees of freedom.

**Ronald A. Fisher (1890-1962)**

Sir Ronald Almyer Fisher (who was knighted in 1952) has been referred to as the father of modern statistics. He was a one-in-a-billion scientist whose brilliant work in genetics has been overshadowed by his revolutionary presence in statistics. In genetics, Fisher was responsible for showing that Mendelian inheritance was not in conflict with evolution by natural selection (Yates, 1981). (For several years after 1900, genetics and evolution were considered incompatible.) Fisher also showed that natural selection is primarily a within-species phenomenon and that sexual selection of mates is a powerful force in evolution (Edwards, 2005).

In statistics, Fisher revolutionized the way we analyze data from experiments with a technique called analysis of variance (ANOVA). Student’s t test permitted comparisons of two levels of one independent variable for small or large samples. ANOVA provided a technique for assessing the effect of more than two levels of an independent variable and for more than one independent variable. Interactions among variables are common in nature, and ANOVA provided a quantitative way to measure them with a factorial design. ANOVA also delivered a way to test the significance of correlated levels of an independent variable. Finally, analysis of covariance (ANCOVA) provided a way for researchers to remove the effects of an unwanted variable from the data analysis. It is not too strong to say that Fisher’s approach to statistics profoundly affected every discipline that analyzes quantitative data.

A complete understanding of a difference between means can never be based only on the absolute size of the difference; the variability of the scores that produce the means must be taken into account. This principle is particularly clear in Student’s t test formula, which is a difference between means divided by the standard error of the mean, which is a pooled measure of the variability of the scores. Fisher recognized that both numerator and denominator of the t test were expressions of variability. The formula for ANOVA’s F test is a numerator (a measure of variability produced by different means) and a denominator (a pooled measure of variability of all the scores). Thus, an analysis of variance.

Statistics such as ANOVA and the t test end with a probability. The accuracy of the probability depends on whether or not assumptions hold that were used to derive the test. Two assumptions that are required for accurate probabilities when testing independent sample means are that the scores come from normally distributed populations and that the variances of the populations are equal (Kirk, 2013).

As for Ronald Fisher himself, he was a small, wiry man with red hair and poor eyesight. As a youth, he won a mathematics scholarship to Cambridge where he was an outstanding student. He helped found and was chair of the Cambridge University Eugenics Society. After graduation, he married
Eileen Guinness, a cousin of the Dublin family who owned the Guinness brewery. The Fishers were practicing eugenicists; they had eight children. Rich, however, they were not. The Fishers lived frugally, practicing subsistence farming for several years early in their marriage. Leonard Darwin, a son of Charles Darwin, was a mentor and advisor. Darwin provided work for Fisher by commissioning book reviews for publications for the Eugenics Society of London. (Box, 1978).

In 1919, Fisher accepted a post as chief statistician at Rothamsted Experimental Station, where he and a staff set about analyzing decades worth of data on crops and animals. He also created new experimental designs that controlled for many of the extraneous variables in agricultural research. Perhaps most importantly, he compiled his new statistical methods into a book, Statistical Methods for Research Workers (1925). The book was quite successful, introducing many research workers to ANOVA and going into 14 editions. Fisher was an idealist, committed to establishing truth and the advancement of humankind (Box, 1978).

**Significance and the .05 level**

Where to draw a line on the continuum of probabilities that separates “data very rare if the null hypothesis is true” from “data consistent with the null hypothesis”? This is the question of how to separate statistical significance from NS (not significant). The widely used cut-off point is p ≤ 0.05. If the probability of an observed difference is 0.05 or less, scholars typically reject the null hypothesis and say the result is statistically significant.

Specifically, what does p ≤ 0.05 mean? In statistics, p is the probability of the differences observed, if it is the case that the null hypothesis is true. That is, p ≤ 0.05 means that if the null hypothesis is true, data with a low probability occurred. Thus, p is a conditional probability about observed data and not a probability about the null hypothesis. There are many ways to misinterpret the meaning of p ≤ 0.05. (See Spatz, 2016 for a summary.)

In the 19th century, the word significant meant signified or something is there, much as a sign indicates something to see. During the 20th century, the word significant evolved to mean important. In statistics, significant carries its 19th century meaning. A significant result means only that a very low probability was found; there is something worth noting. The question of whether the result was important must be answered with analyses other than statistical. Lamentably, some fail to recognize that statistically significant does not ensure importance (Stevens, 1995).

Perhaps the earliest recommendation for a significance level was a 1910 article in the Journal of Agricultural Science. Thomas B. Wood, the principal editor of the journal, advised researchers to take “30:1 as the lowest odds which can be considered as amounting to practical certainty ... that the difference... is significant” (Wood & Stratton, 1919, p. 483). Odds of 30:1 translate to a probability of 0.03. Fisher’s Statistical Methods for Research Workers (1925) included tables with probabilities of 0.05 and 0.01 and an offhand comment “We shall not often be astray if we draw a conventional line at .05” (Fisher, 1936, p. 83).


Jerzy Neyman was born to Polish parents while they were in Russia. Home-schooled until he was 10, he was fluent in five languages. After his father died, the family moved to Kharkov in the Ukraine, where he finished university and taught mathematics. In 1921 he moved to Poland as a statistical assistant at the Agricultural Institute. He soon moved to Warsaw where he received a PhD in 1924. In 1925 he won a fellowship to work with Karl Pearson in London. While there he developed a friendship and collaboration with Pearson’s son, Egon, who had grown up under his father’s influence and was a lecturer in his father’s Department of Applied Statistics. In 1938 he
moved to the University of California, Berkeley and later founded the Department of Statistics. He remained in Berkeley the rest of his life (Howell, 2005, Zabell, 2001).

Neyman’s collaboration with Egon Pearson in the 1930’s produced what has come to be known as Neyman-Pearson Inference (Nickerson, 2005). Besides the null hypothesis (usually that the population means are equal), there is an implied alternative hypothesis: the population means are not equal. Either of these hypotheses could be true or false. Raising the alternative hypothesis out of the shadows leads to a now-familiar 2 x 2 table of outcomes that can result from a statistical analysis:

<table>
<thead>
<tr>
<th>Truth about the population</th>
<th>Decision made on basis of sample data</th>
<th>Null hypothesis true</th>
<th>Null hypothesis false</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reject null hypothesis</td>
<td>Type 1 error</td>
<td>Correct decision</td>
<td></td>
</tr>
<tr>
<td>Retain null hypothesis</td>
<td>Correct decision</td>
<td>Type II error</td>
<td></td>
</tr>
</tbody>
</table>

This approach to statistical analysis is now known as null hypothesis significance testing (NHST). With this approach, Type II errors receive attention. A Type II error is not rejecting the null hypothesis when it should be rejected. If the probability of a Type II error is low, the test is said to be powerful. Statistical power is defined as (1 – probability of a Type II error). Thus, a powerful test is one that is likely to detect a real difference. Now, when an experiment produces data with a probability of a Type I error of around .05 or greater, the next step could be to ask if a Type II error was likely. If the answer is “likely,” factors that contribute to a Type II error can be examined to help in interpretation and perhaps to redesign the experiment.

NHST became the method to use in all fields that employ a quantitative approach. This is certainly true for medicine, business, finance, manufacturing, biology, economics, sociology, and psychology. It is not too strong to say that NHST statistics and experimental design came to dominate epistemology in the 20th century.

Jerzy Neyman also worked out the mathematics of confidence intervals and presented them in a talk to the Royal Statistical Society in 1934 (Salsburg, 2001). A confidence interval is a range of values within which a population parameter is expected to be. The degree of expectation is quantified, often as 90, 95, or 99 percent confidence. In addition, confidence intervals also provide the information needed to reject or retain the null hypothesis.

Neyman gets credit for the development of confidence intervals as analytic tools, although Egon Pearson and William Gosset addressed the subject of interval estimates earlier. Increasingly popular today, confidence intervals were questioned to begin with and caught on slowly (Salsburg, 2001).

**Non-parametric Statistics**

Accurate probabilities from statistical tests such as t tests, ANOVA, and confidence intervals depend on whether the assumptions the tests are based on are satisfied. Two common assumptions are that the scores are from normally distributed populations and the variances of the populations are equal. These conditions can be met if the data are continuous, quantitative measures but they certainly don’t hold if the scores are ranks (1 to N) or nominal or categorical data. Nonparametric tests, which are also called distribution-free tests, were developed to provide
accurate probabilities for situations where the assumptions required for the t test, ANOVA, and confidence intervals do not hold.

The number of nonparametric tests is considerable. Lunneborg, (2005) lists 57 basic, distribution-free tests and points out that the availability of fast, inexpensive computing has fostered many more. Many of these tests are tailor-made to match particular situations. The oldest of nonparametric tests still in use is Pearson’s chi square test.

Jacob Cohen (1923-1998)

In 1962 Jacob Cohen published an article in the Journal of Abnormal and Social Psychology that slowly gained influence in statistical practice. Cohen analyzed 70 studies from 1960 and noted that researchers did not determine the power of their statistical tests. (A powerful test has a high probability of rejecting a false null hypothesis.) When he calculated the power of the statistical tests in those 70 studies, he found that the tests were not powerful. Only 1/5 had enough power to detect a small effect; one-half could detect a medium effect and 5/6 could detect a large effect (Cohen, 1962). This article also showed ways to calculate effect size indexes and offered recommendations for values to consider small, medium, and large. Cohen helped promote awareness of power and effect size indexes with subsequent books and articles that were conversational and easy to understand. (e.g., Cohen, 1994). Today, calculation of effect size and awareness of power are common.

Meta-analysis

A big problem with the NHST procedure is that it is not cumulative. NHST tests start each analysis from the same point, which is to assume the null hypothesis is true. There is no way to incorporate the results of previous studies into the test. Before the advent of meta-analysis, obtaining an overall view consisted of a researcher reviewing all the studies on a topic, making judgments about their quality, looking at the outcomes, and declaring an overall view. It wasn’t a very objective method.

In 1976, Gene Glass published an article that named and explained meta-analysis. This analysis of analyses is an objective way to amalgamate into one conclusion the results of many studies on a topic. At its simplest, meta-analysis produces a pooled effect size from the effect size indexes of many studies. Glass used this new technique to summarize the results of more than 300 studies and showed that psychotherapy is effective compared to a no-treatment control group. The difference between the two groups was about one standard deviation, which is a large effect size (d) equal to about 1.00 (Cohen, 1962). Meta-analysis was immediately popular and spread to other disciplines. In 1989 Stanley and Jarrell developed meta-regression analysis as an objective way to synthesize regression results from many studies.

Into the 21st Century

Over the years various statisticians and philosophers of science raised objections to null hypothesis significance testing (NHST) and how it is used in practice. As the 20th century came to a close and the 21st began, more and more objections were voiced (Nickerson, 2000). Some argued that NHST should be banned from use (Hunter, 1997). Others defended its use but acknowledged some of the objections. Besides occasional misinterpretation due to ignorance, three major objections are:
The best outcome of a NHST test is that the populations are different. But for probably all empirical populations, the idea that they are exactly equal seems easy to dismiss. Thus, the best NHST can do is to lend support to what is obvious to begin with: the populations are different.

The probabilities associated with the most common NHST tests are based on assumptions about the sampled populations such as normally distributed and equal variances. The assumptions are seldom verified but when checked, often found to be unjustified, leading to tabled probability figures that are wrong for the data being analyzed (Erceg-Hurn & Mirosevich, 2008).

A NHST analysis always starts with a null hypothesis of no difference, regardless of previous results on the same topic. Thus, NHST fails to incorporate the scientific ideal of cumulative knowledge.

As a result of these and other objections to NHST, some statisticians and researchers are not only asking the question, “How shall we analyze data?” but also addressing the broader question, “How can we improve our chances of publishing results that are dependable?” A summary of the situation can be found in an editorial on p values in the American Statistician, a publication of the venerable American Statistical Association (Wasserstein and Lazar, 2016). Statistics in the early years of the 21st century is again in transition, much like it was in the early years of the 20th century.

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History, including psychology’s history, is rich with creation myths. Among the classical versions of these are two that are metaphorically appropriate for the development of intelligence testing: the myth of Prometheus the Fire Bringer and the myth of the Birth of Venus. In the first, Prometheus stole fire from Zeus and brought it to humans and in the second, Venus was borne, a fully developed adult, shoreward on a shell. In each case the central figure burst suddenly on the scene, and the story that psychological historians tell about intelligence and intelligence testing is very similar, with Alfred Binet (1857-1911), an eminent early modern French psychologist, cast in the role of fire bringer (or love goddess, take your pick). Among all his many other interests, which included psychology of hypnotism, eyewitnesses, chess playing, and literary creation (Wolf, 1973), Binet had already established a reputation in France as a theorist of intelligence before being selected to chair a commission to design a method for evaluating the abilities of children who were being inducted into a newly created system of public education (Walusinski, 2011). The result was Binet’s development, with his colleague Theodore Simon, of the first modern intelligence test between 1903 and 1905 (Binet, 1903; Binet & Simon, 1905). 

A perfect summary of the genesis of modern intelligence testing as it occurred in the United States is Ludy Benjamin’s 2009 “Time Capsule,” one of the brief historical portraits that appear regularly in the American Psychological Association’s Monitor on Psychology (Benjamin, 2009), capturing both the speed with which intelligence tests were adopted in the United States after 1905, mainly through the efforts of the psychologist Herbert Henry Goddard, and also the darker history of testing’s use in promoting racial segregation and immigration restriction which followed only a few years afterward. As some historian-critics have observed, the introductory chapter of any psychological subject is a cryptic history that obscures as much of the past and of the historical forces, social, political, economic, and others, that have caused the topic to take the shape it has (Danziger, 1994). What a psychological historian could add at this point to the story already told in introductory textbook chapters and Benjamin’s précis would be drawn from older history. This is the intent of what follows: to examine the pre-1900 roots of what all modern texts describe as a fractious and unsettled debate about the definition and purpose of intelligence and its testing. I am very much in favor of a history of psychology that focuses on the near, post-1900 past and on current concerns (Devonis, 2014) and will point frequently to current issues. However, I also think that opening the aperture widely to include earlier, and in some cases quite ancient, precursors may at least be a starting point for reframing some of the questions that have remained static and persistent within this field and may make some implicit ideas more visible.

For most modern psychologists, the history of intelligence testing begins with Binet and his colleague Theodore Simon (Hilgard, 1987), but what actually happened after that in the United States was due mostly to the psychologists who followed Binet—he didn’t live long enough to direct his creation (Devonis, 2013). Flush with acquiring what appeared to be full-blown psychological science embodied in measuring instruments (Venus again!), they took what Binet and Simon had assembled—a couple of handfuls of what we now would call cognitive probes—and, under the influence of developing theories of the Gaussian normal distribution, declared that they had uncovered and quantified intelligence. Among the most prominent of these early mental testers were Herbert Goddard (the focus of Benjamin’s Time Capsule), Wilhelm Stern (who
invented the ‘intelligence quotient’ or ‘IQ’ as a relation between chronological and supposed mental age), Lewis Terman (who revised the original Binet & Simon tests for U. S. distribution and use), and Robert Yerkes who developed, along with several other psychologists during World War I, the intelligence testing program utilized by the U. S. Army to rate and select recruits for various training programs (Yerkes, 1921). From the perspective of thinking that psychology is a thoroughgoing science and that testing is one of its most visible manifestations, this is accurate as far as it goes. Few will argue that psychological observation, description, and experimentation has not uncovered interesting and measureable aspects concerning the relation of mind and environment. But naming the result of this collation of tests “intelligence” emerged at least as much from catalytic reaction that crystallized a collection of cultural expressions about intellectual capacity that existed for centuries, from which humans draw when they want to describe something or someone as “intelligent,” as it did on scientific discovery.

In 1923 E. G. Boring, before he became an eminent psychological historian, was involved with a large public discussion of intelligence and testing. The reason that this discussion was taking place was the unsurprising revelation, over the preceding few years, that wide differences in intellect existed, and that—according to reputable and authoritative psychologists—these differences were associated with various ethnic and racial characteristics. Pundits weighed in on the issue from all sides: Boring’s statement at the time reflected a reserved agnosticism about the new concept of intelligence. He said, famously, that “intelligence is what the tests test” (Boring, 1923, p. 37), and in doing that achieved two things at once: he validated his teacher E. B. Titchener’s view that psychology’s role is to produce results, by whatever means, rather than explain them, and he fused together the content and sources of the multitude of tests that had sprung up at that time, conflating “intelligence” with “testing” in a widely accepted popular definition. Answering by not answering the question “what is intelligence?,” he kept the door open for every existing definition of intelligence to flood into modern psychology. Thus our current view of intelligence is a patchwork of ideas, including some which are quite old.

To turn to the ancient context, the idea of a public ranking of intellect has a long pedigree. Newton’s famous statement that he stood “on the shoulders of giants” (Newton, 1676/1959, p. 416) implicitly recognizes, along with all of the histories of science that feature “great men” (and since the 1920’s, “great women” also), a natural hierarchy of ability that emerges across all cultures at all times. Plato noted this when he recorded in the *Philebus* that Socrates taught that humans deceive themselves about many things, above all, their intellectual capacities. But this implies a positive side to the picture of intelligence, namely, a natural aristocracy of intelligence, which is a central Platonic concept featured in *The Republic*, which espouses the idea that the intelligent should be at the pinnacle of society, an idea that permeates culture even today, in discussions of “meritocracy.”

In the scientific realm, the popular idea of discovery emanating from the supremely intelligent genius stretches back well before alchemy. The term “genius” reveals an aspect of intelligence that reflects a long standing conception of intelligence as a comprehensive set of mental skills, both in individuals and, in religion as well as ancient Greek cosmogony, in God, the universe, or both (Gregory, 2008). Modern proponents of “intelligent design” align somewhat with ancient ideas of a guiding intellect determining the course of human achievements, small and large. “Genius,” a Roman word, reflects an inhabiting of not only humans but also places and things by spirits, forces, or otherwise intangible yet sensible currents of organization and creation (Rushdoony, 1972). Thus, at its base, intelligence has something godlike about it—not part of the current picture of scientific psychology, but nonetheless culturally compelling.
Descending now from Olympian heights, the history of the practicalities of the everyday modern psychology of intelligence can be outlined by describing a series of situations in which internal mental abilities and differential behavioral performance were linked. Working backward from the creation of the Binet-Simon tests, the following occurred. The first area where this linkage of intelligence and behavior is evident was in education. In the context of establishing universal public education, Binet and Simon were charged by the administration of the French educational system, which had promulgated secular public education for all under the administration of Jules Ferry in 1881, to devise a method by which academic deficiencies could be identified and remediated (Walusinski, 2011). In the United States, testing contributed to a developing consensus that there was an underlying distribution of abilities, and that these were important to take into account not only in educational settings but also in asylums, reformatories, prisons, and institutions caring for children and adolescents with mental deficiencies (Devonis, 2013). By the 1920's, intelligence was used as much for discrimination as well as inclusion. This reflected a continuing social debate about who should have access to the benefits of education, and even to the basic rights of citizenship. Arguments partially based on the publicized results of hastily administered and misinterpreted intelligence tests given to Army recruits during the First World War had been used as a key part of the argument for restrictive US immigration policies implemented in 1924 (Gelb, Garland, Futterman, & Mehler, 1986.) The results of intelligence testing were also used to argue for the approval of sterilization of people called “mentally unfit,” most famously in the case of Buck vs. Bell (1927). Within twenty years, experimental results that contradicted those of the 1918-era Army testers, on whose results the restrictions of the 1920’s partially rested, became part of the argument against segregation of schooling opportunities by race. Even at the outset, if intelligence tests were used to foster discrimination and racism (Jackson & Weidman. 2005), they also supported the development of specialized programs for gifted and talented students, for instance those pioneered by Leta Hollingworth around 1920 (Silverman, 1989).

But focusing only on our own recent past in the United States obscures the fact that it is a persistent cultural problem worldwide to decide who should be educated, who should be termed “educated,” who should have access to education, and how the achievement of an education can be determined. The intelligence tests of 1910 were just the latest in a centuries-old tradition of school examinations. Those fortunate enough to receive any more than minimal exposure to schooling before 1910— and for most of the world, there were very few that fit that description— were subject to strict and rigorous examinations to determine who would lead, who would follow, and who would be cast aside. The evolving technological and commercial environment of Europe that produced Binet also produced the intensely competitive academic system of neighboring Germany, and before any modern intelligence tests had ever been published, eminent authors and playwrights had described the corrosive effects of hothouse education. Hermann Hesse’s 1906 novel Beneath the Wheel and Frank Wedekind’s 1891 drama Spring Awakening are literary evidence that the idea of separating individuals under academic pressure was and is a characteristic of cultures that produce experimental psychology.

If the end product of education is “knowledge,” that term itself contains many ambiguities that intersect with the idea of intelligence. Obtained knowledge is often contrasted with public knowledge, and a higher cultural value is placed on knowledge gained through arduous struggle, the more so if the knowledge is particularly unique or recondite. This feature of knowledge, its individuality and secrecy, overlaps with another enculturated meaning of the term ‘intelligence’: knowledge gained surreptitiously.
Knowledge can be dangerous. Societies have suspected and persecuted many of their most knowledgeable individuals throughout history. For one example, persons in privileged possession of knowledge due to education or other advantages (including secret association with the enemies of the Tsarist state) were, without appeal to any specific intelligence measures, called the “intelligentsia” in Russia in the half-century prior to the 1917 Revolution (Read, 1984) and became a target for repression and extermination. In capitalist Britain and America a grouping of the highly intelligent, scoring nearly three standard deviations above the mean on a standard intelligence test, resulted in the Mensa society, an intellectual enclave more self-consciously intelligent and less persecuted (Serebriakoff, 1995).

It has also been suggested that wisdom, often thought to be the ultimate refinement of practical and theoretical knowledge, is equivalent to intelligence, a position that has some empirical support. R. J. Sternberg (1990) correlated implicit theories of intelligence, wisdom, and creativity and found the highest correlations (above .90 in some instances) between rated wisdom and rated intelligence. From the perspective of history, wisdom is a far older concept than that of measured intelligence, and so far as psychologists have relied on implicit conceptions of intelligence they might be referencing wisdom as well. The counterpart of the wise—or intelligent—person is of course the fool, and from the beginning of literature, writers and playwrights have suffered fools gladly. The idea of a scale of measurable intelligence draws another part of its compelling metaphorical power from this accumulated historical interplay between wisdom and foolishness.

Related to these ideas is the historical connection between intelligence, social status and rank. John Carson, in his recent work (Carson, 2007), observed that in both Revolutionary France and during the early years of the United States, issues of measuring merit came to the fore. While democratic societies have rhetorically resisted inequality, in practice systems of evaluating, ranking, and ultimately compensating and privileging individuals have evolved. It’s not accidental that the early 20th century saw several attempts to classify historical individuals in terms of their measured intelligence (e.g., Miles, 1926). Even today, public figures, especially US Presidents, are the focus of such rankings (Simonton, 2006). The relationship between measured intelligence and college placement tests is a frequent focus of internet interest, with college acceptances and rankings blended into the mix to present a comprehensive picture of relative standing of those who are eventually accepted into prestigious colleges, a significant badge of rank and status in the United States and other countries.

College was not always so available as it is today, however, and in earlier times—not that much earlier than the time of the development of the first intelligence tests—a University education was immensely rare. Circa 1650, for example, only an infinitesimal percentage of people in the American colonies were students at colleges. Indeed, very few colleges even existed at that time—Harvard began in 1636; Yale began sixty-five years later. However, a common theme connected colleges and the rest of the population, the notion of trainability. Any college student (or instructor) will agree that people differ widely in their ability to learn, even when highly selected for learning potential. The case was no different in apprenticeship, one of the main areas where a formal evaluation of trainability existed well before measured intelligence came on the scene. According to one 1832 document, a certain apprentice was “to be instructed in the art, trade, or calling of a House-Carpenter (if said apprentice be capable to learn.)” (Washington State Department of Labor and Industry, n.d.). For the apprentice of the 17th century there were daily inspections of work and with luck, patient mentoring rather than thrashings followed. By the 19th century extensive legislation governed apprenticeship in many countries, and prescribed rigorous examinations at the conclusion of the process. Failure rates could be quite high in apprenticeships.
For example, in World War II, the washout rate of pilots, who were trained in an accelerated version of an apprenticeship method, held steady throughout the conflict at around 40 percent (Greer, 1955).

Regardless of where one looks in history, when specialized training is at issue, some form of fitness or competency test will evolve. Candidates in the pilot training program mentioned above had to pass a “special educational test” to be admitted (Greer, 1955, p. 562). In the United States, the Pendleton Act of 1883 established a system of competitive examinations for fitness for civil service jobs. However, in Britain, the idea of a competitive examination for the Civil Service had come into being thirty years earlier. The Northcote-Trevelyan report established a system of examinations including many of the components of what would become, at the turn of the century, intelligence tests. The prospectus for these examinations not only provided for their content but also for ranking (“The Origins of the Modern Civil Service,” 2015). Thus there were strong precedents for establishing trainability through testing that provided fertile soil for the idea of general examination of the intellect.

Common sense as well as psychological research (Ceci & Williams, 1997) supports the idea that the more schooling one has, the more intelligent one is, and the more economically successful as well. Schooling is part of the “gatekeeping” function of society and intelligence is implicitly linked with this, both in terms of perceived trainability on entering and in terms of social rank when leaving. Historically as well as currently, if you’re smart, you’re probably richer (relatively speaking, although individual results may differ!) Of course, intelligence is only part of the explanation: multiple environmental and cultural factors also determine career trajectories and endpoints. However, the idea that intelligence is an inherent, possibly genetically determined quality that determines trainability or educability has had many influential proponents in psychology and related behavioral sciences (e.g., Herrnstein & Murray, 1994). This is a view that regularly recurs and flares into politically-charged debates within and outside of psychology.

For a long time (and in some psychologists’ views, even today) the related idea of learning was considered to be the bedrock of psychology’s scientific status. By this was meant learning based on animal models of conditioning: any psychologists circa 1930 that did not take observed behavior as their primary data source and behavior change in animals as the gold standard of research results were considered to be out of date at best or retrogressive at worst.

The story of the discoveries of Pavlov and other scientists at the turn of the twentieth century are found today in the introductory chapter on learning and conditioning rather than in the chapter on intelligence testing. Nonetheless, the idea of intelligence got a strong boost of publicity and respectability independent of mental testing by the various publications of Edward Lee Thorndike (1874-1949). His 1898 dissertation “Animal Intelligence: An Experimental Study of the Associative Processes in Animals” and his later very widely distributed book Animal Intelligence: Experimental Studies (Thorndike, 1911) formed the basis of support for behaviorism in the various forms in which it evolved in the decades thereafter (Wozniak, 1999). Briefly put, Thorndike was more interested in animal stupidity or, more charitably, in animals’ automatic and unconscious calculation of their best interests. As is well known, he devised puzzle boxes in which cats were imprisoned and from which they could escape only if they learned to operate various mechanisms. His findings matched well with other contemporary findings in both animal and human memory and learning which suggested that learning was best represented graphically by a descending curve tracking the development of new, more efficient associations. What is of interest here to the historian is why he should even have used “intelligence” in the title at all. The reason is that he had another parallel agenda, which was to attack and defeat ideas of intelligence in animals comparable to any
idea of human intelligence. He was focused on stories of clever deductions by animals found in the writings of British natural scientists, among them Charles Darwin and especially George Romanes (1848-1894), who delivered what Thorndike considered excessive praise to animals for employing, in solving problems, what were in reality blunt trial-and-error methods. It was Thorndike’s intent, in fact, to counter the idea of finding in animals anything that could compare with the esteemed characteristics associated with refined human intelligence (Stam & Kalmanovitch, 1998), and to supply instead a psychology of unthinking animals. It’s not easy to see at first glance how this use of the term “intelligence” could have added to the collective store of ideas about it. However, as mentioned, Thorndike inspired American behaviorism. The behaviorism of Thorndike’s time, by and large, was not the hybrid of cognition and behavior we know today as cognitive-behavioral theory or therapy but instead stressed the ideas of reaction to environmental stimuli and brute-force trial-and-error learning. Intuitively, a non-cognitive behaviorism that relies more on activity than on knowledge, thought, and intelligence has appeal. It’s no surprise that even humans who score well on intelligence tests very often find themselves in situations in which deft intelligent solutions are sought in vain and where other more primitive problem solving methods kick in, including blind trial and error.

The roots of the modern hybrid of cognitive behaviorism are found in the work of Edward Chace Tolman (1886-1959), whose conception of the cognitive map is a central historical component of cognitive theory (Carroll, 2017). Tolman was a thoroughgoing behaviorist and based many of his theoretical principles on animal models, even dedicating his main theoretical work, Purposive Behavior in Animals and Men (Tolman 1951), to the Norwegian rat. But in its concluding sections (which few read or remember) Tolman outlines what we now see as a sketch of a complex, sophisticated framework for mental mechanisms entirely in the spirit of current cognitive theory. Tolman specified two sources for this: Gestalt psychology, and the writings of Charles Spearman. If Spearman shows up in an introductory text’s chapter on intelligence today it will usually be because he was one of the proponents of “g”, the idea of a single factor determining general intelligence which he proposed in 1904. Spearman proposed this concept in the context of developing a detailed theory of internal mental processes. Tolman’s other source, Gestalt psychology, was not silent on the idea of animal intelligence either. One of the most significant early works on problem solving in apes was based on the extensive research conducted by Wolfgang Köhler whose forced internment on the island of Tenerife with its ape colony during the First World War compelled him to focus on primate intelligence (Köhler, 1925). Since that time a tradition of ascribing intelligence to related primate species has developed. It isn’t too far a stretch to compare animals’ intelligent tool use in naturalistic situations as well as laboratories with intelligent tool use by humans, and tool use is one of the bases of anthropologists’ distinction between more and less advanced societies, much as biologists employ it as a method of ranking intelligence between species. The study of intelligence even extends to the very primitive beginnings of our own species, with lively discussions about the relative intelligence of various ancient human ancestors (University of Colorado at Boulder, 2014). Recently, psychologist Stanley Coren even proposed a hierarchy of dog intelligence by breed alongside his prolific accounts of smart (and not so smart) dogs (e.g. Coren, 2010).

This sketch suggests that there are many continuously existing historical forces that keep the concept of intelligence alive in psychology. In terms of current psychological practice, there are those whose livelihood depends on the creation and management of testing and there are the theorists who continue to work out the underlying components or mechanisms of intelligence. But the concept draws on far more than internal current psychological interest. There are cultural precursors in the ideas of trainability and comprehensive examination, of ranking in terms of merit,
of the interplay between wisdom and foolishness, and in the embedded contributions from animal
learning and anthropology. Every situation in which we now employ intelligence tests relates to
something our distant predecessors managed to do without testing, in one way or another. From
the time that individuals first became tool users to later days in which schools were founded,
occupations evolved, and logical problem solving became an activity for recreational play.
Following are some vignettes of the roles that measured intelligence plays in modern social life in
the United States that illustrate the continuity of an ingrained cultural tradition that compels
measurement and comparison of intellectual ability.

Vignettes

1. IQ as a life or death issue: the Magical Number 70

In contrast to other sciences, actual magical numbers exist in psychology. Everyone is familiar
with George Miller’s designation of the number 7 as “magical” (Miller, 1956) in light of the uncanny
regularity in which it emerged as a quantity in memory and cognitive research. There is another
magical number connected with IQ; its magicality, however, seems to have been decided less by
psychologists and more by corrections and legal personnel as well as journalists. This is a number
that shares features with 7—often it is 70—and it is repeatedly termed the “magic number” in
corrections because it is the cutoff point on the IQ score scale below which a person on death row
lives and above which a person dies (see, e.g., Caplan, 2004 for a discussion of the variability of
magic numbers in this area). Several court cases, the most well-known of which is Atkins v. Virginia
(2002) and related decisions, rest on the idea that a particular IQ score, often 70, has a special
relation to mental retardation not shared by numbers above it.

It’s most interesting that the number 70 signifies a bright line in popular thinking (Millheiser, 2014)
as well as in formal diagnosis. From a statistical perspective, it shows that not all standard
deviations are created equal: except in Mensa, there are few if any bright lines that divide
differences in the upper tail of the IQ curve. (Although, one famous psychologist, Paul Meehl, was
said to have enjoyed watching anyone doing anything who was five standard deviations above the
mean in a measured skill!)

Dean Keith Simonton (2006) employed estimation methods, which have their roots in early
attempts by psychologists to assign IQ scores to famous deceased individuals (e.g. Cox, 1926), and
provided IQ estimates for US presidents from George Washington to George W. Bush. This
produced a range of corrected estimates ranging from 130 (for Ulysses S. Grant) to 175 (for John
Quincy Adams.) What is noteworthy is that: first, there does appear to be a correlation between
high position and high IQ, and second, the scores are expressed as a range, in the same manner as
correlations between occupational rank and IQ (for a review, see Hauser, 2002). Only the crassest
of journalists would seriously suggest a cutoff score of 150 or more for presidential candidates in
the same way that 70 is routinely cited as the exact point where patience runs out with prisoners.

The bright line at 70, from a historical perspective, is most likely due to the survival of the work of
the very earliest clinical practitioners of intelligence testing, the most prominent of whom in his era
was Herbert Henry Goddard. Goddard devised a series of technical descriptive terms for sections
of the lower end of the intelligence curve, terms which we still sometimes hear today: “moron” for
those in the range of 50-70, “imbecile” for the next lower grouping, and “idiot” for the lowest in
the scale. The practical result was that the concept of “feeblemindedness” was, largely through his
efforts, given the appearance of scientific credibility, and measures for the segregation and
eventually even the sterilization of people with mental illnesses emerged as features of clinical and
legal practice (Zenderland, 1998). Today, people with cognitive disabilities face many obstacles
within the criminal justice system (Fabian, 2005). Death row prisoners with cognitive impairments may encounter even more problems. Heilbrun (1990) observed that, compared to prisoners sentenced to life terms, prisoners sentenced to death form a class with lower measured intelligence and higher anti-sociality. Their more severe sentences may be influenced in part by perceptions of their intelligence. Current diagnostic systems for mental retardation, while more sensitive to context, still function as methods of absolute classification of individuals in groups with boundaries defined by intelligence scores (Hourcade, 2002). Furthermore, historically-conditioned attitudes toward statistics persist today among legal professional and lay jurors, favoring simple classification rather than attention to the complexities of variability. The criminal justice system still demands binary, ‘either/or’ decisions when confronted with the ambiguities and uncertainties of diagnosis and measurement. Taken together, historical elements of classification collude to produce an intelligence score that can function, figuratively and literally, as a guillotine.

2. Intelligence: A personality trait?
Often intelligence and personality are seen as standing apart: they end up in separate chapters in introductory textbooks and don’t share too much vocabulary or theory. However, Sternberg (1990) proposed cognitive descriptions that combined several features that were reliably understood as defining intelligence, wisdom, creativity, etc. Personality theorists (e.g., Funder 2013) note that intelligence is perceived very quickly in brief social encounters. This rapid assessment may result in both inaccurate perceptions based on immediately accessible features such as attractiveness (Talamas, Mavor, & Perrett, 2016) and more accurate ones based on social interactions. For instance, the intelligence of individuals who actively engaged in impression management of social characteristics related to perceived intelligence (e.g. maintaining eye contact) was more accurately perceived compared to controls (Murphy, 2007). Emotional and social intelligence have both been proposed over the past twenty years as additions to the very large number of types of intelligence. Recent research has demonstrated that elements of the most well-known and accepted basic theory of personality, the Big Five traits, correlate with rated and measured intelligence. The clearest relationship is between the trait of openness to experience and intelligence. Kaufman (2014), surveying the correlations between IQ and personality, noted that in a list of 45 potential elements of personality, 23 did not correlate significantly with intelligence. Those that did were: organization, happiness, ingenuity, intellectual competence, mental quickness, introspection, intellectual creativity, imagination, intellectual depth, intellectual engagement, toughness, emotional stability, moderation, orderliness, organization, nurturance, tenderness (negatively correlated), sympathy (negatively correlated), morality (negatively correlated) and dutifulness. The actual correlations were not large: the largest were for intellectual engagement \( r = .42 \) and mental quickness \( r = .34 \)—which echoes theoretical positions that state that intelligence consists mainly in the rapidity of processing information. From a Big Five perspective, features of intelligence correlate most highly with the dimension of openness to experience (DeYoung, 2011). Recently Gosling and his colleagues found consistent features of the Big Five in dogs (Gosling, Kwan, & John, 2003) and noted personality differences between cat and dog owners, with cat owners somewhat higher on the dimension of openness to experience. In light of the long-standing idea that there is a scale of intelligence in animals as well as humans, perhaps these recent findings reanimate these ideas as foci for future research.

3. Cheating on the Turing Test
Although it has been of interest in computer science and applied cognitive science for over 30 years, artificial intelligence has yet to deeply permeate the introductory psychology text. The classic definition of artificial intelligence was that given by the mathematician Alan Turing (1950).
Briefly put, if a computer can’t be distinguished from a human in terms of its performance on specified tests, then it has achieved parity with humans. The question of how a machine can differ from a human and in what ways is actually very old and was a central feature of Descartes’s thoughts on the relationship between mechanism and the soul (Hatfield, 2015). In fact, an early popular account of the development of computers was titled ‘The Soul of a New Machine’ (Kidder, 2000). Parallels can certainly be drawn between the use of a test to determine the degree of mentality, humanness, or intelligence and the Turing Test. And, the artificial intelligence community, which includes computer scientists, linguists, philosophers, and more than a few psychologists, has questioned to what degree intelligence of the sort measured by IQ tests is embodied in machine performance (Saygin et al., 2000). Recently, computer scientists at the University of Illinois tested a current AI program with tests drawn from the WISC (Wechsler Intelligence Scale—Children). Their finding: the program performed about as well as a four-year old child: good on vocabulary, but not that good on comprehension and explanation (Galatzer-Levy, 2013).

Artificially intelligent systems are in use worldwide in all sorts of applications and applied psychologists have been heavily involved in making these applications work. Recently, a Chinese company was cited because it cheated on a version of a Turing test of one of its artificial intelligence programs. The current state of the art for testing AI takes variability or individual differences in performance into account (unlike the forensic case in Vignette 1 above, where the number 70 is set as a hard and fast boundary that has a kind of eternal correctness). In the case in question, the rules for the test specified that a certain percentage of failures of the specified test would be cause for rejecting the project. The Chinese company increased the number of iterations of the test. While their AI product would have failed under the common 25-tests rule, they tested many more times than this and achieved, under those conditions, a failure percentage that was under the cutoff (Simonite, 2015). Presumably more cases of cheating are on the way, including having better AI programs substitute for worse ones. The history of intelligence testing has its own instance of data manipulation to support theoretical prejudices: historians point to the case of Sir Cyril Burt, an early British proponent of inherited intellectual skills, who published correlations between twins that proved too good to be true (Fancher & Rutherford, 2010). Possibly a general psychological principle can be adduced: if there’s a test, there will be cheating, especially if status or economic gain is involved. For an explanation of that—well, that is where Freud came in.

References


Cognition in Historical Perspective

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The study of the mind has a long history in scholarly inquiry. Philosophers in antiquity expressed an interest in reason and knowledge and in the seventeenth century British empiricists discussed the ways in which ideas come to be associated with one another (Robinson, 1986). In the late nineteenth century, as psychology began to separate itself from philosophy, cognition was a frequent topic of inquiry. William James’s (1890) textbook, The Principles of Psychology, was both immensely popular and highly influential. James’s vivid descriptions of attention, memory, consciousness, and related concepts provided psychology with a rich set of topics that would stimulate investigations in the laboratories of the early twentieth century.

This chapter will provide a brief overview of how the study of cognition has changed in the last one hundred years. The chapter begins with the approach to cognitive psychology in the first few decades of the twentieth century. Next, I review the behaviorist era, which led to relative neglect of cognition within experimental psychology. Then I examine the role of cybernetics and computer simulation in the reemergence of cognitive psychology in the mid-twentieth century, a phenomenon sometimes referred to as the cognitive revolution. Finally, I present three examples of research into higher-order cognitive processes: language, imagery, and problem solving.

Cognitive Psychology in the Early Twentieth Century

In the late nineteenth century, laboratories in experimental psychology employed a variety of techniques to study cognition. One was reaction time, as in the studies of James McKeen Cattell (1886-1887). Experiments in memory were also popular, many of which were based on the study of nonsense syllables pioneered by Herman Ebbinghaus (1885/1913). One method of studying cognition that played an important historical role in psychology was the method of systematic introspection, championed by Edward Bradford Titchener of Cornell University. Born in England, Titchener developed a conception of psychology rooted in the tradition of British empiricism. He defined psychology as the study of conscious experience and believed that such experience could be analyzed into elementary sensory experiences. He named his school structuralism (Titchener, 1898).

Titchener’s preferred method of studying experience was the method of introspection. The idea was that a subject was presented with a stimulus and was then asked to report his or her conscious experience. Titchener and his students developed extensive procedures for training individuals to report their introspections accurately. Much of the work on cognition in the first few decades of the twentieth century utilized some form of introspection as the central method.

Over time, concerns over Titchener’s technique emerged. One divisive issue during the first decade of the twentieth century was whether it was possible to have an imageless thought. Titchener strongly rejected the idea, but others such as the German psychologist Oswald Külpe maintained that such thoughts did occur (Lindenfeld, 1978). The debate was ferocious, causing some observers to lose faith in the ability of the introspective method to resolve empirical disputes. Prominent psychologists began to criticize the status of the method within experimental psychology and the need for psychologists to analyze their conscious experience (Cattell, 1904; Dunlap, 1912). Cattell observed that it “is usually no more necessary for the subject to be a psychologist than it is for a vivisected frog to be a physiologist (p. 179)."
The fundamental problem with introspection was that it was impossible to adjudicate disparate claims of private experience. Reisberg (2001) provided a compelling illustration of the problem. He asked us to consider the claim that your headaches are more severe than mine. How might we test such a claim? Well, I could ask you to describe your headaches. You state that they are unbelievable, agonizing, and excruciating. But that might simply mean that you have an extravagant way of talking about your experience whereas I am more stoic. It doesn’t seem that studies of introspection advanced matters very much.

Moreover, other factors entered in. The rise of the functionalist school of thought (Angell, 1907) that urged many psychologists, particularly in America, to emphasize mental processes more than mental elements, led many psychologists to question the usefulness of introspection. Another consideration was the increased interest in child study, animal experimentation, and applied psychology, topics for which introspection would be of little use. Furthermore, as the attention given to Freudian concepts of the unconscious gained steam, the notion of systematically examining conscious life seemed less and less central. The net result of all of these factors is that by the 1930s, studies of introspection were infrequent and declining in frequency (Bruner & Allport, 1940).

The Behaviorist Era

In 1913, the behaviorist John B. Watson emphatically rejected both the method of introspection and the study of consciousness in his behaviorist manifesto. Experimental psychologists increasingly turned to the study of objective behavior in both humans and animals and to behaviorism as the preferred theoretical system. Behaviorists concentrated on laboratory studies of animals (usually rats) and explained their results in terms of stimulus-response (S-R) connections. This state of affairs existed from roughly 1920 until about 1950, at least in the United States. In Europe, Gestalt psychology provided an alternative framework to behaviorism, but it never became the dominant view in America.

Watson championed the conditioned reflex as the basic unit of behavior, an approach that was adopted and elaborated by Clark Hull during the 1930s and 1940s (Rashotte & Amsel, 1999). Hull argued that animals learned S-R connections when reinforced which, for Hull, meant a reduction in a biological drive such as hunger. He developed complex formulas for predicting animal learning and adopted an explicitly hypothetical-deductive framework in which his theories were explicitly stated, tested, and, when dictated by experimental results, revised. Hull’s approach to behaviorism was highly influential for several decades in the first half of the twentieth century.

Hull’s research benefitted from considerable financial support. In 1922, the Laura Spelman Rockefeller Memorial (LSRM) developed plans to distribute four million dollars per year to the social sciences. LSRM was interested in funding scholarship that would address social problems, so studies of behavior (as opposed to consciousness) provided an opportunity for psychology to participate along with other social sciences such as sociology and economics (Samelson, 1985). The funds that went to psychology during this period included a grant for what would become the Institute of Human Relations at Yale University in 1929. Yale would use some of that money to recruit Hull to the faculty, where he would advance his approach to behaviorism throughout the 1930s and 1940s (Morawski, 1986).

The dominance of behaviorism within experimental psychology during the second quarter of the twentieth century came at the expense of studies of cognition. For the most part, behaviorists during this period were skeptical of references to cognitive processes. As a consequence, there was little cognitive psychology of note. There were, of course, exceptions. The British psychologist Sir
Frederic Bartlett argued for memory as a constructive process, a view that would eventually attract the attention of cognitive psychologists in the 1960s (Bartlett, 1932). In addition, the American psychologist Edward Tolman conducted studies of how rats learned mazes that led him to the conclusion that the animals had developed a cognitive map of their environment (Tolman, 1948). But, on the whole, studies of memory, problem solving, and other cognitive processes were not prevalent during the behaviorist era.

By the middle of the century, several limitations of the behaviorist approach began to emerge. One was the discovery of biological constraints on learning (Breland & Breland, 1961), which forced learning theorists to reexamine their environmentalist views. A second major development, more pertinent to the present discussion, was the criticism that behaviorist theories could not adequately account for more complex forms of behavior. The neurophysiologist Karl Lashley, a student of Watson, issued a forceful critique of stimulus-response models in discussing what he referred to as “the problem of serial order” (Lashley, 1951, p. 112). Lashley argued that language could not be adequately explained in terms of associations between adjacent words in a sentence. Lashley’s paper has been regarded as a pivotal moment in the shift from behaviorist to cognitive models (Bruce, 1994) and set the stage for the linguist Noam Chomsky’s (1959) subsequent criticism of Skinner’s Verbal Behavior. As psychologists came to doubt that simple behaviorist models could explain complex behaviors, they began to look elsewhere for ways of thinking about complex cognition.

**Information Theory and Cybernetics**

Although some problems with behaviorism had emerged by the early 1950s, much of the impetus for the reemergence of cognition in psychology came from outside the discipline. In particular, much of modern cognitive psychology emerged from the information theory of 1940s and 1950s, which, in turn, originated from applied research during World War II.

World War II enlisted the expertise of psychologists in numerous ways, from the study of propaganda to the selection of men for military service to the evaluation of soldiers who had suffered brain damage (Gardner, 1985). The war also drew upon the expertise of mathematicians, including Alan Turing’s work on breaking German codes in England (see Vignette 1: Alan Turing, code breaker and computer scientist) and Norbert Wiener’s research on the role of feedback systems for torpedoes. Wiener found that auditory feedback could be used to correct a torpedo’s trajectory and subsequently described the behavior of such mechanical but purposive devices as an example of cybernetics, which is the scientific study of self-regulating systems. For Wiener, intelligent behavior was behavior that adjusted in response to environmental change, thus placing feedback at the center of his approach. Importantly, Wiener recognized that it did not matter whether such behavior occurred in animals or machines; the same information processes were applicable to each (Rosenblueth, Wiener, & Bigelow, 1943). During this time, the Josiah Macy Jr. Foundation sponsored a series of conferences that explored cybernetics and attracted interest from scholars in various fields, including engineering, physiology, and psychology. There were ten conferences held in New York City between 1946 and 1953 (Greenwood, 2009; Pickren & Rutherford, 2010).

During this period, there was growing interest in the similarities between the brain and the computer. In 1943, Warren McCulloch and Walter Pitts had published a paper based on the similarity between binary logic and the “all-or-none” character of nervous activity. McCulloch and Pitts viewed the brain as an interconnected network of neurons, each of which is either active or inactive. Although they made no claims regarding specific neural mechanisms, their model
provided optimism that it would eventually be possible to “embody the mental function of reasoning in the actual physiology of the brain” (Abraham, 2002, p. 20). Several years later, Hebb (1949) published *The Organization of Behavior*, an influential volume that examined in some detail how neurological networks could explain learning processes.

**Computer Simulation of Cognition**

It is difficult to overstate the importance of the digital computer for the history of cognitive psychology. Although the computer is ubiquitous in contemporary life, it was brand new in the middle of the twentieth century. People weren’t fully sure what to think about these new machines, but computers would eventually change how psychologists approached the study of the human mind in a profound way.

Although physiological models of learning were gaining attention, the mathematician John von Neumann provided a key distinction between software and hardware, enabling researchers to appreciate the point that cognitive processes could be stated at the program level regardless of the hardware that implemented the program. Thus, although there was significant interest in the brain, researchers in artificial intelligence argued that it would be possible to study cognitive processes without reference to the particular hardware that implemented their computer programs.

Allen Newell, a scientist at the Systems Research Laboratory of the RAND Corporation, began designing programs to play chess in 1954. A year later J. C. Shaw and Herbert Simon joined him. Newell and Simon developed a program they called the Logic Theorist, which they unveiled at a conference at the Massachusetts Institute of Technology in 1956. The goal of the development of the Logic Theorist was to solve logical theorems. The program would eventually lead to a more complex program, called the General Problem Solver, which was designed to solve a wider range of problems.

Newell, Shaw, and Simon (1958) emphasized that their theory of information processing had nothing essentially to do with electronic digital computers. Nor did it necessarily depend upon any details of the human central nervous system. Their approach was to develop programs that could perform various cognitive tasks, not to specify the neurological mechanisms that might be involved:

> We have avoided, however, specifying these mechanisms in neurological or pseudo-neurological terms. Problem solving—at the information-processing level at which we have described it—has nothing specifically “neural” about it, but can be performed by a wide class of mechanism, including both human brains and digital computers (p. 163).

By defining their theory in terms of information processes rather than neurological mechanisms, Newell and colleagues sidestepped a number of longstanding issues related to brain research, including the challenges to localize particular mental functions such as memory as well as the phenomenon of brain plasticity which may permit new brain regions to take over functions if a given brain region has been damaged. Instead, they focused attention on information processing, whether it was implemented in a brain or a computer.

Newell and colleagues offered computer simulation as an alternative research strategy. Researchers could write programs designed to simulate cognitive processes and then running the program would determine whether it was sufficient to produce the desired behavior. Although Newell and colleagues argued that cognitive models should be tested via computer simulation, psychologists never fully embraced simulation research. Nonetheless, simulation provided a valuable function: it demonstrated that cognitive theories could be explicitly stated and rigorously
tested. As a consequence, simulation work provided scientific legitimacy to the study of cognitive processes (Greenwood, 2009).

The Reemergence of Cognitive Psychology

In the 1950s and 1960s, stimulated in part by the advances in the digital computer, psychologists began showing renewed interest in empirical studies of “higher” cognitive processes, including problem solving, and reasoning. A landmark study was the publication of a book by Bruner, Goodnow, and Austin (1956) entitled, *A study of thinking*. Bruner and colleagues investigated the process of concept formation and found that their participants developed hypotheses about possible solutions to the tasks they were presented with. The notion of participants developing and testing hypotheses was a sharp break from behaviorist models. As they explained in introducing their volume:

> The past few years have witnessed a notable increase in interest in and investigations of the cognitive processes—the means whereby organisms achieve, retain, and transform information. This increase in interest and effort should, we suppose, be counted as a “revival,” since there was an earlier time (the years before the first World War), when the Higher Mental Processes constituted a core topic within psychology (p. vii).

The renewed interest, however, came with a different method. Instead of asking people to introspect about their conscious experience, psychologists such as Bruner were asking them to perform various tasks and then drawing inferences about cognitive processes from the resulting behavior. Thus, although the theoretical explanations differed significantly from the behaviorists’ models, there was significant continuity at the methodological level.

Another major figure in the cognitive revival was George Miller. Miller had professed to be a behaviorist in the early 1950s, but was a committed cognitivist ten years later. In 1951, introducing his book *Language and Communication*, Miller wrote the following:

> The bias is behavioristic—not fanatically behavioristic, but certainly tainted by a preference. There does not seem to be a more scientific kind of bias, or, if there is, it turns out to be behaviorism after all. The careful reader will discover occasional subjective lapses. Undoubtedly, in these instances, a scientific approach is possible, but the author was unable to find one or think of one (Miller, 1951, p. v).

By 1960, Miller had become a committed cognitivist and (along with Galanter and Pribram) wrote a groundbreaking book, *Plans and the Structure of Behavior*, which described a cognitive approach to planning behavior.

Miller (1989) stated that his conversion to cognitivism came at the Symposium on Information Theory held at the Massachusetts Institute of Technology in September 1956, the same conference at which Newell, Shaw, and Simon presented their new theory of problem solving. It was there that he met Noam Chomsky, who convinced him that the prevailing behaviorist theories of language were insufficient to explain how children acquire language. Miller recalled the event and his reaction to it:

> I went away from the Symposium with a strong conviction, more intuitive than rational, that human experimental psychology, theoretical linguistics, and computer simulation of cognitive processes were all pieces of a larger whole, and
that the future would see progressive elaboration and coordination of their shared concerns (Gardner, 1985, p. 29).

Together Miller and Chomsky would play a central role in the creation and advancement of the interdisciplinary field of psycholinguistics (Cohen-Cole, 2015). In the early 1960s, Miller was part of the Institute for Advanced Studies at Princeton, which brought together eminent individuals (e.g., Einstein, Oppenheimer, Kennan) from a number of disciplines. Miller also set up the Center for Cognitive Studies at Harvard in the 1960s.

By the 1960s, there were signs of a sub-discipline that was coming of age. In 1967, Ulric Neisser published a textbook, *Cognitive Psychology*, which pulled together much of the developing literature on attention, memory, and other cognitive processes. By the early 1970s, a number of new journals, such as *Cognitive Psychology* and *Cognition*, emerged to report cognitive studies. The new sub-discipline drew attention to several topics that psychologists had neglected during the behaviorist era. Three of the most important were language, imagery, and problem solving.

**Language**

From the 1920s to the 1950s, experimental psychologists expressed relatively little interest in language. When behaviorist did discuss language, they preferred to refer to "verbal behavior." The assumption was that correct speech followed from an environment in which language models were prevalent and in which children’s speech errors were corrected. In his book, *Verbal behavior*, B. F. Skinner (1957) described how parents shape their children’s utterances:

> In teaching the young child to talk, the formal specifications upon which reinforcement is contingent are at first greatly relaxed. Any response which vaguely resembles the standard behavior of the community is reinforced. When these begin to appear more frequently, a closer approximation is insisted upon. In this manner, very complex verbal forms may be reached (pp. 29–30).

Chomsky (1959) criticized Skinner’s account, rejecting the notion that children’s language could be explained in terms of patterns of reinforcement.

Elsewhere, Chomsky argued that a sentence could not be construed as simply a chain of associations between individual words, as some behaviorists had argued. Drawing upon Lashley’s (1951) essay, Chomsky asserted that such simple associative links could not adequately explain our knowledge of language. One of his celebrated examples was the sentence, “Colorless green ideas sleep furiously” (Chomsky, 1957). Chomsky observed that even though there are no associations between these words, language users recognize that the sentence is syntactically acceptable in a way that the same set of words presented backwards would not be. Similarly, in the sentence “George picked the baby up” people recognize that the words “pick” and “up” are part of a grammatical unit or constituent, even though the words are separated by “the baby.” The presence of connections between words separated in a sentence—which linguists called discontinuous constituents—again posed a problem for behaviorist accounts.

Chomsky also argued that language acquisition could not be explained simply in terms of the child’s language experience. He argued that there is not enough information in the language children hear to fully explain the complexity of children’s language. Children are exposed, Chomsky claimed, to ungrammatical sentences, false starts, and other examples of limited language and yet nonetheless are able to develop a remarkable set of language skills, with some exceptions, within their first few years of life. This argument is called the poverty of stimulus argument (Chomsky, 1980).
Chomsky’s arguments had a powerful effect on psychological thinking about language and he invited psychologists interested in cognition to pursue the study of language (Chomsky, 1968): “the study of language may very well, as was traditionally supposed, provide a remarkably favorable perspective for the study of human mental processes” (p. 98). In fact, Chomsky asserted that linguistics could be profitably viewed as a branch of cognitive psychology. The notion was that a person who had acquired a language had formed something that is “psychologically equivalent” to the kind of grammar that Chomsky and other linguists described (Slobin, 1971).

George Miller created an important bridge between psychology and linguistics by introducing psychologists to Chomsky’s ideas and their psychological implications. Miller collaborated with Chomsky on several articles and papers in the early 1960s (for example, Miller & Chomsky, 1963) and was at the forefront of research during this period to determine the psychological reality of linguistic rules (see, for instance, Miller & Isard, 1963).

Imagery

Visual imagery was a topic of interest for psychologists in the nineteenth century. Sir Francis Galton (1880) asked people to describe their images and to rate them for their vividness. The reports suggest that people thought of these images as pictures in their head and could report color, texture, and other attributes. He also found substantial individual differences in the reports, with some respondents reporting something akin to a photograph and others having more sketchy images. However, as we have already seen, it was difficult to take these introspective reports at face value. It was difficult to know how much of the differences in people’s reports were due to differences in experience as opposed to differences in ways of verbally describing their experience. Clearly, we needed a more objective way of getting at imagery.

It would be almost a century before psychologists conceived of the idea of using reaction time to measure mental images. In particular, Roger Shepard and Jacqueline Metzler (1971) were interested in how long it took individuals to rotate mental images. They created visual displays consisting of blocks arranged in different shapes and presented participants with one such stimulus, then a second one, and recorded how long it took them to decide if it was the same. They found that the time taken to respond corresponded to how much they had to rotate one image to match the other one. In essence, mental rotation seemed to be similar to physical rotation: the longer the rotation needed, the longer it took.

Soon psychologists began exploring other aspects of mental images. In an ingenious study, Kosslyn (1976) asked participants to form a mental image of a cat and then asked them a series of questions such as whether the cat has a head, whether it has claws, and so on. Of course, these were easy questions and participants responded very quickly. Tellingly, however, they were quicker to answer the head question than the claw question. This is presumably because the head appears larger in a visual image than the claws, and thus we are faster at retrieving this information from the visual image. Interestingly, when a different group of participants was asked to merely think about cats, rather than form a visual image of one, they were faster on the claws question than the head question. Thus, forming an image is a different way of processing information than thinking about it verbally.

These studies were successful because they found ways of objectively measuring how we deal with imagery. In some cases, they employed methodology similar to that previously employed in studies of nonhuman animals. For example, drawing upon Tolman’s studies of cognitive maps in rats, Kosslyn, Pick, and Fariello (1974) asked children and adults to learn where a set of objects belonged in an experimental space. After the participants learned the space, they were asked to rank the
distance between different pairs of objects within the space. The results suggested that both children and adults learned a cognitive map of their environment.

Problem solving

As we have seen, Newell and Simon began a program of research in the computer simulation of human problem solving. One of the problems they studied was chess. There has been longstanding fascination with the limits of artificial intelligence as well as the question of whether a computer could “beat” an accomplished chess player. Newell and Simon, however, were more interested in the question of whether their computer program could simulate a human chess player, one with both strengths and weaknesses.

Newell and Simon (1972) distinguished between algorithms and heuristics. An algorithm was a process that, if implemented correctly, would always lead to a successful solution. For example, a computer program could consider an unlimited number of chess moves and determine which one would produce the best outcome. But humans do not have the memory capacity for such an exhaustive analysis; the performance of a computer program of this sort would reveal little about human cognition.

In contrast, a heuristic is a shortcut or rule of thumb that works much of the time, but is hardly foolproof. Newell and Simon suggested that humans routinely use heuristics when solving problems. For example, a helpful heuristic in chess would be to protect important pieces, such as the queen. Such moves, while not guaranteed to be successful—they might leave a player vulnerable to other attacks—are more in line with what we know about accomplished chess players than an algorithmic approach. By incorporating heuristics into their programs, Newell and Simon were able to effectively simulate human problem solving on various problem-solving tasks. Heuristics have also been investigated in studies of judgment and decision-making, particularly by the team of Daniel Kahneman and Amos Tversky (see Vignette 2: Thinking fast and slow).

Another area of inquiry that was reinvigorated was the study of reasoning. The British psychologist Peter Wason (1968) presented college students with a deceptively simple task. He gave them four cards with the letters E, K, 4, and 7, and a rule, “If a card has a vowel on one side, then it has an even number on the other side.” The participants were asked to identify those cards necessary to determine whether the rule was true or false. The task proved to be quite challenging: 96% of participants gave the wrong answer, which was E and 7. Participants who tried to confirm their hypotheses chose either E alone or E and 4. This is an example of confirmation bias, which is a tendency to be more sensitive to evidence that confirms our beliefs. Confirmation bias is a common occurrence in problem solving tasks. Instead of confronting facts that might challenge our preexisting beliefs, we look for evidence that supports these beliefs (Wason & Johnson-Laird, 1972).

Summary

The study of cognition has flourished in recent decades, after a period of relative neglect, as the digital computer has provided a model for human cognition. Some historians have termed the shift from the behaviorist model to the cognitive model as the cognitive revolution (Baars, 1986; Gardner, 1985). At the same time, other historians (Greenwood, 1999; Leahey, 1992) have criticized this characterization (see Vignette 3, Was there a cognitive revolution?).
Vignettes

1. Alan Turing, Code Breaker and Computer Scientist

Alan Turing is regarded as the pioneer of computer science, a term that did not exist in his lifetime. Nonetheless, given the ubiquity of computers in our contemporary understanding of the human mind, Turing in his brief life made a number of significant contributions to our knowledge of how computers work and to what extent they can be considered a model for human mental processes.

Turing was born in England in 1912. In 1936, shortly after graduating from Kings College, Cambridge, Turing developed what has come to be called the Turing machine (Hodges, 2012). The idea of the machine was that a set of tasks could be implemented mechanically: the machine received data as input and with the stored algorithms and formulas provided outputs mechanically. Because the number of formulas and data were essentially unlimited, it was sometimes referred to as a Universal Turing Machine. It provided at that early date the first model for a general-purpose computer. It would be nine years later that the idea of the Turing machine would be developed electronically. Nonetheless, Turing’s contribution was profound. He recognized that symbols could represent not only numbers, but instructions as well. In essence, he invented the concept of software (Hodges, 2012).

In 1939, when Great Britain entered World War II, Turing lent his expertise to British intelligence efforts at Bletchley Park, Britain’s cryptanalytic headquarters. Building upon the work of Polish mathematicians, Turing deciphered Enigma, the system that Germans used for wartime communications (Hodges, 2012). Dwight Eisenhower, western Supreme Allied Commander, described Turing’s work as decisive to the Allied victory. Sixty-five years later, Turing’s accomplishment received worldwide attention with the release of the film The Imitation Game in 2014.

Turing is perhaps best known for the Turing test. In a paper entitled, “Computing machinery and intelligence,” Turing (1950) addressed the question of artificial intelligence. In the article he proposed a test to assess whether or not a machine could be considered intelligent. For Turing, the issue wasn’t whether machines could think. It was whether they could think in a manner that was indistinguishable from human beings. Turing suggested a variation on a party game, in which there are two individuals, a man (player A) and a woman (B), along with an interrogator (C). C asks questions of A and B and, solely on the basis of the answers, tries to determine if A or B was a man or woman.

In Turing’s variation, a machine plays the part of A. The question becomes whether a human interrogator could determine if the answers received have come from a human being or a machine. The interrogator types questions into a computer terminal, receives answers, and tries to distinguish the answers from A and B. If the interrogator is unable to do so, Turing reasoned, then the machine has demonstrated human-like intelligence.

A variation on the Turing test is familiar to many contemporary computer users. CAPTCHA is a program that is designed to distinguish between humans and robots. It presents a person with a set of wavy letters and numbers and the user is asked to type the sequence into the box below. Since this is a skill that current robots are unable to perform (at least in late 2016), CAPTCHA essentially prevents robotic intrusion into various web sites.

Turing (1950, p. 442) hypothesized that in “about fifty years” a computer could “play the imitation game so well that an average interrogator will not have more than a 70 percent chance of making the right identification after five minutes of questioning.” He also asserted “I believe at the end of
the century the use of words and general educated opinion will have altered so much that one will be able to speak of machines thinking without expecting to be contradicted.” A little more than 50 years after Turing’s work, we may reflect on whether the machines that inhabit our current environment meet that standard.

2. Thinking Fast and Slow
Psychologist Daniel Kahneman, often with collaborator Amos Tversky, has conducted extensive research on human judgment and decision making under conditions of uncertainty. Kahneman and Tversky produced experimental evidence suggesting that humans have a number of cognitive biases that influence their judgment.

One such bias is called the availability bias. The idea is that our judgment of the frequency of an event is influenced by the ease with which we can retrieve examples of the event from memory. In one study, participants were asked if there were more words that began with the letter “r” (e.g., rabbit) or more that had the letter “r” in the third position (e.g., throw)? Most participants asserted that there were more words that began with “r,” even though the reverse is true by a margin of two to one (Tversky & Kahneman, 1973). The explanation should be familiar to anyone who has played Scrabble: we typically organize our mental dictionaries by first letters, thus making it easier to recall words that begin with a particular letter. When it is easier to recall examples, we judge the frequency of an event as more common.

The availability bias is also at play when people are asked to judge the frequency of different causes of death. For example, people overestimate the frequency of lung cancer and underestimate the frequency of stomach cancer, presumably because the former receives far greater media attention (Lichtenstein, Slovic, Fischhoff, Lichtenstein, Layman, & Combs, 1978). Similarly, people often assume that airplane crashes are more common than they are, because they receive significant media coverage when they (infrequently) occur.

Another example deals with framing effects. People are asked to imagine that the United States is prepared for the outbreak of an unusual disease expected to kill 600 people. Two programs to combat the disease have been proposed. If program A is adopted, 200 people will be saved. If program B is adopted, there is a one-third probability that 600 people will be saved and a two-thirds probability that no people will be saved. In this scenario, a substantial majority of participants choose program A.

Now consider a different way of framing the alternatives. If program A is adopted, 400 will die whereas if program B is adopted, there is a one-third probability that nobody will die and a two-thirds probability that 600 people will die. Now the majority of participants choose program B. There is, however, no difference in the outcomes; they are merely framed in different ways. That is, if 200 people are saved, then 400 people will die. Despite the identical outcomes, people are very sensitive to the way that outcomes are presented to them and their judgments vary accordingly (Tversky & Kahneman, 1987).

Such findings challenged the assumption of human rationality embedded in economic utility theory. Utility theory asserts that we make rational decisions based on the utility of various outcomes. Kahneman and Tversky argued that cognitive biases disrupted any rational assessment of outcomes, leading us to making decisions that have been characterized as intuitive, emotional, and spontaneous.

In his 2011 book, Thinking fast and slow, Kahneman pulled together much of his work. He identified two different systems of thinking. System 1 is fast, automatic, and emotional. Some of the activities
that Kahneman attributes to System 1 include detecting that one object is closer than another, making a “disgust” face when shown a horrible picture, and detecting hostility in a voice. These are activities that are automatic and require little or no effort or attention.

In contrast, System 2 is slow, effortful, and conscious. System 2 is involved in activities such as focusing on the voice of a particular person in a crowded and noisy room, maintaining a faster walking speed than you normally do, and comparing two washing machines for overall value. In these situations, you need to pay attention, and will perform poorly if you are not ready or if your attention is deployed inappropriately.

System 1 is responsible for the biases that Kahneman and Tversky uncovered. However, it can be seen to be adaptive in that it is a speedy system that provides heuristics (i.e., rules of thumb that work some but not all of the time). In contrast, System 2 may enable better decisions, but it requires time and effort. According to Kahneman, System 1 makes the vast majority of the decisions we make in everyday life. We may like to think we are making rational decisions, but more often than not we are merely offering rationalizations of System 1 judgments that we have already made.

Kahneman received the 2002 Nobel Memorial Prize for Economic Sciences (shared with Vernon L. Smith) for his insights into human judgment and decision-making under uncertainty. It is not hard to see why marketing professionals, who are always looking for ways to influence the buying decisions of consumers, might be interested in his research. Advertisers seek to influence System 1 by presenting commercials with images and music designed to influence our immediate impressions and hence our subsequent decisions, in ways that are largely beneath conscious awareness.

The research is also a significant contribution to our understanding of human cognition. We know that humans are not logical at all times and there is considerable evidence that people often make logical and statistical errors in problem solving and decision tasks. But often there was a lack of clear definition of what people were doing when they were making these mistakes. Kahneman has clearly delineated the type of thinking we are doing when we fall short of rational thought.

3. Was There a Cognitive Revolution?

A common claim in textbook histories of psychology is that psychology experienced a cognitive revolution in the 1950s. The idea that is most commonly expressed is that the second quarter of the twentieth century was dominated by behaviorism, particularly in the United States, and that a series of events led to a fundamental shift in psychology with cognitive psychology displacing behaviorism as the dominant paradigm of experimental psychology.

In his estimable book, The Cognitive Revolution in Psychology, Bernard Baars (1986) interviewed a number of psychologists who were pivotal in these developments. Several reported that they had been trained as behaviorists but swung to the cognitive side during this period. Also, at about the same time, the philosopher of science Thomas Kuhn (1962) published a book entitled, The Structure of Scientific Revolutions. Kuhn’s main thesis was that scientists typically operate within a particular paradigm. Scientific revolutions occur, according to Kuhn, when an anomaly occurs—a result that cannot easily be explained within the prevailing paradigm. This leads to a revolutionary paradigm shift, in which the earlier paradigm is discarded and a new paradigm is adopted. James Jenkins, one of the participants that Baars interviewed, recalled that during this period “everyone toted around their little copy of Kuhn” (Baars, 1986, p. 249).
There are, however, reasons to doubt that the cognitive revolution fits Kuhn’s notion of a scientific revolution (see Greenwood, 1999; Leahey, 1992 for similar reservations). First, Kuhn (p. 160) never intended the concept to apply to the social sciences and explicitly identified psychology as a pre-paradigmatic field. In Kuhn’s view, psychology had not yet developed into a mature science with well-defined paradigms.

Second, there were important continuities between cognitive psychology and behaviorism, particularly in methodology. Cognitivists had no more use for introspection than the behaviorists; instead, they adopted behaviorist methods and repurposed them for their own use. Miller, Galanter, and Pribram (1960) developed a theory of planning and imagery based in part on Tolman’s (1948) studies of spatial learning in rats and Krechevsky’s (1932) studies of hypotheses in rats served as a model for Bruner, Goodnow, and Austin’s (1956) research on concept learning. In the 1960s, cognitive psychologists often borrowed methodology from behaviorists and then—with scientific discussion of cognition now considered respectable—used the observed behavior to infer cognitive processes, rather than stimulus-response connections.

At the same time, the emergence of computer programs enabled psychologists to develop and test their theories of cognitive processes, and this approach was a radical departure from conventional research methods. But Greenwood (2009) has persuasively argued that psychologists never really embraced computer simulation as a means of testing theories. Computer simulation provided a degree of legitimacy to cognitive studies, which was important at that historical moment. But experimental psychologists still were most committed to running experiments, collecting data, and drawing inferences regarding cognitive functioning.

Third, if the Kuhnian thesis was correct, cognitive psychology should have displaced behavior analysis. However, behavior analysis retains a significant place in contemporary psychology. Certainly, some of the more extravagant claims of some learning theorists in the 1930s—the notion that all behavior consists of stimulus-response connections, that all behavior is learned, and that the learning processes studied in laboratory animals may generalize without exception to human beings—needed to be revised, and contemporary behaviorists are less prone to consider behaviorist studies the theoretical foundation of all psychology. Nonetheless, there are many psychologists who adhere strongly to the behaviorist tradition. In particular, the field of applied behavior analysis remains a vital area of research and application.

These observations suggest that although there was a shift in the research priorities of experimental psychologists around the middle of the twentieth century, it is inappropriate to characterize the shift as a revolution, at least in the sense that Kuhn presented it. If so, why then is this notion a common way of expressing the changes that psychology (again, primarily in America) experienced in the middle of the twentieth century? Perhaps a clue comes from Baars’ book. He interviewed many of the giants of cognitive psychology at the time. These interviews are fascinating to read and the first-person accounts provide invaluable nuggets that would not be otherwise available.

Nonetheless, there is a danger in drawing conclusions about historical developments from those who were active participants in that era. It is no doubt attractive to think of oneself as a revolutionary and there may be a tendency among participants to draw the distinction in the strongest form possible. Moreover, as Baars (1986) recognizes, historical narratives are often shaped by contemporary points of view. A cautious approach would be to consider first-person accounts in connection with other forms of data. For example, a study of research trends found some evidence of displacement from behaviorist to cognitive models but somewhat later (in the early 1970s) than most accounts of the cognitive revolution (Robins, Gosling, & Craik, 1999). The
best approach to historical scholarship, as with most other types of research, is to combine different methods.

References


A Brief History of the Psychological Study of the Role(s) of Religion

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Contemporary principles and tools of psychology explore human (and sometimes infrahuman) thinking and behavior by design. That means that there is a psychological story to tell with regard to everything people believe or do. One of the most enduring stories with regard to humans is that of religion. The present chapter offers one way of describing how psychologists have come to understand the psychological features and ramifications of such belief systems.

Which Story to Tell?

It would be easy to start by stretching back to the beginning of recorded history and then push yet a bit further. Such a way of doing history is not at all uncommon, and the roots of psychology are frequently proclaimed as evident in those earliest years (Hergenhahn & Henley, 2013; Wertheimer, 2012). When psychology has as its subject matter systems of faith, the temptation to take that approach is increased because religious ways of thinking have been around for at least the same length of time.

The press for a very, very long-term view of psychology’s perspective on religion exponentially expands if one considers history outside of a Western context. For instance, there are highly developed and substantially varied Hindu and Buddhist systems that articulate theories concerning how metaphysical forces and principles define the nature of reality and the characteristics of human thought and behavior. For the sake of this overview, such approaches are considered religious (as distinguished from philosophical) systems. This oversimplification should be carefully considered and most likely supplanted by more nuanced treatments of the systems of thought for other types of reviews or investigations. Another compelling reason to attempt such a sweeping saga is that it provides a mechanism for recounting the intellectual history of how science and religion emerged, developed, conflicted, and cooperated. All of these features are important in their own right, and we want to tell all of these stories. But we won’t, at least not here.

We will start, instead, from the point where psychology’s self-identification begins in the late 1800s. Within those boundaries, the most succinct version of the history of the psychology of religion (PoR) is similar to a magic show: Now you see it. Now you don’t. Now it’s back again.

The Emergence of a Psychology of Religion

When psychology cut its disciplinary teeth, none of the founders had a background in the discipline, because it obviously did not yet exist. This meant their training was in other already established academic spheres. With an early emphasis on topics such as sensation and perception, people with physics backgrounds were some of the pioneers. Questions of belief systems did not constitute a central concern for most of the early psychophysicists, but such questions were present in the broad intellectual environment leading into the era of psychology’s emergence as a field of inquiry (Simonyi, 2012). More common among the early group of scholars who wanted to know more about religion’s influence was a background steeped in either philosophy or in theology. This is, of course, not at all surprising. People with this sort of intellectual bent were already inherently interested in facets of the human experience such as logic, character development, ethics, morality, social interactions, ritual, world religions, and related spheres. What they began to do as psychologists was to transform their initial fields of study into the objects of psychological investigation. In other words, they stepped away from their personal background
positions and began to critically assess how those theological and philosophical perspectives were psychologically possible and influential.

This transition was not perfectly smooth. At the same moment that psychology attempted to establish itself as a reputable science, a significant number of the founders often conflated their personal beliefs with their descriptions of psychological principles. While not universally the case, this situation was prevalent enough to color the early history of psychology in general and the psychological study of religion in particular. Consider, for instance, that Gustav Fechner (1801–1887) wrote the field-defining *Elemente der Psychophysik* [Elements of Psychophysics] (Fechner, 1860) but also penned mystical works such as *Nanna: Oder, Über das Seelenleben der Pflanzen* [Nanna: or, concerning the soul-life of plants] (Fechner, 1848). The former included foundational principles of experimental methods while the latter delved into the decidedly less tangible topic of vegetative awareness.

Another example of an individual in this situation is G. Stanley Hall. Hall, who wrote *Adolescence; its Psychology and its Relations to Physiology, Anthropology, Sociology, Sex, Crime, Religion and Education* (1904) and *Jesus, the Christ, in the Light of Psychology* (1917), completed his doctoral education at Harvard in 1878; his was the first doctorate in psychology in the US (Thorn & Henley, 2001). During his time of study toward the PhD, he worked with a new assistant professor of psychology, William James, who was well known for his early championing of psychology in the US.

Hall’s own position as the first president of the American Psychological Association (1892) signaled his leadership in the emerging field, so eyes were definitely on his way of conceptualizing the nascent psychological discipline. When his first PhD student, Edwin Starbuck, completed his work in 1897, it was not a random event; James had sent Starbuck to Hall. Starbuck’s was the first dissertation to deal with a topic related to religion: adolescent conversions. Notable as one of the first surveys to be conducted in the field, Starbuck’s work appeared as the first book in the domain of the psychology of religion with the title, *The Psychology of Religion: An Empirical Study of the Growth of Religious Consciousness* (1901). William James composed the preface to Starbuck’s book.

It is clear that Starbuck’s work spurred James’ efforts to compose his own seminal volume, the *Varieties of Religious Experience* (1902), a text remaining in print continuously since its first appearance.

And so goes this first wave of the PoR in the US. Wulff (1998) notes of this first wave, that in spite of the interest specifically within psychology, the early history is heavily tilted toward scholars in religious contexts. In that sense, Wulff (1998) also argues that, strictly speaking, the number of psychologists was not exceptionally large. While that is true, it is also the case that the psychologists involved in the area were high profile individuals who helped set a tone for the field. Nonetheless, Wulff (1998) is correct with regard to the kinds of scholars active in the early period, and it is little wonder that those days were filled with investigations of the psychological role of religious beliefs and behaviors such as the practice of prayer (see Spilka & Ladd, 2013 for an overview).

**Psychology of Religion Growing Pains**

The variety of psychology coming out of natural science traditions was gaining momentum for scientific psychology from the 1920s and forward. This press included Behaviorism, and interest in religion faded into the background (Hunsberger, 1991) along with a host of other early topics such as consciousness and emotion. A key observation at this point in time was the impossibility of randomly assigning people to experimental conditions reflecting positions and lives of faith. In addition, concepts such as faith staunchly resist attempts at operational definition. Without the
ability to randomize or otherwise experimentally control faith adherence or other aspects of belief, there was little merit seen in keeping this domain of study alive within experimental psychology.

One example of this shifting tide of interest is the fact that G. Stanley Hall’s *American Journal of Religious Psychology and Education*, founded in 1904, ceased publication after roughly two decades and was never revived.

Although the interest of psychologists at large took a hard turn away from investigations of religious beliefs and similar topics in the 1920’s (Wulff, 1998), this shift did not mean an end to the psychology of religion. Though this era saw the birth of several national groups endorsing atheism (e.g., American Association for the Advancement of Atheism, 1925), that position was a minority one (Shulman, 1981), so the psychological facets of those beliefs remained important to understand. Finding no favor and often outright derision or hostility within mainstream psychology (Slife & Reber, 2009; Wulff, 1991) or even high-profile psychology departments, scholars who advocated this psychological study of religious topics ended up being welcomed into rather specific work environments such as seminaries.

Other researchers found positions at smaller, liberal arts schools where it was perennially more challenging to recruit faculty; this trend has only recently begun to shift, with PoR faculty at major research universities remaining a distinct minority. The tradeoff for faculty was a more rigorous teaching load, typically at least three and often four courses per semester. The emphasis on teaching inherently affected the conduct of research simply due to constraints of time. With no graduate students to form a core research team, the pace of productivity was not rapid. Because the topics often served the interests of the occasional exceptional undergraduate student, there were relatively few instances of programmatic research sustained over multiple years. One notable exception is Ralph Hood’s (Hood & Williamson, 2008) work concerning serpent handling groups.

One outcome of this situation was a proliferation of “one-off” publications that rarely attracted replication attempts or sustained refinement. A common feature of these studies including the introduction of new scales to measure various concepts. Before long, the field contained a substantial number of ways to measure similar constructs, but the collective reliability and validity of these measurement tools remained dubious (Gorsuch, 1984). In short, the field developed in fits and starts with no grand consensus around theoretical or methodological aspects.

One reason this liberal arts atmosphere was receptive to the PoR was that many of these institutions received support, at least nominally, from religious organizations. This sponsorship was by no means a free pass for PoR to come to all campuses, however, because some religious traditions did not endorse psychology in general, let alone a psychology that took religion as subject matter. For instance, there were fears regarding reductionism in regards to psychology’s approach to religion, and often a broader, general distrust toward psychologists studying religion (Wulff, 1991). When the discipline found a home on campus, sometimes it was in order to explicitly (but more often implicitly) develop a particular kind of theologically informed and transformed psychology, an “integrated” psychology (Gorsuch, 2002).

Beyond the liberal arts context, there were also a number of seminaries where psychological perspectives concerning religion were in evidence. For instance, one of the nation’s oldest seminaries, Princeton Theological Seminary (founded 1812) included a specialization in psychology as early as 1961 when Seward Hiltner arrived on the campus, following a stint as professor of pastoral theology at the Divinity School, University of Chicago (Beeners, Kerr, & Lapsley, 1986). Here, the emphasis was typically on pastoral counseling as reflected by the Council for the Clinical Training of Theological Students (established 1925), though some attended to developmental psychology with regard to educational practices (Hunsberger, 1991). As with the primarily
undergraduate institutions, the way psychology blended into the curriculum exhibited wide variability.

By the era of the 1950s and 60s, to support what was more than a cottage industry but less than a full bodied revolution, journals such as the *Journal for the Scientific Study of Religion* (JSSR; 1961), *Review of Religious Research* (RRR; 1959) and *Pastoral Psychology* (1950) began to publish work not only from psychologists, but across multiple disciplines. It would take a bit longer, but the field expanded incrementally, and by the early 1990s, the long-dormant, now officially tri-lingual *Archiv für Religionspsychologie* (founded in 1914) and the *International Journal for the Psychology of Religion* (1991) would have sufficient submissions to support their existence.

In addition to the success of these 1950s-era journals as indicators of a solidifying field, various professional organizations also emerged. Allied with the Archiv, in the early 1960s, the International Association for the Psychology of Religion reorganized, faltered, then emerged again as a more robust organization in 1995. The JSSR and RRR were part of the Society for the Scientific Study of Religion and the Religious Research Association, respectively. During this initial renaissance, what began as a special interest group (American Catholic Psychological Association; 1946) morphed into Division 36 (1976) in the American Psychological Association. The same era saw the formation of the Christian Association for Psychological Studies (1956).

This series of events makes clear that the trajectory of psychological interest in religious beliefs and behaviors paralleled the more general interest in reconstituting a cognitive psychology that would bravely peer into Behaviorism’s black box conceptualization of the human (Neisser, 1967). In the process of re-emerging, it was also clear that there was no longer a single variety of the PoR, if indeed there ever was. Instead, there were some strands with roots in faith traditions and other facets more firmly associated with secular backgrounds.

**A Field Reinvigorated**

Once the cognitive revolution had asserted itself as a significant force in psychology, the study of religion from a psychological perspective was firmly back on the table. Published literature reached a point where large scale publishers produced major books dealing with topics and history (Spilka, Hood, & Gorsuch, 1985; Wulff, 1991). The staying power of the field is underscored by the fact that the former text is now under contract to enter its fifth edition (Hood, Hill, & Spilka, in preparation). At the present point in time, the depth of interest is apparent in the wide array of mainstream psychological topics that are under investigation with regard to religious and spiritual facets. Another indicator of the health of the field is a proliferation of journals, books, and treatment manuals, all from publishers at the heart of psychology. One of the cornerstone publications in this instance is the massive two volume set, the *APA Handbook of Psychology, Religion, and Spirituality*, recently released by the American Psychological Association (Pargament, et al, 2013a; 2013b).

**Psychology of Religion Beyond the US**

The interest expands beyond the US. There are examples of development in Australia (O’Connor, 1991), Brazil (Esperandio & Marques, 2014), Canada (Hunsberger, 1991), China (Yongsheng, Henghao & Liqing, 2006), Italy (Aletti, 1992), Netherlands (Belzen, 1994), Poland (Grzymala-Moszczynska, 1991), Scandinavia (Wikstrom, 1993) and many other locations around the globe including Belgium, Denmark, India, Sweden, Turkey, and the United Kingdom (Koç, 2012; Saroglou & Cohen, 2011; Wikstrom, 1993). Each of these initiatives has unique hallmarks arising from its specific context, for instance, African belief traditions are of interest in Brazil, where the melding of faith practices creates opportunities for research not available elsewhere.
Cross-Cultural Challenges
There is no guarantee, however, that those culturally unique hallmarks will last indefinitely. The cautions of Kumar (2010) with regard to Indian psychology hold true for the PoR as well. He notes three distinct ways of approaching cross-cultural work: indigenization, indigenous, and Indian. The first involves adapting Western psychology to non-Western contexts, while the second refers to developing psychological principles within particular cultural contexts. Kumar’s third option suggests a unique form of psychology based explicitly on Indian thought in and of itself. There is a danger that in the rush to expand fields and publish articles, often with an emphasis on Western outlets, truly indigenous or more localized psychologies of religion can be significantly changed or even lost (Watters, 2010). The case of India is instructive. Dalal (2011) contends that Indian psychology closely followed British notions until Indian independence (1947). After that time, psychological thinking began to reflect more national/indigenous experiences and concerns. This two-fold nature of thought remains evident. For instance, in 2015, a celebration at Calcutta University honored the centenary of psychology in India. The event included presentations concerning work in the PoR from two distinct perspectives. On one hand, presentations paid homage to an experimental approach to the topic, dating back to the work of Wundt and others, but also including contemporary efforts (Kamble, 2015; Ladd, Ladd, & Sahai, 2015). On the other hand, speakers called for a more distinctly Indian PoR that draws inspiration and guidance from Indian philosophical work (Rao, 2015). These two streams are quite similar in nature to those described above with regard to the PoR vantage points in the US and there is concern among some scholars that the former orientation may be supplanting the latter.

It is not necessarily surprising to find some form of the PoR field in India with its rich historical tapestry of traditions, but it is more intriguing to encounter a growing interest within China. One recent paradigm explores China as a largely atheistic setting in which the presence or absence of belief systems would provide evidence concerning a natural human propensity concerning belief. Another development in China is a desire to train more social workers in the area of spirituality in order to promote mental health.

In both these and other locations outside the US, a potential problem revolves around measurement issues. It is a relatively quick process to take a scale in English and translate it into some other language for administration. In doing so, however, there is no guarantee of measuring anything other than the extent to which English speaking people in country X know how to answer questions like English speaking people in the scale’s country of origin. For example, in China the extent and variety of religious activities shift depending on the operationalization of religion (Kipnis, 2001). To avoid discrepancies like those that come from forcing Western methodologies into non-Western contexts, the alternative is to develop fields more slowly from within, but comparatively few researchers feel they have the luxury of time. Without taking the time, however, we will never know what we are suppressing and potentially eradicating forever.

Diversifying the Story
Since moving into the 21st century, this uptick in the PoR has captured the attention of prominent research universities and scholars around the globe. The cyclical nature of history is a powerful force. Moving toward re-integration within the mainstream of psychology has yielded mixed effects. In some instances, the topic is treated with relative naiveté, as though it has just now come into existence. In other situations, such as the cognitive science of religion, there are deeper conversations because psychologists regularly work alongside anthropologists, religious studies scholars, theologians, sociologists, economists, linguists and virtually any other expert interested in
the origins and effects of religious beliefs. By emphasizing a transdisciplinary, team-oriented approach, investigations concerning cognitive aspects of belief (e.g., belief origins, contents, and modifications) occur at levels from brain physiology to metaphysics. This breadth and depth helps to avoid narrow definitions and simple explanations (Barrett, 2007; Van Slyke, 2013).

An alternative way of telling the story is currently gaining popularity under the rubric of culture. Under this banner, there is a burgeoning interest in the lives of people who are not connected to any sort of religious tradition. In some cases, these individuals still report a personalized spirituality that looks and functions much like religion but without any formal, external framework (Hout & Fischer, 2002; Ladd & Ladd, 2012; Marler & Hadaway, 2002; Schnell, 2012; Streib & Hood, 2016; Zinnbauer et al., 1997). In other instances, people simply report that neither religion nor spirituality has a role in their thinking or behaving (Hunsberger & Altemeyer, 2006). The epic saga of religion has many faces, and surely there will be other approaches to follow.

To some extent, the quick resurgence of interest is linked to funding opportunities. At precisely the time when federal and other large scale sources of research generally reduced support, the John Templeton Foundation (The John Templeton Foundation, n.d.) was coming of age. Begun in 1987 by the billionaire investment manager, Sir John Templeton, this multi-faceted organization specializes in funding investigations asking big questions at the interface of science and religion. The availability of hundreds of millions of dollars in the PoR domain, persuaded a number of researchers to turn their collective attention to moral development, thrift, health care, wisdom, humility, curiosity, and similar topics with clear links to psychological principles.

The Story’s Future

It is sometimes said of psychology that we never solve any problems but that we just get tired of talking about them. There may come a time when the PoR again slips off the radar of mainstream psychology. Yet the predictions of religion’s demise have been incorrect thus far (Stark, 1999), though there is a slight shifting in formal affiliation status (Pew Research Center, 2015). It is likely that people, probably including even some psychologists, will continue to endorse religious beliefs and engage in belief-related behaviors (Davie, 2002), perhaps as a result of genetic constraints (Saroglou, 2012). If that proves to be the case, then the psychological investigation of those facets of human existence will persevere as well.

Vignettes

1. Edwin Starbuck

Edwin Starbuck’s seminal work at the start of his career is outlined earlier in this chapter. One additional facet bears mentioning with regard to PoR history. Relatively early in his work in Iowa and later in California, Starbuck actively thought about how to apply PoR findings to the betterment of lives, especially those of children. To that end, he created institutes addressing character research at the University of Iowa and the University of Southern California. In addition to active journals, the institutes engaged in educational outreach programs eventually including a series of books (Booth, 1981). Starbuck’s first foray into this area included a series of three books (Starbuck, 1930, 1930b, 1930c) that carefully culled from fairy tales those stories deemed most instructive with regard to character, desirable behaviors, and decision-making skills.

The next series (e.g., Starbuck, 1936a, 1936b, 1936c, 1939) contained many brief chapters presenting clear, readable biographies of famous and some not-so-famous people. In the preface, Starbuck states, “This book is different” (Starbuck, 1936a, iii), by which he means that he used a
highly systematized process to select materials for inclusion. He then outlines the systematic process used to select the included material. For instance, an eight person team evaluated more than 5,000 volumes of biographies written since the era of Plutarch. This team further consulted with literary critics to develop objective, empirical criteria for pinpointing the best content and style of biographical writing. The targeted chapters were subsequently field tested and vocabulary checked prior to inclusion. In short, Starbuck invested extensive effort to make these books optimally useful to parents, educators, and children.

In addition, Starbuck and Shuttleworth (1928) created a stand-alone index that provided interested parties with references to character enhancing readings for children on various topics: honesty; loyalty; fear; and so forth. He opens the volume with a quotation from Plato: “And shall we just carelessly allow children to hear any casual tale which may be devised by casual persons, and to receive into their minds for the most part the very opposite of those which we wish them to have when they are grown up? We cannot....” With this quotation, Starbuck makes his forceful point that the content of childhood stories is critically related to adult beliefs and behaviors. It is imperative to select the stories encountered with great care as opposed to allowing “casual” or relatively uninformed, random principles to dictate exposure. An extensive introduction describes how to systematically judge the worth of literature, with a heavy emphasis on implicit and explicit morality. The author’s intention was that these books would serve as resources for parents and educators to inculcate values in children. To simplify this task, the authors arranged the text by grade level, by attitudes of the story (e.g., Is the story about loyalty, love, service, work, or some other virtue?), by title, and by author.

This type of proactive character development is a clear predecessor of what is now referred to under the rubric of “positive psychology” with its humanistic interpretation of core beliefs and values advocated within various belief traditions. For instance, Peterson and Seligman (2004) constructed a system that identifies character strengths and virtues that are quite similar to those presented by Starbuck in his various books. Placed in this context, it is easy to argue that Starbuck deserves significant credit at the very beginning of psychology and PoR in particular with having begun and nurtured the “positive psychology” movement that is popular today.

2. Prayer

Red herrings are topics, methods, or events that capture people’s attention with a siren song, luring them away from other areas of work that might well be much more intellectually profitable. One such area in the PoR is the use of non-experimental methods to support conclusions regarding cause and effect relations between variables. An example of the problem might look like this. I wonder if people who pray frequently live longer than people who do not pray as often? To test this idea, I ask people to tell me how often they pray, then I wait a few decades all the while recording dates of death for people in the sample. Next, I correlate the variables (frequency of prayer and length of life) to see if the relation is or is not statistically meaningful. Finally, I make a claim that prayer either increases, decreases or has no effect on life span. The process moved along fine until I got to the claiming stage. It is imperative to remember that a correlation, whether positive (the variables increase or decrease together), negative (one variable increases while the other decreases), or unrelated (no predictable patterns of increasing or decreasing values), is simply a mathematical relation and not a causal relation. Any number of other variables, such as eating habits or gender, can influence the value of a correlation without the researcher noticing, so it is not possible to claim that the two variables that I measured have a causal relation; I cannot logically claim that more prayer causes longer life or that longer life causes more prayer (or any of the other permutations of relations).
To push this a bit further, it is also important to be aware of the seductive nature of variables such as frequency of prayer. Unless the frequency is intentionally designated by the experimenter, the frequency of praying is a participant variable (not a true independent variable) that is occurring freely in nature and experimenters are not able to pinpoint precisely why the praying is occurring. This introduces a lot of room for error during interpretation. In addition, even if the researcher attempts to specify the amount of prayer, is it possible to prevent a person in the control group from praying or from being prayed for by someone else? No, it is not. A related problem is sometimes called a “dose effect” noting that different amounts of interventions have different effects (e.g., more aspirin has a different effect on the body than does less aspirin). How much prayer is enough? Is there such as situation as receiving too much prayer? When reading studies with frequency of prayer as one of the variables, use caution, especially in the discussion section where methodological precision can evaporate.

Another example of a methodological problem comes in the form of an actual experiment, more specifically randomized clinical, double blind studies of the efficacy of prayer. Using this technique that is considered a gold standard in the medical profession (a position currently receiving criticism, Ornish, 2015), studies such as the thoroughly discredited version by Byrd (1988; see Spilka & Ladd, 2013 for an extended critique and other similar examples dating back to the 1870s) inaccurately believed that they could address the question of whether or not prayer “worked” in a physical sense. These investigations typically divide participants with similar ailments into two groups. Next they devised various schemes by which to assign independent people to pray for one of the groups, but not the other. The outcomes, researchers argue, reveal prayer’s efficacy. The clear problem is that this experimental technique is absolutely ill-suited to the question. In a text-book demonstration of this dilemma one facet that researchers spectacularly fail to consider is that the essence of prayer exists in a metaphysical domain, not a physical domain. Above, the dose effect is outlined and it comes into play here as well. What if just one prayer sneaks out for someone in the control (no prayer) condition? In neglecting to fully comprehend why people pray, researchers erroneously equate physical improvement with prayer “success.” A more accurate understanding of prayer is that it “works” in a wide variety of ways, according to its practitioners. For instance, a person might state that a prayer worked even when physical maladies persisted until death occurred, an outcome rarely considered a success in the medical field. The “working” according to the individual in this scenario might be that although prayers for health and healing did not somehow create that reality, in the midst of doing the praying, lessons were learned about how to live more effectively during the time remaining. In the final analysis, believers will contend that whether or not prayers work is a classification determined by the deity to whom people offer their prayers.

This particular case study demonstrates that investigators within the PoR, whether or not they individually adhere to some faith perspective, must thoroughly consider the theological context out of which devotional practices arrive. Prayer is, after all, not very much like either an aspirin or a slot machine (Ladd, 2014).

3. Neuro-physiology of prayer
Another area that appears to be extraordinarily ambiguous if not misleading (at least as far as can be seen to date) is the use of neuroimaging techniques to pinpoint prayer-in-the-brain. Books in this area are often quite popular (Newberg & Waldman, 2008; for a critique see Ladd & Ladd, 2010), though critical readings observe numerous problems. The fundamental assumption in this line of thought is that prayer is somehow reducible to physiological features. Practitioners of prayer, however, argue that there is more to prayer than neural activation. Neither side of this
argument is proveable in any logical sense, so claims of superior explanatory power are moot for either position as far as science is concerned. Claims that God changes one’s brain therefore are, by definition, not defensible via scientific methods, unless God is presented as a physically manipulable variable. One could argue in that fashion, however, that such a definition of God does not reflect common language and that the characterization of God as a physically measureable substance cannot logically disprove propositions that God is non-material. In short, claims and counterclaims need to be carefully scrutinized for logical and scientific validity.

There is no debate that something will happen at a neural level when people pray; prayer invokes memory, visualization, physical movement, and so forth. It may even be that prayer produces some sort of unique constellation of activation patterns, although it is more likely there would be different constellations for different kinds of prayer since it is a multidimensional construct (Spilka & Ladd, 2013). At the root of this type of methodology lies the question of the extent to which activation is identical to experience or even more deeply to consciousness. What precisely the beautiful full-color portrayals of brain activation actually mean is a matter of great and heated debate (Maselko, 2013; Vul, Harris, Winkielman, & Pasher, 2009).

Another key issue in this research paradigm centers on the act of prayer-on-demand. In a setting exceptionally different from that in which people regularly pray, researchers ask people to engage in a spiritual discipline almost as though it were a practice equivalent to solving math problems. While prayers are often short and spontaneous, the impetus to pray rarely takes the form of an external entity (a researcher) who is attempting to measure the prayer in some clinical fashion. Giving a person a command to pray in a lab setting lacks realism. That lack of realism means that it is unlikely that the prayers in research studies are identical to prayers in real life situations.

The gulf between actual practices and research assigned tasks deepens because the imaging design often requires to engage in on-off-on-off practices. Realism is challenged enough simply by a researcher commanding a participant to pray on demand. Realism takes yet another hit when, due to the procedures used for gathering data in fMRI contexts, participants are repeatedly instructed to stop and start their praying. All of this is highly atypical and rather than providing information about prayer-in-the-brain, it is very plausible that the results presented are demonstrations of brain activation induced by attempts to pray (Ladd, Cook, Foreman, & Ritter, 2015). In other words, those beautiful images of colorful brains may not be showing the brain-at-prayer but instead may reveal what the brain is doing when a participant is attempting to do something atypical.

This is not to say that there is no potential role for imaging procedures in PoR, but it is to argue that neuroimaging tools cannot necessarily answer the types of questions that are of the greatest interest. The tools are designed to answer other types of questions and they perform that function very effectively. It is up to researchers to make clear choices about which tools can and cannot help answer theoretically driven hypotheses. In this process, making sure that the hypotheses dictate the methods is one way to help ensure a good match. If, on the other hand, the presence of a cool tool is the deciding factor, then it has the potention to impede scientific merit. As the old saying goes: If one’s only tool is a hammer everything looks like a nail.

References


The field of school psychology is rich with history and influences from other disciplines. In fact, the beginnings of school psychology extend back as far as the 1890s (Fagan & Wise, 2007). However, the field is one that comprises multiple roles; therefore, it is quite complex and not always easily conceptualized by those who have not received formal training in school psychology. Additionally, the roles and responsibilities of a school psychologist may vary depending on the characteristics of the setting within which the school psychologist works. Although this is the case, a general understanding of the field and its foundations is beneficial for all mental health and education professionals and may serve as a tool for strengthening connections between school psychologists and others who play a key role in student success and well-being. Because school psychologists work as team members with other professionals in education, these connections are necessary. Before reviewing the history of school psychology, we describe who the school psychologist is, and the various roles and responsibilities that a school psychologist assumes must be clearly noted.

Who is the School Psychologist?

The National Association of School Psychologists (NASP, 2014) describes a school psychologist as key player in a team that includes teachers, family members, and school administrators with a purpose of enhancing student growth, health, and safety. School psychologists assess and monitor the needs of students, both at individual and school-wide levels. They serve as communicators between home, school, and the community and, alongside teachers and parents and/or guardians, utilize multiple approaches in hopes that a student has a greater likelihood of success academically, behaviorally, socially, and emotionally in all aspects of life. Furthermore, they assist administrators in creating positive and safe school environments that support diversity in learning (2014). School psychologists receive formal training in both mental and behavioral health, and they are well-equipped with methods of strengthening student learning and engagement at school. In most states, school psychology trainees must complete approximately 60 credit hours of coursework, including a year-long internship, to become Educational Specialists (Ed.S.) and approximately 90 credit hours of coursework, including dissertation completion and an internship, to earn a doctoral degree (Ph.D.). The internship experience is a valuable tool in teaching school psychology trainees the skills that they need to fulfill the roles stated above. To further discern the unique functions of a school psychologist, one must be aware of the various roles that school psychologists are responsible for having and maintaining.

What roles does the school psychologist have in the district?

School psychologists can assume a multitude of roles, and the roles vary depending on the settings and populations with which they work. Fagan and Wise (2007) identified three traditional capacities in which school psychologists serve: assessment, intervention, and consultation. In each of these capacities, school psychologists work on teams that include educational professionals as well as parents and/or guardians.

Assessment. School psychologists engage in individual assessment to learn more about a student when they receive a referral from a teacher and/or other educational professional. They also engage in assessment when completing screenings and school-wide assessments to evaluate
student learning and growth for a school population. In general, assessment assists school psychologists in understanding student strengths and weaknesses and, in turn, that understanding assists the intervention team and/or administrative team in implementing strategies that can support a student or students in school (Fagan & Wise, 2007; NASP, 2014; Ysseldyke et al., 2006). On an individual level, assessment begins with a referral that a teacher often completes. The teacher or other educational professional typically completes this referral because of concerns that a student may need additional assistance either in the classroom or in another relevant environment, such as on the playground or at home. After the referral, the school psychologist obtains informed consent from the student’s parent(s) or guardian and then a planning meeting occurs. During this meeting, individuals who interact with the student collaborate to discuss possible student needs and the best approaches to measure such needs (Fagan & Wise, 2007; NASP, 2009, 2000b). After the initial meeting, the school psychologist collects data by observing the student in the classroom, evaluating the student using standardized assessments, interviewing those who know the student well, and/or reviewing student history in school records. Once the team feels that they have collected a satisfactory amount of data (the amount is subject to their judgment), the school psychologist composes a report that addresses the assessment results, needs, and implications based on results. Then, the team shares the report with parents and/or guardians and determines eligibility for services at an additional team meeting in which they devise a plan to support the student, called an Individualized Education Plan (IEP). (NASP, 2009; Fagan & Wise, 2007). School psychologists must ensure that assessment involves numerous measures that give a clear picture of a student’s strengths and weaknesses. The assessment role of the school psychologist helps the team in understanding what the student needs and in determining whether or not the student qualifies for services provided by the school district.

**Intervention.** After assessment, school psychologists continue to work with a team to determine the best methods for addressing student needs. School psychologists are essential team members involved with choosing an intervention or interventions for a particular student. School psychologists must determine how beneficial the intervention will be for the student as well as how likely those implementing the intervention will be to accept it and implement it with fidelity (Fagan & Wise, 2007; Witt & Elliott, 1985). School psychologists often address fidelity and acceptance by asking teachers for input on how successful they believe that the intervention is for the student. Additionally, school psychologists frequently provide teachers with steps to implement the intervention and either observe their completion of the steps or ask them to report on whether or not each step was followed correctly each time they conduct the intervention. Interventions may take place because of the existence of goals on an Individualized Education Plan (IEP) for a student that qualifies as a student with a disability. However, school psychologists do not only provide intervention to students with IEP goals. Often, they provide behavior and/or academic goals to students that simply require a small amount of extra support.

**Consultation.** According to Kratochwill (1992), consultation is an indirect model of providing services to students through working with another individual (the consultee) and supporting him or her in choosing and implementing either individualized or systematic services. This is in contrast to a direct model in which the individual (the school psychologist in this case) would implement the services him or herself. For example, an indirect model in school psychology may consist of a school psychologist meeting with a teacher to discuss helpful interventions for a student and the steps of intervention implementation. After this meeting, and with frequent check-ins throughout, the teacher would implement the intervention instead of the school psychologist. School psychologists provide consultation services to many individuals and groups, including teachers, families, administrators, and community agencies (NASP, 2014). Throughout these processes, school
psychologists must invite and collect feedback from professionals as to the success of implementation. They must also provide problem-solving tactics to consultees if problems arise.

**Counseling.** Another role that school psychologists sometimes provide is counseling. Plotts and Lasser (2013) define counseling in the school psychologist’s role as “the set of interventions designed to promote the social, emotional, and behavioral well-being of children and adolescents” (2013, p. 4). School psychologists provide counseling as a component of an Individualized Education Plan (IEP) or to students who require it to meet measurable goals and objectives. An example could consist of a goal to teach coping strategies and measurable objectives for how often the student will display these coping strategies in anxiety-provoking situations. The school psychologist may be required to provide counseling to teach anxiety-reduction and coping strategies for the student to utilize to meet this goal. School psychologists provide counseling through structured methods such as individual or group therapy, social skills training, consultation, etc. (Plotts & Lasser, 2013). Although the role of counseling is not necessarily a central role of the school psychologist and varies depending on the emphasis that the specific school district places on counseling, school psychologists may provide counseling as an evidence-based practice. Consequently, school psychologists often provide counseling when a student goal or objective specifies the need for counseling or it proves to be a crucial need for a student or group of students.

**Summary**

School psychologists work alongside key individuals as team members focused on student success. Through various roles in assessment, intervention, consultation, and counseling, as well as through competencies achieved through training, school psychologists support student growth and achievement both in school and outside of school. This overview of the skills, roles, and responsibilities of school psychologists serves as a foundation for understanding school psychology as a profession. Likewise, it sets the stage for professionals to further grasp the historical pinning of school psychology, how the discipline has evolved, and how school psychology may present itself in the future.

**Roots of School Psychology**

**Social Reform and School Psychology**

In the last two centuries, the field of education has witnessed a profound growth in the development of school psychology as a profession (Farrell, 2010). This is largely tied to the social reforms of the 19th and early 20th centuries that resulted in widespread compulsory schooling (NYASP, 1990). Specifically, 19th century social reform led to mandatory schooling for children from a variety of economically and cognitively diverse backgrounds. During this time, many children arrived at school in poor physical and mental health and learned at substantially lower rates than their peers, presenting a need for physical and mental examinations in the context of school (NYASP, 1990).

**The Development of School Psychology as a Discipline**

The conceptualization of school psychology as a discipline is credited to Lightner Witmer (D’Amato, Zafiris, McConnell, & Dean, 2011). Witmer began his career as a history teacher at the Rugby Academy in Philadelphia (Brotemarkle, 1931). In this role, it perplexed Witmer that some students experienced difficulties despite their hard work and dedication to their studies. It was this paradox that drove Witmer to study psychology (D’Amato, Zafiris, McConnell, & Dean, 2011).
In 1896, Witmer appeared before the American Psychological Association at a psychological laboratory organized by James Sully for the study of atypical children. At this time, Witmer presented what he called *The Clinical Method in Psychology and a Diagnostic Method of Teaching* (Reisman, 1976). This presentation would serve as organizational plan for the role and structure of an educational specialty within applied psychology (D’Amato, Zafiris, McConnell, and Dean, 2011).

His plan was comprised of (Witmer, 1896, 1897):
1. The investigation of mental development in children, as manifested by mental and moral delays by means of statistical and clinical methods;
2. A psychological clinic, supplemented by a hospital training school, for the treatment of all children suffering from cognitive and emotional deficits interfering with school progress;
3. The offering of practical applied work to those engaged in the profession of teaching and medicine and in the observation and training of children identified as normal and children then referred to as “mentally retarded” children.

This plan depicted a professional specialty that would eventually evolve into school psychology (Bray & Kehle, 2001). Much of Witmer’s organizational plan is similar to the framework on which school psychology is built. As school-based mental health professionals, school psychologists must focus on objective clinical methods of assessment as well as practical strategies of helping children succeed in educational environments. Witmer’s presentation also identified treatment methods for children who exhibited psychological and developmental deficits and acknowledged the importance of studying children who are typical and atypical children.

In addition to the influence of Witmer’s ideas, school psychology practices today are built upon the groundwork established by the National Association of School Psychologists (NASP) and the American Psychological Association (APA). APA was established in 1892, and the first school psychology training program was launched at New York University in 1925. The National Association of School Psychologists (NASP) would subsequently be founded in 1969. NASP’s mission was and still is to “empower school psychologists by advancing effective practices to improve students’ learning, behavior, and mental health” (www.nasponline.org, ¶ 1)

**History of Intelligence Testing**

**History of Race and Intelligence.** Psychological science directly impacted the manner in which individuals perceived race in the 19th century (Gould, 1981). During this time, most political leaders, scientists, and everyday citizens rarely questioned the veracity of racial rankings and groups or the apparent hierarchy of groups in United States culture. Native Americans were viewed as intellectually inferior to Whites, and Blacks were viewed as inferior to all other races (Gould, 1981). However, there were contrasting views on the topic. For instance, a group that Gould (1981) referred to as “hard-liners” (Gould, 1981, p. 31) contended that Blacks were intellectually inferior than Whites. The alternative group, “soft-liners” (Gould, 1981 p. 31) also agreed that Blacks were inferior to Whites, but contended that an individual’s intelligence should not be connected to his or her right to freedom. Some even maintained that adequate education and standards of life could elevate Blacks to the status of Whites, while others suggested that Blacks were doomed to an inferior status in society (Gould, 1981). The latter part of the 19th century continued to be characterized by the overriding opinion of racial inferiority, especially in relation to Blacks. According to (Gossett, 1965 p. 416), from the period of 1880-1920 American thought “generally lacks any perception of the Negro as a human being with potentialities for improvement. Most of the people who wrote about Negroes were firmly in the grip of the idea that intelligence and temperament are racially determined and unalterable.”
This persistent racism impacted psychology as well. G. Stanley Hall, a pioneer psychologist, contended that primitive races (i.e., people who were not White) were less evolutionary evolved (Gould, 1981). Furthermore, the development and early interpretations of intelligence test scores only supported racist notions by providing quantitative data that appeared to support these findings and assumptions. The data from these tests were used to promote racism and the false notion that some people were more educible then others (Lieberman, 1975). Currently, researchers recognize that one’s social environment plays a large role in determining his or her IQ. Additionally, both social and genetic variables interact to contribute to individual differences in IQ scores (Scarr & Weinberg, 1976, Sternberg & Kaufman, 2011).

**Development of Intelligence Testing.** The early part of the 20th century was characterized by a growing interest amongst school psychologists and the public on what constituted intelligence and how it could be measured (Farrell, 2010). This focus had a salient influence on the development of school psychology and eventually resulted in the creation of intelligence tests to identify children with the possibility of benefiting from special education services. The earliest examples of intelligence tests emerge from the work of Alfred Binet. In 1899, Alfred Binet and Pierre Vaney opened a pedagogical and psychological laboratory in a Parisian primary school (Guillemard, 2006). In 1905, Binet studied the challenges exhibited by children who had difficulty learning in typical classrooms. Eventually, Binet and Henri Simon would develop the Binet-Simon test, a measure the general public and prominent figures in psychology considered to be a valid measure of intelligence and a tool to identify what was then referred to as “mentally retarded children” and gifted children (Farrell, 2010). Children then referred to as “mentally retarded” are now referred to as children with intellectual disabilities. The change in terminology was made possible in 2014 by the Supreme Court ruling of Hall v. Florida (2014).

World War I had a major influence on the development of group-standardized tests in the recruitment of mentally competent soldiers. Robert M. Yerkes, a former faculty member of Harvard University, was the mastermind behind group testing. Yerkes worked with fellow Psychometrists Henry Goddard and Lewis Terman to develop three tests. Army recruits that could read and write were administered the Army Alpha test, while illiterate recruits were administered a picture assessment, entitled the Army Beta test. Prospective soldiers that failed the Beta test would be called on for further individual examination by an Army Psychologist. Such examination would result in a grade ranging from A to E (Gould, 1981). Yerkes contended that recruits who received a C should be categorized as having low average intelligence, while recruits that received a grade of D should not be recruited for tasks that required specialized skills. Interestingly, the University of North Carolina at Chapel Hill was the first institution to use the Army Alpha test to sort students.

These tests did not have a large impact on the Army as a whole, but did impact officer training, as men who received grades of C or lower could not be considered for officer training in some camps (Gould, 1981). Yerkes’s tests also had a vital influence on society. He received many requests from educational institutions and businesses, requesting to utilize these tests. Unfortunately, many scholars, including Yerkes himself, would interpret results from Yerkes’s World War I data and other widespread testing to provide misguided support for those that who insisted intelligence was hereditary and directly associated with race. Yerkes’s former Lieutenant, E.G. Boring, who would later become a famous psychologist, selected one hundred and sixty thousand cases from Yerkes’s War World War testing data to analyze. Boring cited three major findings from this data set. (Gould, 1981). First, the average mental age of White American adults was a mere 13. It is important to note that data gleaned from Alfred Binet’s test determined the age-related standards. An adult who could solve problems designed for middle-school aged children would have a mental
age of 13. This figure provided supports for the eugenics movement, with proponents who claimed that the uncontrolled breeding of people with intellectual disabilities would result in overarching intellectual decline. At this time in United States history, those identified as people with intellectual disabilities were disproportionately likely to be people of color.

Boring also contended that European immigrants could be classified by the country from which they immigrated from. As a result, Southern Europeans and Eastern Europeans were identified as less intelligent than fairer Northern and Western Europeans. Finally, he concluded that Blacks were at the bottom of the intelligence scale with an average mental age of 10.41. Yerkes was not in agreement with these findings, as they were largely based on averages. Furthermore, exceedingly low amounts numbers of Blacks took the Alpha tests, for a variety of reasons, including biased expectations about their performance. As a result, the accuracy of Boring’s findings is questionable at best. It is clear that historical racism had an aversive impact on the manner in which individual’s abilities were perceived. However, it’s crucial to understand this history so we do not make similar mistakes in the future.

**History of special education laws and decisions.** In relation to social reform and the events that guided the development of school psychology, special education law has had a profound influence on the development of the profession. Although an all-encompassing explanation of all influential laws remains beyond the scope of this chapter, an overview can clarify historical influences on school psychology and connect the field to other related fields that adhere to special education law. The following laws and court decisions have influenced the way in which school psychologists conduct professional endeavors (Rothstein & Johnson, 2014; Osborne & Russo, 2014).

**Brown vs. Board of Education.** The Brown v. Board of Education case, decided by the U. S. Supreme Court in 1954, prohibited schools from denying equal educational rights to any student based on race. Prior to Brown v. Board of Education, students received education, but under racially segregated and separate conditions as established by the U.S. Supreme Court in Plessy v. Ferguson (1896). The court ruled that equal educational opportunities and environments are necessary for students, regardless of race and that separating or discriminating against students denies their rights under the Fourteenth Amendment (Rothstein & Johnson, 2014). School psychologists must follow the guidelines of Brown vs. Board of Education. They must be sure that they provide students equal access to opportunities. Likewise, school psychologists must ensure that all students, regardless of race, gender, intellectual functioning, etc. receive an appropriate education that allows them to be successful inside and outside of school.

**No Child Left Behind (NCLB).** No Child Left Behind (NCLB) was enacted in 2002. The purpose of this law was and still is to set high expectations for all students so that they may achieve their full potentials (Braden & Schroeder, 2004). In setting high expectations, NCLB increases the accountability that schools and school districts have for the educational success of students. In an effort to increase accountability, the law requires that students achieve adequate yearly progress (AYP), as defined by state standards. Schools must teach to a set of defined standards and assess student knowledge of these standards so that AYP can be monitored and increased. NCLB refers to the assessments of AYP as high stakes testing, and high stakes tests are the determining factors as to whether or not schools qualify for federal funding. Another purpose of assessment and NCLB is that schools provide students with evidence-based interventions or interventions with sufficient research to support their effectiveness (No Child Left Behind, 2002). Schools provide such interventions when students are not making AYP and extra support is required to increase the
academic performance and progress of students (Rothstein & Johnson, 2014; Osborne & Russo, 2014; Braden & Schroeder, 2004).

Based on the requirements of NCLB, school psychologists must identify students who struggle with making AYP through evaluation and assessment. School psychologists must also assist teachers and other educational professionals in implementing evidence-based curriculum and interventions for students who are not making AYP (No Child Left Behind, 2002). This assistance may consist of working with one teacher or a team of teachers and professionals to implement an intervention for a student, or working with administrators in implementing school-wide evidence-based curriculum that matches state standards.

**Individuals with Disabilities Education Act (IDEA).** The Individuals with Disabilities Education Act originated in 1975 as the Education for All Handicapped Children Act (EAHCA). The name was changed in 1990 to the *Individuals with Disabilities Education Act*, so as to replace the term *handicapped* with the term *disabilities*. According to the US Department of Education, before the adoption of IDEA, only 1 out of 5 children with disabilities received an education. Educating children with disabilities was not a national priority and often the only priority was to meet the basic needs of children with disabilities in separate establishments, such as residential treatment centers. Because of this, it was atypical for children with disabilities to ever receive an education, let alone a free and appropriate education as required under IDEA. Additionally, parent and/or guardian input was rarely considered when significant educational decisions were made for children (US Department of Education, 2010).

Significant changes in the treatment of children with disabilities and their parents or guardians were brought about by the adoption of IDEA. IDEA now provides states with funding for children with disabilities as well as procedural safeguards and rights to families and students. IDEA provides the right to a “free and appropriate education” (FAPE) to meet the student’s individual needs. Likewise, rights under IDEA include the right to the student’s education in the least restrictive environment (LRE), the most inclusive environment of typically developing children and exposure to the general education curriculum, within which the student is able to function. Protection under IDEA is in the form of procedural safeguards to ensure that schools provide parents and/or guardians and students with proper rights under the statute (Individuals with Disabilities Education Act, 2004). Safeguards include the right to either provide or deny consent throughout all decision making processes, the right to receive notice about all meetings and decisions made throughout the process, the right to be equal participants in decisions made for their children, and the right to disagree and to have disputes resolved through due process or other methods of resolution (Rothstein & Johnson, 2014).

School psychologists work heavily with federal IDEA regulations and in ensuring that a child and his or her parents and/or guardians are properly served under IDEA. Since the implementation of IDEA, the role of school psychologists has expanded to include proper evaluation of students and communication with members of an educational team that evaluates and meets a student’s needs. Under IDEA, professionals communicate with the school psychologist to make a referral for an evaluation for a student. Relatedly, parents and/or guardians provide their consent to a school psychologist for an evaluation to take place. School psychologists are team players in the identification process under IDEA with selecting the proper assessments and information needed to determine what a student’s strengths and weaknesses are and whether or not the student qualifies for services under IDEA. If a student qualifies for services under IDEA, school psychologists must communicate this information clearly to the team, and all members must work together to choose goals and evidence-based tactics of supporting the student’s educational needs. Services are freely
and appropriately provided in the least restrictive environment possible for the child’s presented needs (IDEA, 2004). School psychologists must also ensure that parents and/or guardians are an equal part of the team and consider the rights of parents and/or guardians under IDEA, especially when deciding what supports will meet each student’s needs.

**Section 504 of the Rehabilitation Act.** According to Rothstein and Johnson (2014), Section 504 of the Rehabilitation Act of 1973 prohibits discrimination in institutions (i.e., schools in this context) that receive federal financial assistance. If a student meets criteria under IDEA, he or she does not qualify for services under Section 504. Under Section 504, a student may qualify if he or she has a physical or mental impairment that significantly limits one or more life activities (e.g., performing caretaking activities for oneself, completing manual tasks, communicating, etc.), has record of this impairment, and has regard by others as having the impairment. Often school psychologists are involved with providing assistance to determine whether or not a student qualifies for services under Section 504.

**Summary**

Historic legislation continues to shape school psychology as a discipline and further defines the roles and responsibilities that school psychologists have to ensure that the laws are followed. Along with other educational professionals, school psychologists must ensure that students do not encounter discrimination on the basis of race and/or disability. School psychologists must also assist in evaluating and monitoring the progress of students who may not be making AYP. This assistance benefits both the district and the students who may require extra support. Most importantly, school psychologists obey the previously described laws so that they may provide students and their families with educational experiences that meet their needs and promote student success. Constant debate and change exist for these historic laws, but the premises that they are built upon have impacted the field of school psychology since their establishment.

**Changes from History: Current School Psychology**

After reviewing some of the historical foundations of the profession of school psychology, it is imperative to consider how these concepts have evolved and continue to evolve. Approximately 25 years ago, the profession of school psychology in the United States followed a refer-test-place model. According to Reschly (2008), this model involved an educational professional indicating that a student was struggling in some area of his or her education, an evaluation by means of assessment, and then placement of the student in an area that targeted his or her needs. The model has now shifted to a Response to Intervention (RTI) model, which focuses on prevention as well as intervention.

The RTI model emphasizes providing students with supports and collecting data as well as monitoring student progress. School psychologists work closely with teachers to identify students who require extra support either academically or behaviorally. They also work closely with teachers to choose and implement proper interventions and evaluate the effectiveness of the interventions. Following federal guidelines, if a student does not respond to the supports provided for all students, he or she receives more intensive services in addition to the services that all students receive, often in the form of instruction to small groups. If the student continues to struggle with more intensive services, he or she is provided with more intense, individualized instruction (Reschly, 2008). Overall, the RTI model focuses more on prevention and data-based techniques of supporting students. The paradigm shift from refer-test-place to RTI is one way in which the groundwork established by history is utilized but constantly evolving.
From educational reform to the advancement of the profession through the creation of training programs, standardized testing, and special education laws, school psychology has a rich history that makes it the multi-faceted profession that it is today. Witmer advocated for data-based methods of assessing children to meet their educational needs as well as an emphasis on training competent professionals to meet the unique needs of children. Additionally, the early test development of Binet, Vaney, and Yerkes, despite racism and other biases, set the stage for the concept of standardized assessments that allow school psychologists to evaluate children’s educational needs. APA and NASP integrated and built upon these foundational principles to further establish the profession and standards for best practice and training of professionals. Throughout the years, laws in special education have been enacted and amended to govern the practices of school psychologists and other professionals in education. Based upon accounts of history and current changes to the profession, a firm foundation of research and advocacy developed school psychology, and the profession continues to progress.

Vignettes

1. Roles of the School Psychologist: Assessment, Intervention, Consultation
The following three-part vignette is fictitious but allows readers to understand the roles of the school psychologist in an applied scenario.

Background. Kendrick is an 8-year-old male student attending second grade in a rural school district. By most accounts, staff describes Kendrick as an affable and hardworking student; however, his teacher, Ms. Gomez is concerned with his limited proficiency in math and reading. Progress monitoring data that the school collects on all students throughout all grades indicates that Kendrick reads at a rate of accuracy that is significantly below the average rate of accuracy achieved by his same-aged peers that attend the school. While Kendrick receives mostly A’s and B’s on small group math assignments completed in the classroom, he struggles to complete assignments individually and generally receives poor grades. Additionally, data collected by Ms. Gomez indicates that Kendrick experiences difficulty in responding to additional instruction in math and reading provided to him and other students that require additional support. After discussing her concerns with his parents who also had similar concerns, Ms. Gomez and Kendrick’s parents submitted a form to the school psychologist requesting an initial evaluation of Kendrick for the potential need of special education services.

Assessment. Upon getting written informed consent from Kendrick’s parents, the school psychologist began the assessment process by reviewing Kendrick’s academic and relevant health records. The school psychologist noted that Kendrick attended school regularly, earned mostly below average grades (C’s and D’s), and received high-quality, evidence-based general education instruction in math and reading in all grades. She also found that Kendrick’s hearing and vision were well within normal limits. After reviewing these records, she completed informal interviews with Kendrick’s parents and teachers. She found that Kendrick was well adjusted socially but consistently struggled in the areas of reading and math. After recording this information, the school psychologist administered a full battery of tests that included cognitive assessments, academic assessments, rating scales, and data from observations of Kendrick’s performance and behavior within the classroom. The information gleaned from the assessment indicated that Kendrick had challenges relative to his peers in the areas of processing speed, long term retrieval, reading fluency and comprehension, and math fluency. The data also indicated that Kendrick’s academic and cognitive challenges had a profound negative impact on his ability to progress through the general education curriculum without assistance. The school psychologist presented this
information to Kendrick’s parents and teacher; the team decided to identify Kendrick for Special Education services under the Specific Learning Disability category (SLD) and they began the process of working as a team with the assistance of the intervention specialist to design an Individual Education Program (IEP) to address Kendrick’s academic needs.

**Intervention.** Based upon Kendrick’s identified needs and identification as a child with a Specific Learning Disability (SLD), the team developed an IEP to connect Kendrick’s present levels of performance with measurable goals. Information from standardized testing and intervention data collected in class allowed the team to report present levels of reading fluency and comprehension performance and to present levels of math fluency performance. For example, reports on reading fluency indicated that Kendrick was reading approximately 50 words correct per minute during the winter semester, while his same-aged peers were reading approximately 70 words correct per minute. A measurable annual goal for Kendrick was to increase the amount of words read correctly per minute to 70 by the end of the 4th quarter. In addition, the team identified research-based services that would allow Kendrick to meet his annual goals and to progress in the general education curriculum. For example, to increase reading fluency performance, the team recommended repeated reading strategies (Dowhower, 1987; Herman, 1985; Rashotte & Torgesen, 1985; Rasinski, 1990), in which Kendrick chose a text of interest to him and subsequently read and re-read until achieving a level of fluency consistent with measurable goals. In addition, the team recommended that Kendrick be educated in classrooms with his typically developing peers but receive extra time on state assessments. Lastly, the team worked together to identify when and where services would be provided, and how often Kendrick would be assessed for progress toward measurable goals. Therefore, the school psychologist worked as a team member to identify how Kendrick was performing presently and how he could receive supports to meet measurable goals.

**Consultation.** The school psychologist worked in a consultative manner with Ms. Gomez to implement the repeated reading intervention strategy. They selected a collection of texts that would allow Kendrick to progress in the general education curriculum. Kendrick then chose the text that interested him most. The school psychologist provided Ms. Gomez with resourceful information on the repeated reading intervention strategy and checked in biweekly to review data and ensure that the intervention was effective in maintaining Kendrick’s progress toward IEP goals.

**Summary.** The purpose of the Assessment, Intervention, and Consultation vignette is to present the various roles of a school psychologist, established by history and current practices. The educational context described in this fictitious vignette demonstrates the three roles that Fagan and Wise (2007) acknowledge to be the main roles of a school psychologist. Moreover, the vignette reveals legislation at work, as the school psychologist and the rest of the team assess Kendrick’s needs and strengths in an effort to implement strategies to help him work toward making adequate yearly progress (AYP) as defined by NCLB. The team ensures that protection for Kendrick and his parents is provided in the form of procedural safeguards and that data are obtained to assess Kendrick’s progress and to evaluate the effectiveness of evidence-based interventions. Additionally, the RTI model is utilized, as Kendrick’s needs are identified using school-wide progress monitoring data and data from the small group intervention. Because of the imperative roles of the school psychologist and the rest of the team, Kendrick will have a greater chance of succeeding at school and a team of qualified individuals to assist him in doing so.

2. Culture and School Psychology

The following vignette is fictitious but allows readers to understand how culture impacts the role of a school psychologist.
Anna is a ten-year-old girl whose family immigrated from Mexico to the United States four years ago. She is bilingual and speaks both Spanish and English; however, both of her parents speak only Spanish in the home. Anna is described as a hard-working student by her teacher and school personnel. However, her classroom teacher has recently become concerned about her performance in math, specifically her lack of math fluency in the areas of addition, subtraction, division and multiplication. Her teacher also noted that Anna sometimes reads aloud and writes in Spanish, even when assignments are in English. Anna’s teacher, Ms. Smith, noted that she has to repeat sequential directions multiple times before Anna performed the requested tasks. Ms. Smith shared these concerns with her parents via an interpreter at parent-teacher conferences. Anna’s parents voiced similar concerns about her performance in math and the frequent forgetting. After the conference, a decision was made to make a referral to the school psychologist for testing to identify why Anna may be struggling to remember directions and complete math fluency tasks accurately.

Upon receiving the referral, the school psychologist, Dr. Boyle, read through Anna’s educational records and affirmed that her family immigrated from Mexico four years ago. She also noted that Anna participated in an ELL program from kindergarten through second grade, which she successfully completed. Upon further review of Anna’s educational records, she noted that Anna attends school regularly and has normal vision and hearing abilities. After reviewing this information, the school psychologist conducted an informal interview with Anna’s teacher. During this interview, she learned that Ms. Smith is concerned that Anna’s proficiency in English may be impeding her ability to benefit from math instruction and follow multistep directions. When asked why she believed this to be the case, Ms. Smith noted that Anna often responds to her questions in Spanish but quickly switches back to English when prompted. She indicated that Anna prefers to read books printed in Spanish during daily reading activities but would read books printed in English when requested by Ms. Smith. After interviewing Ms. Smith, Dr. Boyle invited Anna’s parents to the school for a brief informational interview. Both parents agreed to attend. Dr. Boyle speaks conversational Spanish but invited an interpreter to assist with the interview. Throughout the interview, Dr. Boyle made sure to make eye contact with Anna’s parents and speak directly to them as opposed to speaking through the interpreter. Her mother noted that Anna enjoyed reading books in Spanish, especially those focused on prominent Mexican leaders. Her mother also informed Dr. Boyle that she encourages Anna to speak and read in Spanish when possible in order to stay connected with her culture. Her mother did not note any academic challenges beyond mild challenges in math. Her mother also mentioned that Anna forgets things more often than her siblings. For instance, when asked to clean her room, do the dishes, walk the dog, and do her homework, Anna would often only remember to clean her room and do her homework.

With this information in mind, Dr. Boyle decided that she would test Anna using academic and cognitive measures to identify if she had any significant academic or cognitive challenges. After gaining rapport with Anna, Dr. Boyle asked her if she would be more comfortable being tested in Spanish or English. Anna informed Dr. Boyle that she would prefer to have the assessments administered in English. After administering cognitive and academic assessments over the course of three days, Dr. Boyle noted that Anna scored in the low range on the math fluency portion of the assessment. She also noted that Anna scored in the low average range on measures of working memory; however, Anna’s IQ fell in the average range. Anna’s IQ was nearly the same when she considered verbal and nonverbal measures, which suggested that her English proficiency did not negatively influence her performance on the assessments.
When examining Anna’s file and assessment results, the school psychologist determined that she probably would not benefit from special education services. However, she did note that Anna would likely benefit from directions being presented in two or three simple steps at a time. It would also be helpful for Anna to write down these directions on piece of paper and keep them in an area where she felt comfortable accessing them. In terms of speaking and reading in Spanish during instruction time, Dr. Boyle, Anna’s parents, and Ms. Smith decided that Anna should be permitted to read both Spanish and English books but that her book reports should be completed and turned-in English. Anna could, however, incorporate Spanish into her book presentations. Further, with the help of Dr. Boyle, Anna and her parents explained to Ms. Smith that Anna’s preference to speak in Spanish was not linked to limited English proficiency, but to a desire to stay connected with her culture. This led to a larger conversation about culture in Anna’s classroom and Ms. Smith decided that it would be a good idea for students to present about their cultures/countries of origin as part of an ongoing class project.

School psychologists have the privilege of working with richly diverse groups of students. However, it’s important to note that all students are individuals, despite their cultures and countries of origin. Anna’s teacher, Ms. Smith, assumed that Anna’s challenges with following multi-step directions and math fluency were directly related to her English proficiency. However, it was determined that Anna was proficient in English. This points to the importance of not making assumptions about students based on perceptions of their backgrounds. It’s certainly understandable to hypothesize why students may be struggling, but these hypotheses should be affirmed with data. Dr. Boyle was respectful of Anna and her family’s linguistic diversity and did not let it become a barrier during the assessment process. For instance, she made sure to have an interpreter present when Anna’s parents came in. Dr. Boyle paid special attention to her body language while the interpreter was present. For instance, she maintained eye contact with Anna’s parents while they spoke, even though she did not necessarily understand everything they were saying. Dr. Boyle also asked Anna if she preferred to have the assessment administered in Spanish or English. She did not assume that Anna would prefer to have the assessment administered in Spanish. Further, she worked with Anna’s teacher to create a plan that provided Anna academic supports and respected her culture. Finally, Dr. Boyle objectively analyzed the data gleaned from Anna’s assessment and determined that her challenges with remembering directions and math fluency was not a result of her English proficiency, but was likely a result of her below average working memory ability.

3. Technology and School Psychology
The following vignette is fictitious but allows readers to understand how technology influences the roles of a school psychologist. The assessment that is explained is an actual assessment used by many school psychologists and school districts in screening and progress monitoring. The applied example and information about the assessment was adapted from Shinn, Shinn, and Langell (2008).

Mr. Watson is the school psychologist at a large elementary school with students in kindergarten through sixth grade. To ensure that students are making adequate progress in reading fluency throughout the building, Mr. Watson monitors their progress using AIMSWeb, a technology-based program used for screening and progress monitoring. Three times a year, Mr. Watson and paraprofessionals throughout the building administer AIMSWeb grade-level oral reading probes to all students as a universal screening of their reading fluency performance. Using the web and school laptops makes it easy for Mr. Watson to collect data efficiently from students throughout the school building. As students read stories aloud to them, Mr. Watson and paraprofessionals record the words that are read incorrectly by simply clicking them on their laptops. In addition, they measure fluency by clicking the last word that the student is reading at one minute. The
program alerts the individual administering the probe when a minute has passed. In this quick administration, Mr. Watson is able to save data for each student regarding the words the student read correctly and incorrectly (accuracy) as well as the words the student read correctly in one minute (fluency). Data are available in the AIMSweb program that administrators, teachers, and Mr. Watson can access on the web with a password; therefore, all individuals that require the data for planning and intervention purposes can access it.

In addition to individual data on words read correctly and words read correctly in one minute saved for each student, AIMSweb creates box plots that display each student’s performance and how his or her performance compares to the average performance of other students in that grade level either within the school in which Mr. Watson works, the district overall, numerous districts, statewide, or nationally. These graphs are helpful for district administrators, parents and/or guardians, and teachers because they allow these individuals to compare the student’s progress to peers in the same grade and also because fall, winter, and spring benchmarks can be reported on the same graph. This presentation option permits those examining the graphs to see if the student has made progress from one evaluation to the next. Graphs can also be created to display performance for all students based on grade level, teacher, school, and other factors.

Along with using AIMSweb to evaluate reading performance of all students, Mr. Watson uses this program to evaluate the progress of students who are identified as at-risk and require intervention more frequently to work on reading skills. Sarah is a 2nd grade student who was identified as at-risk for reading fluency based on below grade level scores compared to national norms when she was administered AIMSweb probes by Mr. Watson in the fall. Because of this, Sarah has been receiving more frequent reading fluency practice with her classroom teachers. To more closely monitor her progress with the addition of intervention, Mr. Watson evaluates her reading fluency performance monthly using AIMSweb probes. This data allows Mr. Watson and Sarah’s teachers to see either more frequent evidence of her progress or data that suggest that changes should be made to the current intervention. After Mr. Watson administers the AIMSweb probes to Sarah, data are immediately made available for access by teachers and administrators. Mr. Watson is also able to produce graphs that detail Sarah’s performance so that her parents are aware of improvements that she is making in reading fluency. AIMSweb allows Mr. Watson to efficiently and more frequently measure Sarah’s progress and keep accurate and easily interpretable reports and graphs so that all individuals involved in developing and evaluating Sarah’s reading fluency goals can have access to them.

Summary. This applied example makes evident the influence of technology on a screening and progress monitoring tool. AIMSweb probes can also be used to monitor reading performance and progress in other areas besides fluency and they can be used to monitor math performance and progress. The impact of screening and progress monitoring using technology has made the process incredibly more efficient for school psychologists and other educational professionals. In the past, paper-pencil tools were the only tools available to record accuracy and fluency. Streamlined databases for teachers, administrators, and school psychologists did not exist and data from probes was not immediately transferred to a student’s electronic file. For districts who use web and technology-based progress monitoring and screening tools, much time is saved for a school psychologist whose job is often to administer these tools to multiple students and to report on evaluation results and progress. Furthermore, the influence of web and technology-based progress monitoring and screening tools has improved communication among teachers, administrators, school psychologists, and parents and/or guardians. The availability, organization, and accuracy of data collection and storage makes it possible for all relevant parties, including the school...
psychologist, to have easy access to data. Additionally, in the past, the option of quickly creating graphs that clearly displayed the progress of a student or students was unavailable. Having tools to accurately and clearly represent the progress of a student or students and compare that progress to other students at the same grade level allows for precision in evaluating how a student or students are performing and in determining what interventions (if they are needed) should be implemented.

References


The history of psychology is comparably brief relative to many other fields of study. Within this brief history, beginning in the late 19th century, there have been tremendous, impactful shifts and the coalescence of multiple events that have shaped the development of psychology, which has likewise impacted society. Rapid social, political, cultural, and technological changes have dramatically altered the experience of each successive generation, and the science of psychology has adapted to each change to remain relevant, effective, and innovative. The impact of these widespread changes has affected the ways in which psychologists study human behavior and practice psychotherapy. In many cases, psychology and psychologists have been the catalyst for change, discovering and dispensing evidence to support change and serving as advocates and activists for progressive social change.

Issues related to human rights and social justice have markedly influenced the evolution of psychology. Since psychology’s infancy, great strides have been made toward advancing the rights of historically marginalized groups, including women, children, people of color, people with disabilities, and the lesbian, gay, bisexual, and transgender (LGBT) community. The psychology literature both reflects and contributes to these advancements. Historically, psychological theory and research was based primarily on the study of White men (Hegarty & Buechel, 2006). However, in the last 40 years, there has been an increase in the number of psychological studies that capture the experiences of diverse groups of people (Jackson, 2006). Accordingly, psychological theory has become more representative of the U.S and other Western populations, as well as Eastern and global cultures. This movement toward a more inclusive study of human behavior is, in large part, a response to national efforts such as the Civil Rights and Gay Liberation Movements. Although psychological research remains biased toward privileged groups (Organista, Marin, & Chun, 2010), the evolution in psychology represents an important acknowledgment of the changing demographics, enhanced understanding of the impact of privilege and oppression, and the need for social justice.

In this chapter, we will review major social movements and events that shaped the landscape of psychology. We will examine how psychological fields of study, theories, and practice, as well as psychology’s governing body, the American Psychological Association (APA), have impacted and been impacted by these social movements. Of particular note, this chapter will explore the impact of various social movements on psychology within the United States (U.S.). Although these social movements have often reflected more global phenomena, the discussion will be limited to those social issues that significantly impacted psychology in the U.S. While we acknowledge the many additional global social issues that have shaped the practice of psychology over time, they are beyond the scope of this chapter.

Early 20th Century

The early 20th century brought about significant change to the field of psychology, stemming from a shifting sociopolitical landscape and impacted, as most societies are, by the effects of war. By 1905, first-wave feminists had made a significant impact (Moss, Stam, & Kattevilder, 2013),
challenging gender inequality and demanding a political voice for women (Collins, 2009). It was also in 1905 that Mary Whiton Calkins was elected as the first woman president of APA. Not only did her occupation of this role defy commonly held beliefs among researchers in psychology about the cognitive abilities needed for leadership (Moss et al., 2013), but Calkins blazed an early path to challenging traditional gender roles in the U.S. and revolutionizing the way in which women participated in psychology (Collins, 2009; Furumoto & Scarborough, 1986).

**World War I**

Within 10 years of Calkins’s inauguration as APA President, another movement had gained momentum, with psychologist and pediatrician Arnold Gesell publishing an article endorsing eugenics as a plausible measure for ensuring the preservation and propagation of superior genetics (Gesell, 1913; Harris, 2011; Moss et al., 2013). With large numbers of able-bodied, socially highly-regarded men being sent overseas to fight during the First World War (1914-1918) and a declining birthrate among the college-educated and Anglo-Saxon population, concerns began to arise that individuals left behind were “mentally defective” or “feeble-minded” and would begin to procreate, marring the genetic pool and begetting future generations lacking in moral and mental character (Moss et al., 2013, p.106). During this time, feeble-mindedness served as an umbrella term, used not only to describe degrees of intellectual disability, but also to reflect mental health disorders, criminal acts, sexual promiscuity, and other behaviors deemed immoral (Moss et al., 2013). Not only were eugenic writings being widely distributed, but they were concurrently resonating with the general public, affirming and proliferating the beliefs that some held during this time period (Harris, 2011). Although terminology changes consistently within the field of psychology, often altered to engender more inclusive language, the aforementioned example illustrates the ways in which popular consensus and cultural forces influence the ways in which mental health and illness are defined (Clegg, 2012; Kawa & Giordano, 2012). Furthermore, the religious climate, political agenda, and relationships between dominant and underrepresented groups equally propagated the ways behaviors were interpreted and categorized (Clegg, 2012). While psychologists have sought to identify concrete boundaries that define mental health and characterize mental illness, an historical look highlights numerous events during which diagnoses and treatments were based generally on cultural values, norms, attitudes, and opinions (Clegg, 2012; Mayes & Horwitz, 2005).

**World War II**

Psychology is often employed to describe social phenomena, determining ways human behavior can be predicted and eventually influenced (King, 2013). World War II (1939-1945) prompted a series of events, several of which provoked the curiosity of researchers and many of which created a need for services (McCarthy, 2014; Pickren, 2007; Scull, 2010). In 1961, Stanley Milgram embarked on a series of experiments sparked by the proceedings of the Nuremberg Trials (Piña e Cuñha, Rego, & Clegg, 2010). Adolf Eichmann, an officer in the German army, was tried for crimes against humanity and his role in the extermination of thousands of Jews. During his trial he asserted his role was one of obedience rather than malice (Piña e Cuñha et al., 2010). Milgram questioned Eichmann’s defense, doubting the power of authority in obedience and set out to complete a study testing the premise that German soldiers were simply more agreeable than others when given orders (Milgram, 1965). Within a year, Milgram began experimenting, encouraging participants to exert manufactured physical punishment through the use of a dial and noting their responses. Milgram’s results not only refuted his hypothesis, but they demonstrated that human beings are highly prone to being influenced by individuals believed to be in positions of authority (Milgram, 1965). These landmark experiments fueled ethics debates related to deception.
informed consent, risk to participants, and emotional distress (Blass, 1999). Milgram’s work also shed light on the importance of power within the therapeutic relationship and advanced the field of social psychology (Blass, 1999).

The Second World War similarly brought about cultural changes that inevitably impacted psychology. Although women had historically worked within the home, the mass deployment of men generated a need for women’s employment outside the home as a way of providing for their families and supporting the troops (Denmark & Paludi, 2008). This shift in division of labor generated a new perspective for exploring vocational options and career development for men and women, while simultaneously continuing to raise questions about traditional gender roles (Denmark, Klara, Baron, & Cambareri-Fernandez, 2008; Shields, 2007). Psychologists were compelled to consider the ways in which cultural context influences the experience of gender and the ways in which gender is performed, exemplified by the image of Rosie the Riveter as a juxtaposition of strength, autonomy, and traditional femininity (Collins, 2009).

As World War II ended, the department of Veterans Affairs (VA) experienced an overwhelming influx of soldiers returning home with combat fatigue or war neurosis (Pickren, 2007; Scull, 2010). Although the aforementioned terms have since been replaced with post-traumatic stress disorder, the VA system faced an inordinate demand for mental health services to help soldiers with the adjustment of returning to civilian life and coping with the trauma that many experienced (Pickren, 2007; Scull, 2010). As a result, the federal government and the National Institutes of Health (NIH) sanctioned resources to fund the Servicemen’s Readjustment Act, informally known as the G.I. Bill (McCarthy, 2014; Pickren, 2007). The G.I. Bill entitled all veterans to tuition remission and vocational services, fueling a shift toward applied psychology to meet the demands for services and sparking interest in the development of a new specialty, vocational counseling (Pickren, 2007; Scull, 2011). Although the early 20th century was marked by initial unrest, upheaval, and widespread injustices, the foundation was set for the catalytic revolution ushered in by the decades to follow. The discipline of psychology reflected, responded to, and initiated change that resulted from the pivotal social and cultural shifts in this time period.

**Mid-20th Century**

The mid-20th century may be the most influential time period in advancing the study and practice of psychology toward a human rights agenda. With the convergence of second-wave feminism, and the Civil Rights, Gay Liberation, Antiwar, and Disability Rights Movements, the mid-20th century, particularly the 1970s, was an era in which the U.S. was immersed in discussions of equality, the value of human life, and the rights of people both foreign and domestic. Though opinions varied greatly as to the legitimacy of these movements, the conversation had begun and widespread social and political activism emerged and proliferated. While many prior changes in psychology improved understanding of various groups of people, perhaps no other time period is defined by such a significant shift in the cultural milieu (reference). As a result, the APA initiated a number of significant actions toward human rights during the mid-20th century. Between the late 1960s and early 1980s, the APA voted to conduct business only with organizations that did not engage in discrimination, hold no APA conventions in states that had not ratified the Equal Rights Amendment (ERA), included sexual orientation as a prohibited type of discrimination, and reaffirmed human rights and dignity as an important concern of the APA, among many other related decisions (Rosenzweig, 1988). Accordingly, this shift in the cultural milieu seemed to serve as a catalyst for the social justice focus that remains an integral part of psychology to this day.
Civil Rights Movement

The Civil Rights Movement of the 1950s and 1960s can be largely attributed to the work of the National Association for the Advancement of Colored People (NAACP) in Brown v. Board of Education of Topeka in 1954 ("Civil Rights," 2014). While the NAACP formed and began fighting legal battles and training civil rights attorneys in the early 1900s, well before what became the Civil Rights Movement (NAACP, 2015), their work on Brown v. Board and related cases launched the most significant period of change and movement toward equality for the rights of people of color in U.S. history (Garrow, 1994). The ruling in Brown v. Board of Education determined that "separate but equal" had no place in public education (Brown v. Board, 2010) and violated the 14th amendment of the Constitution (NAACP, 2015). The decision compelled U.S. schools to begin integrating Black and other students of color with White students (Brown v. Board, 2010).

Following the decision in Brown v. Board, due to strong opposition from many White citizens, Black activists organized in order to ensure that the ruling was implemented in schools across the country. Individual Black citizens began to resist discriminatory practices as exemplified by Rosa Parks’ refusal to offer her seat on a city bus to a White person and, on a larger scale, the emergence of Martin Luther King, Jr. as a national leader of the Civil Rights Movement ("Civil Rights," 2014). An escalation of demonstrations and protests against segregation and other forms of racism, particularly in the South, continued through the late 1950s and early 1960s. After a number of incarnations, pressure from the now-massive Civil Rights Movement resulted in the passing of the Civil Rights Act of 1964 introduced by President Kennedy the previous year (Hall, 2005; Loevy, 1997). The Civil Rights Act prohibited racial segregation in any setting and discrimination by employers and schools ("Civil Rights," 2014).

During the early Civil Rights Movement, two Black psychologists, Mamie and Kenneth Clark, published several studies in 1940s and 1950s that suggested Black children internalized negative racial attitudes toward the Black community. In these studies, when offered a choice between a Black or White doll, Black children typically chose the White doll (Clark & Clark, 1940). When asked to color a person of the other sex the way the child would like them to be, more than half of the Black children colored the person White or an irrelevant color, rather than brown or black (Clark & Clark, 1950). These studies and the implication that children of color were emotionally harmed by segregation and negative racial attitudes were important contributions to Brown v. Board and its predecessors (Iijima-Hall, 2014).

As Black citizens in the United States organized together and gained rights previously denied them, psychologists began to attempt to describe the process by which Black individuals developed a Black identity. Thomas (1970) and Cross (1971) developed identity models describing stages comprising what they termed the Negro to Black conversion. Models generally began with an identity largely defined by the European American perception of Black culture, moved through a period of anger and resistance to White culture, and ended with the internalization of a Black identity and a commitment to social activism related to advancing the interests of Black citizens (Cross, 1978). Such identity models were made possible by the change created by the Civil Rights Movement and likely helped to normalize the complex experiences of Black people as they navigated a rapidly changing culture.

Second-Wave Feminism

From the mid-1960s through the early 1980s, the Women’s Liberation Movement, representing the second wave of feminism, was active and influential in the U.S. In 1966, on the heels of the Civil Rights Movement, Betty Friedan and others founded the National Organization for Women (NOW)
with the intent of advocating on behalf of women in the manner consistent with the NAACP’s advocacy for the Black community (Collins, 2009). A major focus of NOW was to ensure that sex discrimination in the workplace, which was prohibited by the recently-passed Civil Rights Act, was enforced (Collins, 2009; Loss, 2011). While NOW continued to reform public policy in the interest of women, other women’s organizations formed to address other concerns such as reducing the sexual objectification of women and advocating the rights of women of color. Outside of these larger organizations, smaller, more intimate, consciousness-raising women’s groups began to organize all over the country to explore gender and the traditional roles and expectations of womengroups (Loss, 2011; Sharf, 2008). In fact, most U.S. women identified with the movement during the height of its popularity (Gordon, 2013). Despite some variation in the intention and focus of these organized groups of women, feminists held the desire for respect, equality, and justice for all people in common (Worell & Remer, 2003).

This desire for justice and equality began to influence the psychology of women in the mid-20th century. Prior to second-wave feminism, very few writings on the psychology of women were published. The few works that were published painted women as inherently different from -- and inferior to -- men and were written largely by men from an androcentric perspective (Denmark et al., 2008; Hegarty & Buechel, 2006). However, in the 1970s and early 1980s, formative scholarship on the psychology of women, authored by women, begin to appear, including Jean Baker Miller’s Toward a new psychology of women (1976) and Carol Gilligan’s influential In a different voice (1982).

Both Miller (1976) and Gilligan (1982) were critical of the ways in which women’s personalities and relational traits were devalued by male-dominated psychological theories and literature. Gilligan’s work served to incorporate and value the important role of care and compassion, traits traditionally viewed as feminine, in the moral decision-making process of both men and women (Sharf, 2008). Miller’s writings provided a foundation for feminist psychotherapy. Many women in the feminist movement opposed psychotherapy, noting that the problems women faced were largely political in nature and the result of systemic oppression (Loss, 2011). Additionally, traditional theories of psychotherapy, such as Freud’s psychoanalytic theory, were inherently patriarchal and reinforced the perception of women as inferior to men (Friedan, 1963). Miller (1976) called for a validation of the value of women’s tendency toward relationships and theorized this was due to the necessity for women to reach out to others to cope with systemic sexism. Feminist therapies, such as relational-cultural therapy (RCT), frame women’s and men’s desire for meaningful connection with others as adaptive and healthy (Jordan, 2010).

The women’s liberation movement of the mid-20th century provided the necessary momentum for psychologists to begin examining the gendered nature of psychological theories and common knowledge. Psychologists began to incorporate the voices and perspectives of women in research and practice in order to better explain the phenomena it explored and treated. As a result, feminist psychologists were able to provide scientific legitimacy to the hard-fought battles of feminist activists.

Gay Liberation Movement
While Freud is often credited with creating the terms heterosexual and homosexual (Nadal, 2013), the term homosexual was coined in 1868 and first used publicly in 1869 by Karl-Maria Kertbeny in his attempt to reform German sodomy laws (Wilkinson & Kitzinger, 1994). The words did not become a part of popular culture until 1930 when a New York Times critic used them in a published book review. From this point forward, not only the word heterosexuality, but also the concept of heteronormativity, became prevalent in U.S. culture, peaking during the post-World War II focus on
the traditional, nuclear family (Katz, 2010). As the fear of communism rose in the 1950s, the expectation for men to present as hypermasculine increased as well. Therefore, gay men, who were perceived as less traditionally masculine, became associated with the Communist party (reference). Thus began an era of largely unwarranted attention from the Federal Bureau of Investigation (FBI; Charles, 2010), as well as increased legal intrusions against gay people (Carter, 2009).

One such group investigated by the FBI was the Mattachine Society (Charles, 2010). Founded in 1951 in California and later spreading to other major U.S cities, including Philadelphia and New York City, the group was established in response to the increased negative perception of gay people during the mid-20th century. Known as homophile activists, members of the Mattachine Society and other gay and lesbian organizations publicly protested discrimination against gays, hosted public lectures (Hall, 2010), and were able to end the routine entrapment of men in gay bars in New York City in the late 1960s (Gorton, 2009). While these groups accomplished important work for LGBT people, they remained relatively small and were largely unknown by the majority culture (Carter, 2009).

Although smaller groups had organized previously, the birth of the Gay Liberation Movement is attributed to the Stonewall riots of 1969 (Hall, 2010; Nadal, 2013). Police raided the Stonewall Inn, a popular gay bar in New York City’s Greenwich Village, on June 29, 1969. As police led patrons out of the bar violence erupted, resulting in a number of arrests and injuries of both patrons and police. While the exact catalyst for the violence is unknown, it is likely that a combination of aggressive police and patrons’ anger resulting from repeated experiences of discrimination and profiling were the causes. Immediately following the riots, thousands of demonstrators convened at the Stonewall Inn in defense of LGBT rights, and a movement was born (Hall, 2010).

In the 1970s, LGBT organizing and the visibility of these organizations significantly increased (Gorton, 2009; Hall, 2010). In addition, greater presence in the public consciousness and increased participation in the movement allowed for activism related specifically to changes in public policy. The most notable goals of the movement in terms of public policy were the passage of antidiscrimination laws and the repeal of anti-sodomy laws (Kane, 2010). These goals remained an important focus of the movement in subsequent decades. Sodomy was decriminalized in 2003 (Kane, 2010). By the end of the 20th century, 11 states adopted laws that prohibit discrimination based on sexual orientation (Kane, 2010); that number grew to 23 in 2016 (ACLU, 2016). While public policy change continues to occur gradually, the influence of the Gay Liberation Movement in advancing the rights and increasing representation and visibility of LGBT people cannot be understated.

Regarding its impact on psychology, the Gay Liberation Movement played an integral role in redefining homosexuality as a sexual orientation rather than a mental illness. While Kinsey and other sex researchers in the late 1940s and 1950s provided evidence that same-sex attraction and sexual behavior were far more common than previously thought (Bancroft, 2004; Chiang, 2008; Kinsey, Pomeroy, & Martin, 1948; Kinsey, Pomeroy, Martin, & Gebhard, 1953; see vignette), in the early 20th century, and with increasing frequency into the 1950s, many psychologists and physicians continued to regard homosexuality as a pathological disorder (Nadal, 2013). In the 1950s, the first incarnation of the Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association, 1952) included homosexuality among other mental illnesses such as depression and psychoses. Many suspected homosexuals during this time frame were
involuntarily institutionalized and subjected to a variety of inhumane treatment methods ranging from electro-shock therapy to lobotomies (Carter, 2009; Nadal, 2013).

However, in the 1970s, in the midst of the new and powerful Gay Liberation Movement, the DSM was reviewed for an upcoming revised edition, the DSM-III. Robert Spitzer, a psychiatrist appointed to head up the revisions to this new edition of the DSM, desired a minor change to the definition of homosexuality so that it would be categorized as an abnormal sexual behavior rather than a disorder. Mounting pressure from gay activists, demonstrations outside the American Psychiatric Association’s offices, and opposition from the American Psychological Association ultimately resulted in the complete removal of homosexuality from DSM-III in 1973 (Mays & Horwitz, 2005).

Disability Rights Movement
In the mid-20th century as people of color, the LGBT community, and women organized and advocated for their rights, so too did individuals with disabilities. Many of those who served as early activists for disability rights were diagnosed with polio as children, resulting in challenges to or loss of their mobility (Barton, 2009; Patterson, 2012). In 1972, one such man, Ed Roberts, established the nation’s first Center for Independent Living (Barton, 2009). In the same year, members of Disabled in Action shut down New York City traffic by positioning their wheelchairs in the center of Madison Avenue in protest of then-President Richard Nixon’s veto of a bill providing equal protection for individuals with disabilities (Patterson, 2012). Two years later, in 1973, 120 protestors held a 25-day sit-in at a U.S. federal building in San Francisco in order to pressure President Nixon into signing into law Section 504 of The Rehabilitation Act, ensuring protection against discrimination for Americans with disabilities (Fleischer & Zames, 1998).

Also in 1973, the Consortium for Citizens with Disabilities was founded in Washington, D.C. Their work promoted the eventual enactment of the Developmental Disabilities Assistance and Bill of Rights Act in 1975, and they continue to advocate for people with disabilities via a number of taskforces today. Other significant achievements by disability activists in the mid-20th century include the Architectural Barriers Act of 1968 that mandated federal building be accessible to individuals with physical disabilities (West, 1993), and the Individuals with Disabilities Education Act which guaranteed a free, public education to children with disabilities (Fleischer & Zames, 1998). The work of these early activists paved the way for the passage of the Americans with Disabilities Act (ADA) in 1990 that provides equal protection for and prohibited discrimination against individuals with disabilities. The ADA is also regarded as important legislation in its impact in shifting attitudes regarding persons with disabilities from sympathy, pity, and exclusion to respect and inclusion (West, 1993).

In the 1960s, psychologist Donald Baer’s development and study of applied behavior analysis with individuals with intellectual disability (ID) introduced the capability of individuals with ID to live on their own and encouraged a movement toward deinstitutionalization, job training, and education. Further, Baer’s studies provided empirical support for legislation advanced by disability rights organizations in the mid-20th century (Routh, 2005).

One of the earliest divisions established within APA was Division 22, the Division of Rehabilitation Psychology. In 1958, Division 22 was organized in order to address psychological and social concerns of individuals with disabilities. Many members of the division were responsible for early psychological research related to disability, including prejudice and stereotyping (APA Division 22, 2015). Since the late 1950s, Division 22 has continued to advocate for individuals with disabilities.
Recently, the division’s advocacy interests have included improved health care reimbursement and improved use of technology (Brown, DeLeon, Loftis, & Scherer, 2008).

**Implications for Psychologists and the American Psychological Association**

Empowered by the movements of the mid-20th century and dissatisfied with the response of the APA, groups of psychologists began to organize and form groups such as The Association for Women in Psychology (AWP) in 1969 and the Association of Psychologists por la Raza, a precursor to the National Latina/o Psychological Association (NLPA) in 1970 (Delgado-Romero, Forrest, & Lau, 2012). The Association of Black Psychologists (ABP) was formed in 1968 with the intention of addressing the overlooked needs of Black clinicians (ABPSI, 2015; Obasi, Speight, Rowe, Clark, & Turner-Essel, 2012), and in 1970 APA elected its first Black President (Iijima-Hall, 2014). Specialized divisions within the APA began to form with the intention of addressing the specialized psychological study of diverse groups, including the Society for the Psychological Study of Ethnic Minority Issues (Comas-Díaz, 2009) and the Society for the Psychology of Women (Russo & Dumont, 1997). Given the clear emphasis on human rights during the mid-20th century as indicated by the convergence of several major social movements, as well as the message sent through organized groups of marginalized psychologists, the APA responded by making multiculturalism a focus as it sought to redefine the practice of psychology in the 1970s (Ivey & Leppaluoto, 1975; Sue, Bingham, Porche-Burke, & Vasquez, 1999). Although these movements began in the mid-20th century and many of their major achievements are typically associated with the 1960s and 1970s, the movements remain active today. As marginalized groups continue to advocate for themselves along with their allies, psychological researchers and practitioners modify their work to best reflect the needs, desires, and work of these activists, as well as the rapidly changing demographics of the U.S.

**Late 20th Century to Present**

**Innovation and Technological Advances**

The 1980s were a period of rapid innovation, with the introduction of the personal computer to the general public and the advent of the World Wide Web launched in 1991 (Edgar, 2012). Access to information from anywhere in the world boosted the process of globalization, facilitating communication, and allowing individuals to engage in contact with others from their homes and workplaces. This period demonstrated a bi-directional influence, wherein the general public had greater access to psychological resources, tools, and media, and researchers within psychology had unprecedented ability to collect data from online surveys, reach other professionals through listservs, and search databases (Gore & Leuwerke, 2008). Moreover, the initiation of the Internet altered learning models and theories within psychology (Edgar, 2012). While early scholars had demonstrated a focus on recitation literacy, furthered by the work of behaviorists advocating that learning occurred through a simple stimulus-response method, learning and thinking became better understood and appreciated as complex processes (Edgar, 2012; Watson, 1913). Learning moved toward an extraction literacy model, wherein individuals were believed to make connections to experiences, content, and material around them through interaction, investigation, and context (Edgar, 2012). Learning, in many ways, has developed into an understanding of where and how to search for information, rather than rote memorization of data (Edgar, 2012).

The innovation of online technology and visual/communication devices boomed shortly after the inauguration of the Internet, with the invention of webcams, services for online chatting, and conferencing software (Layne & Hohenshil, 2005). These advances incited a new form of therapy, allowing clinicians to reach clients who were in remote locations and would normally not
have access to a mental health professional, had physical disabilities, or would be unlikely to seek out treatment via a traditional face-to-face session (Shaw & Shaw, 2006). Cybertherapy, teletherapy, and online counseling, among other forms of virtual therapy, fulfill needs that have been difficult to address, while also introducing numerous ethical concerns related to confidentiality, appropriate credentialing, and complexities when working with clients across state lines where codes of ethics vary (Botella, Garcia-Palacios, Banos, & Quero, 2009). In 2013, the APA published the first set of guidelines for psychologists practicing telepsychology (APA, 2013a).

**Violence, Terrorism, and Trauma**

The late 20th and early 21st centuries were also characterized by a focus on the effects of violence, terrorism, and trauma. A noteworthy increase in school shootings, such as those that occurred at Columbine High School, Virginia Tech, and Northern Illinois University engendered a national dialogue about mental health in youth and young adults, aggression, and the prevention of violence (Jenson, 2007; Stallworth-Clark, 2007). These debates brought into focus the importance of familial variables, community factors, genetic predispositions, and social relationships and networks among youth (Jenson, 2007; Wetterneck, Sass, & Davies, 2004). Moreover, this closer inspection of aggression intersected with a concern about the effect of violent video games that became popularized in the 1990s and early 2000s (Willoughby, Adachi, & Good, 2012). Significant literature emerged from an examination into these topics, with professionals within the field contemplating the efficacy of psychotropic medications on young adults, and identifying cognitive, emotional, and behavioral markers that may be predictors of future aggressive behavior (Jenson, 2007; Wetterneck et al., 2004). More importantly, psychologists were compelled to explore the ways in which professionals could serve as advocates for youth who have little access to resources or who reject seeking out mental health services due to perceived stigma (Stallworth-Clark, 2007). The 2005 Resolution on Violence in Video Games and Interactive Media guided by the APA is currently under revision with continued interest following into the early 21st century (APA, 2005).

Concurrently with this focus on youth and aggression, additional acts of violence drew the attention of psychologists. In 1995, Timothy McVeigh and Terry Nichols detonated a truck bomb outside a federal building in Oklahoma City, capturing the nation’s attention, as hundreds were injured or killed (CNN Library, 2014). Less than a decade later, the terrorist acts of 9/11/2001 resulted in an increased emphasis on social issues, crisis counseling, coping, and grief resulting from traumatic events, as well as problems of religious extremism and persistent marginalization of people of color following the events, including increased profiling and hate crimes (Khan, 2014). With increased inter-group tension, practitioners, educators, and researchers launched new work endeavors delving into peace psychology, conflict resolution, multicultural advocacy, and perceptions of threat (APA, 2014; Anderson & Christie, 2001). Psychologists were called upon during televised interviews, newspaper articles, and radio addresses to explain the process of terrorism, describe profiles related to people who engage in terrorism, and analyze the fear that had infiltrated into the U.S. collective (DeAngelis, 2009). The APA responded to these events by launching a task force entitled, Promoting Resilience in Response to Terrorism in 2002, producing various fact sheets for working with different populations (APA, 2014). Moreover, the APA demonstrated an interest in discussing the complexities that drive terrorist acts, seeking to dispel myths about radical religious groups and to humanize political discussions on cultural differences (DeAngelis, 2009).

Although the APA as a governing body seeks to promote wellness and positive mental health (APA, 2010), it is also important to acknowledge that psychologists have also contributed to world events, oftentimes profoundly influencing rather than merely reacting. Recent documents have emerged,
implicating the participation of psychologists in the development, experimentation, and use of abusive counterintelligence and interrogation techniques during the Second World War through the war in Afghanistan (Soldz, 2008). Declassified documents have revealed that interrogation techniques, such as prolonged isolation, sleep deprivation, sexual and cultural humiliation, and sensory distortion were taught to teams in Guantanamo Bay, Iraqi camps, and camps in Afghanistan where psychologists were employed (Miles, 2007; Soldz, 2008). Subsequent controversy and debate within the field spurred the 2013 Policy Related to Psychologists’ Work in National Security Settings and Reaffirmation of the APA Position Against Torture and Other Cruel, Inhuman, or Degrading Treatment or Punishment, wherein the APA expressed a desire to support psychologists to dissent in government work environments that employ torturous or abusive techniques and affirm an ethical responsibility to promote human rights and advocate for all detainees (APA, 2013b). This sequence of proceedings illustrates the interrelatedness of political climate in shaping psychology and the ways in which psychology has also influenced societal movements.

**Post-Modern Feminism**

Post-modern feminism, the third wave of feminism, began taking hold in the 1990s, highlighting the importance of language usage in the ways in which culture is constructed and defined according to the sociopolitical climate (Sewpaul, 2013). Psychologists began to challenge the relevance of most categories, including race, gender, and sexual orientation, among other diversity variables, suggesting that most of these categories are not only inaccurate, but can also be limiting in the ways in which people understand themselves and others (Sewpaul, 2013; Stone & Ward, 2011). This movement further paved the way for social movements that began in the mid-20th century, such as efforts to end racial/ethnic injustices and become more receptive to sexual diversity (APA, 2003; APA, 2000). Most recently, a renewed focus on LGBT rights has led to the formation of a task force to generate the “Guidelines for Psychological Practice with Transgender and Gender Non-Conforming Clients,” currently underway, to address intersections between other diversity variables and gender identification (APA, 2015).

**Conclusion**

Psychology has a rich history, interwoven with and responsive to the meaningful events and movements that have occurred nationally. As new generations of psychologists emerge, the national landscape continues to shift over time and our collective understanding is enhanced, it is our hope that the field continues to advance its social justice agendas built on the sacrifices, wisdom, and heroic efforts of past generations and interfacing with and responding to new advancements in technology, knowledge, and research.

**Vignettes**

**1. A Brief History of Drug Use in the Context of U.S. Social Movements**

Although the problematic use of mind-altering substances likely dates back thousands of years, a formal scientific exploration of addiction did not occur until relatively recently. Early 19th century researchers theorized about the causes of addiction, while late 20th century advances in medical technology allowed scientists to explore brain activity in innovative ways. As with mental health research generally, the psychological understanding of addiction has evolved over time. The evolution in the definition, understanding, and treatment of addiction was driven in part by social issues and problems in the U.S.
In the late 19th and early 20th century, although there was some medical literature suggesting genetic and biological influences, addiction was typically attributed to amorality and an inability to control one’s behavior (May, 2001). The rise of addiction in the U.S. may have begun with the liberal administration of morphine to soldiers during the U.S. Civil War resulting in widespread opiate addiction by 1900 (Courtwright, 1978). Later, many veterans returning from World Wars I and II suffered from shell shock, a combination of symptoms that resembled what we now consider post-traumatic stress disorder (PTSD; May, 2001; Stagner, 2014). As these psychological complications due to war were not well-understood at the time, and thus largely untreated, many veterans turned to substances, commonly alcohol, to ameliorate unwelcome symptoms (Bergen-Cico, 2011).

In 1935, during the post-WWI era, in the absence of any standardized treatment recommendations for addiction, Bill Wilson, a man struggling with alcoholism, organized Alcoholics Anonymous (AA) meetings along with other men with identified substance abuse and dependence concerns, some of whom served in WWI. These meetings provided a community of individuals to whom one could be accountable for their problematic substance use in an anonymous context. Bill W., as he has been known in the AA community, together with his co-founders, developed a 12-step model for overcoming addiction and published a book outlining the model in 1939 (Alcoholics Anonymous, 2001; Alcoholics Anonymous, 2015).

While some praised the AA model, many were critical of the text and its lack of a scientific foundation. Psychologist Albert Ellis acknowledged the model’s ability to be useful to many people, but challenged the model’s emphasis on endorsing a belief in a Higher Power and surrendering to powerlessness as nonbelievers were also capable of achieving sobriety (Ellis, 1992). In spite of the fact that similar criticisms of AA continue to be circulated today (Peele, 2012), coupled with limited evidence of its efficacy (Boston, 2015), AA, and 12-step models based on AA, remain the most common addiction treatment model in the U.S (CASA, 2012). AA’s continued popularity may be in part due to the widespread availability of confidential AA meetings across the country and the cost-prohibitive nature of rehabilitation facilities. Although the American Medical Association (AMA) classified alcoholism as a disease in 1956, addiction has remained unlikely to be treated with parity to other medical illnesses by insurance providers (Roy & Miller, 2010).

In the mid-20th century, the use of substances like marijuana and psychedelic drugs increased. As hippie/counter culture made its way into the mainstream in the 1960s, more and more people, particularly young people, began to experiment with drugs like LSD, a hallucinogen (Hamburger, 1969). Though highly controversial, hallucinogens were studied by prominent psychologists Richard Alpert and Timothy Leary at Harvard University (Dass, 1971; Wark & Galliher, 2010) for their ability to alter one’s consciousness, shift awareness, and potentially improve creativity. The increase in drug use occurred simultaneously with significant social change in the U.S. initiated by the organization of various marginalized groups as they advocated for equal rights (see chapter). Conservative groups in the U.S. reacted negatively to the rapid changes taking place in U.S. culture. Video and print propaganda was developed to communicate the dangers and lethality of various drugs, including marijuana, in order to dissuade young people from engaging in drug use (Manning, 2013). Leary and Alpert, the Harvard professors studying LSD, were fired as Harvard attempted to protect its reputation in the wake of the backlash (Dass, 1971; Wark & Galliher, 2010). A shift began toward the criminalization of drugs. President Nixon launched the “war on drugs” in 1971, a system of policies upheld by subsequent administrations (Whitford & Yates, 2003). These events resulted in fewer opportunities to study the potential psychological benefits of psychoactive drugs and community mental health programs and instead increased research related to the dangers of...
drugs as well as toward increased perception of substance abusers as deviant (Humphreys & Rappaport, 1993).

Around the same time, in the late 1960s and early 1970s, U.S. soldiers in Vietnam returned alarming rates of addiction, often to heroin. As a result, the government funded research to explore the problem and provided resources that allowed for more representative data related to addiction than had been previously available (Peele, 1981). In one study, for example, rats were either isolated or allowed a pleasant, social environment. For each condition, water and morphine solutions were made available to the rats. Social rats were far less likely to choose the morphine solution than rats that were isolated (Alexander, Coambs, & Hadaway, 1978). Likewise, many soldiers in Vietnam used heroin during their deployment, in a challenging and traumatic environment, but successfully discontinued use upon their return to the U.S (Peele, 1981). These studies were initiated in response to the national, social problem and contributed important literature related to the development and treatment of addictions.

In 1978, former First Lady Betty Ford was confronted by her family for her history of prescription drug and alcohol abuse (Clark, 2012). Shortly thereafter, she completed treatment at an alcohol and drug rehabilitation facility and later wrote and spoke publicly about her experience. In a dramatization of Betty Ford’s experience made for television, this confrontation by her family provided a model for the modern intervention in which individuals express their concerns for an addicted loved one and encourage her/him to seek treatment (Clark, 2012). The candid nature with which Betty Ford discussed her experience with addiction with the nation sparked a national conversation, further promoting the study of addiction and addiction treatment in particular.

As medical technology became more advanced in the late 20th century to the present, researchers focused attention on brain processes rather than particular substances (Markel, 2012). Neuropsychologists began to explore the role of the dopamine system in addiction (Berridge & Robinson, 1995). Other researchers used positron emission tomography (PET) scans and other forms of brain imaging to observe the areas of the brain activated when individuals with addiction were exposed to their substance of choice (Markel, 2012; Volkow, Wang, Fowler, Tomasi, & Telang, 2011).

Such studies gave way to a new scientific and medical model of addiction. Psychologists considered the unique combination of genetic, environmental, and behavioral factors in conceptualizing individuals with addiction, placing less emphasis on personal responsibility and morality and increased attention to contextual, biological catalysts undergirding addictive behaviors. The current disease model of addiction may be largely attributed to the major changes in the perception of drugs and drug use in the U.S. throughout the 20th century.

2. Deinstitutionalization: Economics and Psychology
Rapid advancement in psychiatric medications made significant contributions to modern psychology, intersecting with historical events, to forever change the trajectory of mental health practice. The 1940s were a challenging period for the fields of psychology and psychiatry, as both struggled to establish their legitimacy (Kirkby, 2005). With few formal methods of treatment available outside of institutionalization in asylums, psychologists often resorted to electroconvulsive therapy (ECT), insulin comas, and lobotomies to treat patients with chronic mental health concerns (Kirkby, 2005; Smoyak, 2000). Dreadful housing conditions within asylums spurred close investigation into the treatment of patients (Edmondson, 2012), many of whom were residing in overcrowded hospitals (Morrissey & Goldman, 1986) where the nurse and doctor-to-patient ratios often ranged from 1 to 1,320 or 1 to 500, respectively (Grob, 1991; Smoyak, 2000).
Many of these patients had little or no formal sources of financial or social support and were unmarried, with no parents, siblings, or children to care for them in old age (Kirkby, 2005). The lack of available treatments that proved efficacious over time led some to believe that individuals diagnosed with mental illness were simply condemned to live out their lives within institutions, with little hope of reprieve from symptoms or life as functioning members of society (Edmondson, 2012; Morrissey & Goldman, 1986). Ensuing events, however, provided hope for the treatment of long-term and severe psychosis.

During World War II, mental health workers began to note the high numbers of soldiers affected adversely by combat and subsequently developing symptoms and disorders associated with the environmental stressors (Smoyak, 2000). Psychiatrists and psychologists began treating soldiers through a simplistic regiment of food, sleep, and showers within their aid stations, observing great improvement in symptoms (Smoyak, 2000). Psychologists advocated for a similar civilian model, arguing that treatment within a community setting through early identification and intervention held promise as an alternative to asylums (Smoyak, 2000). Through the urging of these professionals, President Truman signed the National Mental Health Act in 1946, providing financial backing for mental health research and the establishment of community treatment centers (Morrissey & Goldman, 1986; Smoyak, 2000). Unfortunately, a lack of consistent training, funding, and staffing led to a chaotic and unsuccessful implementation of the act (Smoyak, 2000).

The 1950s, however, reintroduced the possibility of community treatment centers, with the discovery of psychotropic drugs and milieu therapy (Kirkby, 2005; Morrissey & Goldman, 1986). Phenothiazines, an umbrella group of antipsychotic drugs, were introduced to the U.S. in medical studies in the early 1950s (Edmondson, 2012). Chlorpromazine, often traded under the name Thorazine, was the first drug introduced that had a substantial impact on reducing the hallucinations and delusions often associated with schizophrenia (Smoyak, 2000). Mental health professionals established a definitive relationship between neurotransmitters in the brain and mental illness, substantiating a biological role in mental health and the importance of science in psychology (Kirkby, 2005).

The ability to stabilize patients allowed psychologists and psychiatrists to discharge patients who would typically require lifelong institutional care, treating them through outpatient services (Kirkby, 2005; Morrissey & Goldman, 1986). Not only did this new model provide a scientifically sound treatment approach, it also allowed patients the ability to assert their autonomy by administering their own treatment and seeking support services as needed (Kirkby, 2005). It is estimated that over 550,000 individuals were institutionalized in the U.S. in the early 1950s, with recent statistics estimating that 50,000 to 80,000 individuals were institutionalized in 2012 (Edmondson, 2012). In 1963, the Kennedy administration passed the Community Mental Health Act to provide federal funding for the building of community mental health services, which was accelerated 2 years later following the adoption of Medicaid and Medicare (Smoyak, 2000). The mass discharge of patients, or deinstitutionalization, ushered in a new era of therapy, filled with promise, yet marked by unanticipated consequences (Edmondson, 2012; Morrissey & Goldman, 1986; Wright, 1989).

While many individuals experienced a reduction in psychotic symptoms and were discharged from institutions, a large majority soon realized that they had no stable housing, source of steady income, or sources of social support (Morrissey & Goldman, 1986). Similarly, many individuals with intellectual disabilities lacked the resources or skills necessary for independent living, while elderly individuals were simply transferred to nursing homes in order to meet their basic needs (Larson & Lakin, 2012; Morrissey & Goldman, 1986). In many ways, although the mental health field was
learning more about the biological causes of mental illness, there was a lack of attention to broader sociocultural variables, leaving disadvantaged groups seeking services elsewhere (Wright, 1989). Furthermore, as a result of the Vietnam War, federal funds previously vetted to finance community centers were severely impacted (Smoyak, 2000), and by the 1980s, the Reagan administration had begun to block mental health grants (Jones, 2015). As a result, many of the community treatment centers were never built, reaching a maximum of 754 centers rather than the projected 2,000 facilities (Larson & Lakin, 2012; Smoyak, 2000). By the 1980s, the U.S. was facing an unprecedented bout of homelessness and increasing rates of incarceration in jails and prisons, with many individuals who would previously have been institutionalized finding themselves with nowhere to go (Edmondson, 2012; Larson & Lakin, 2012; Smoyak, 2000). It is estimated that nearly 50% of those incarcerated and 25 to 80% of homeless individuals meet criteria for some kind of mental health diagnosis, but with limited access to treatment, are often incarcerated or chronically homeless instead (Morrissey & Goldman, 1986; USCM, 2013).

In 2009, the American Psychological Association commissioned a Presidential Task Force on Psychology’s Contribution to End Homelessness (APA, 2010). Psychologists have emphasized the role of a comprehensive method to treating clients in the community, exploring integrated approaches and acknowledging the complex relationship among political, cultural, and economic influences on services available to clients requiring mental health services (APA, 2010; Wright, 1989). More importantly, psychologists have begun to voice a need for a more active role as advocates during changing economic climates (APA, 2010).

3. Championing the Revolution: Key Developments and Pioneers in Sexual Orientation Justice

In the past two decades specifically, attitudes toward gays and lesbians—and to a lesser degree, toward bisexual and transgender people—have improved dramatically, with support for equal rights—including marriage, the right to adopt and raise children, job opportunities, and openly serving in the armed forces—at an all-time record high among U.S. citizens (Gay and Lesbian Rights, n.d.). Key people who initiated critical events via their activism, scientific inquiry, and advocacy laid the foundation for the changes that continue to occur with palpable speed over relatively short spans of time, though the groundwork was hard-fought and pursued with considerable courage by people whose voices were often silenced, discredited, and challenged.

Although the existence of people with same-sex attractions has been documented for centuries, the science of sexual orientation is relatively new, with the earliest roots in modern science traceable to Germany in the mid-to-late 1800s and the works of writer Karl Heinrich Ulrichs (Bullough & Bullough, 1997). In spite of Ulrichs’ measured efforts to gain widespread support for gays and lesbians, homosexuality was deemed a pathology and gays and lesbians were considered sick, a position that endured for more than a century to follow. A view of homosexuality as pathology lent itself well to the medical model with widespread belief that gays and lesbians were in need of treatment and could be cured by psychiatrists and psychoanalysts (Bullough & Bullough, 1997); homosexuality was initially designated a disorder in the first iteration of the Diagnostic and Statistical Manual of Mental Disorders (DSM) in 1952 (Chiang, 2008).

Early work by Katherine Bemet Davis, a reformer, criminologist, and chemist, produced the first significant study of lesbians in the 1920s, which, though largely ignored or disparaged, laid the foundation for the subsequent well-known works of Alfred Kinsey (Bancroft, 2004; Bullough & Bullough, 1997), which have been viewed alternatively with great criticism or as pioneering in their catalytic efficacy toward the movement for greater understanding of gays and lesbians. Kinsey
published his groundbreaking works on male and female sexuality, respectively, around the mid-
point of the 20th century (Chiang, 2008), both of which had an enduring impact on sexuality studies
more broadly and female sexuality and homosexuality more specifically (Bancroft, 2004; Bullough
& Bullough, 1997; Chiang, 2008). His works undoubtedly catapulted scientific inquiry and the legal
strides that followed in the ensuing decades, including the creation and distribution of hormonal
birth control, increasing support for reproductive healthcare, and gradual yet steady increases in
improved attitudes toward gays and lesbians in the latter part of the 20th century and well into the
first two decades of the 21st century.

While Kinsey’s work made the presence of same-sex behavior and attraction more visible and he
insinuated that there were no discernible differences between heterosexuals and gays and
lesbians, the lack of appreciable differences had not yet been scientifically established. One of the
earliest psychologists with an enduring legacy in advancing understanding of gays and lesbians was
Evelyn Hooker, a clinical psychologist who was challenged by one of her students at UCLA to study
homosexuality (Shneidman, 1998). Hooker compared two small groups of gay and heterosexual
men without a history of psychiatric treatment and demonstrated that their results on well-
regarded projective assessment measures could not be distinguished by a group of experts (Chaing,
2008).

While the achievement of increasingly favorable impressions of gays, lesbians, and bisexuals was
the result of more than a century of innovative science by biologists, chemists, and psychologists,
the present-day movement owes a significant debt of gratitude to others, among them activists
Barbara Gittings and Frank Kameny. Gittings and Kameny regularly protested and demonstrated for
greater understanding of gays and lesbians beginning in the 1950s and continuing for several
decades (Gittings, 2008). Among their greatest achievements was the successful effort in
convincing the American Psychiatric Association to remove homosexuality from its list of mental
disorders from the DSM, a victory hard-won in 1973.

Juxtaposed with improving individual attitudes toward gays and lesbians, as well as toward
bisexuals and increasingly, those who identify as genderqueer and transgender, have been legal
victories that have translated into the decriminalization of sodomy, an increase in
antidiscrimination policies, and general mobilization of gay and lesbian people, evidenced by
greater numbers of bars and businesses run by and for gay and lesbian people and increased
visibility in nearly all areas of public life (Kane, 2010). At this writing, following decades of active
struggle, marriage equality has been achieved at the federal level and is a hallmark in the quest for
full civil rights for gay and lesbian people (de Vogue & Diamond, 2015). While such a victory has
resulted in nationwide celebrations for those committed to ameliorating injustice, the importance
of tracing the long road to this achievement and paying homage to the heroic efforts of our
forebears cannot be overstated.

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Peace Psychology: A Tapestry in History

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Hermann Ebbinghaus (1908), one of the early founders of psychology as a discipline, wrote, “Psychology has a long past, yet its real history is short” (p. 3). Over a century later, historians could remark similarly about peace psychology. As a recognized discipline, this branch of psychology is still fairly new. The American Psychological Association (APA) formally recognized the Division of Peace Psychology (Div. 48; The Society for the Study of Peace, Conflict, and Violence) in 1990 but it wasn’t until 2004 that the first graduate program in peace psychology was introduced at the University of Massachusetts-Amherst. Although research is flourishing, peace psychology remains outside of the traditional psychology curriculum and few psychology textbooks include material or chapters specifically on peace psychology. Nonetheless, the roots of psychologists’ thinking, research, and efforts for peace date back to William James and represent multifaceted threads throughout psychology’s history.

Peace psychology is an interdisciplinary area of study that not only aims to ameliorate the effects of violence and destructive conflict but also facilitate the development of equitable, stable, and just cultures of peace. Peace psychologists recognize that peace isn’t just about global conflict but also family, safe homes, meaningful employment, stable communities, recovery from trauma, and social justice. Reflecting interdisciplinary concerns, peace psychology draws on research from a range of disciplines such as community, clinical, social, political, cognitive, personality, media, developmental, and positive psychology as well as political science, history, education, sociology, international relations, religion, human rights, and peace studies.

War, ethnopolitical conflict, genocide, threat of nuclear annihilation, and other forms of mass violence were the hallmarks of the twentieth century. Throughout that time, psychology engaged in two parallel but intertwining paths. Many psychologists over the past century endeavored to bring their skills and knowledge to assist the military and ongoing war efforts. From World War I (WWI) through the “Global War on Terror” (GWOT) today, psychologists have engaged in a host of psychological operations (PSYOPS), including training, mental testing and classification, troop morale; military tactics and strategy; wartime civilian productivity; propaganda and media agenda setting; prisoner interrogations; and psychological treatment of returning soldiers (Christie & Montiel, 2013). At that same time, psychologists from such disparate perspectives as structuralism, functionalism, gestalt, and behaviorism and through the breadth of disciplines today responded to global conflicts with a call for peace.

**Early Roots and WWI**

In 1906, William James gave his final public address at Stanford, entitled *The Moral Equivalent of War*; an essay subsequently published in 1910. In this essay, James, a pacifist, argued that war paints a noble picture and provides meaning and clarity to individual’s lives. Although he noted, “History is a bath of blood” (para. 4), James argued that war meets several psychological needs. According to James, war brings meaning and purpose to an individual’s life. Individuals faced with a life of toil, hardship, and mundanity in factories and sub-standard cities discover a sense of vitality, heroism, pride, meaning, and purposeful self-sacrifice when they become part of a good war. Moreover, military life provides structure, discipline, group cohesion, and a sense of being part of something bigger than oneself. James also argued that as a soldier focuses his energies on fighting the evil of others that his self-anxieties and fears disappear—the soldier is transformed in this noble endeavor into a hero. James drew on historical texts in his essay and yet, these themes are
common fodder in media today—war and consequent strength, honor, and glory viewed as equivalent.

James (1910) reasoned that, to achieve peace, we need to create a moral equivalent to war. He proposed conscription of young adults into public service as part of a war on nature. Young adults could build cities, serve on fishing vessels, or engage in some other form of public service. He argued that such service would meet the psychological needs for meaning, group cohesiveness, honor, as well as build character. Programs such as the Peace Corps and AmeriCorp VISTA exemplify the ideas espoused by James.

Interestingly, in 1917, Mary Whiton Calkins, who studied under James and went on to become the first woman President of APA in 1905 and the American Philosophical Association in 1918, advocated a position similar to her mentor. Calkins argued for what she termed “militant pacifism” (p. 70). According to Calkins, within all humans is the instinct for pugnacity—a readiness to resist, fight, and engage in war. She stated that pugnacity was tied to mental and physical factors such as response to oppositional forces and unmet needs (she posited a frustration-aggression hypothesis), thwarted curiosity, acquisitiveness or greed, and finally fear. Her position was that the elements of acquisitiveness and fear could be separated out of pugnacity. As such, the drive for war could be channeled away from violence against human towards a war aimed at building a more productive world grounded in “the virtues of generosity and justice” (p. 78).

During WWI, German nationals living in the United States were too often the recipients of prejudice and violence. Hugo Munsterberg, whose work at Harvard in applied and forensic psychology was foundational, was no different. Rumor spread that Munsterberg was a German spy or at minimum had ties to Berlin. As such, Munsterberg experienced death threats and calls for his removal from Harvard (Spillmann & Spillmann 1993). Indeed, one Harvard alumnus threatened to withhold a ten million dollar bequest unless Munsterberg was terminated. Munsterberg experienced torn loyalties between his country of origin and his new home in America. He wrote about his thoughts on American patriotism, war, peace, and argued for increased internationalization. At a time of increasing anti-German sentiment, Munsterberg’s call for understanding and cooperation was met with hostility. He experienced increasing levels of rebuke and Harvard cut off his laboratory publication funding. In one of his final works, The Peace and America, Munsterberg (1915) wrote:

Will the future be pacificist or belligerent? Those who know the laws of the mind can well understand that the appalling horrors of this world war will deeply impress the soul of everyone who lives through it and that their children and children’s children will still be haunted by the ghastly specters of the battlefield. There will be a fear of war and a craving for peace. But alas, the psychologist knows also the mental laws of adaptation and inhibition. Our modern mind was no longer adjusted to the sights and emotions of a real war. Now it has been broken down. The transition from peace into warfare has become easier for the mind (pp. 227-228).

Munsterberg longed for a time when America and the countries of Europe including Germany, England, and France would be partners and meet each other under a “radiant banner of peace” (p. 276). He did not live to see that day but rather, at the age of 53, died while lecturing (Spillmann & Spillmann, 1993).

Another prominent psychologist, James McKeen Cattell, was also a pacifist and spoke out against U.S. involvement in WWI (Gruber, 1972). Apparently, Cattell already was disliked by many of his
colleagues and described as “ungentlemanly, irretrievably nasty, and lacking in decency” (p. 300). When Cattell wrote letters to several members of Congress and argued against the draft of young men into the military, that was the last straw for Columbia University. In October, 1917, he was dismissed from his position for his outspoken comments that were deemed anti-American. In 1918, the FBI raided Cattell’s home as he continued to provide support to conscientious objectors and his son, Owen, was described as a draft-dodger (Sokal, 2011). It should be added, that Cattell challenged his dismissal from Columbia, won a large settlement, and as a staunch supporter of academic freedom, helped found the American Association of University Professors (Gruber 1972).

**World War II (WWII)**

WWI officially ended with the signing of the Treaty of Versailles. The Treaty was highly punitive against Germany and included large reparations payments, demilitarization, and loss of territory. Later, psychologists would cite the demoralizing nature of this treaty in setting the stage for WWII and argued for a different approach at the end of WWII (Allport, 1945; Murphy, 1943).

The Kellogg-Briand Pact, officially named the General Treaty for Renunciation of War as an Instrument of National Policy (1928), was signed initially by 15 nations, with another 47 nations as signatories in the following years. This treaty condemned the use of war and declared that member states would use peaceful means to resolve disputes and conflicts. However, many prominent scholars of the time believed that the treaty alone would not foster peace. Ivan Pavlov, Albert Einstein, Thomas Mann, Bertrand Russell, and others initiated a peace petition, which stated, “That the present armament policies do not furnish any safety to the peoples of the world and, in fact, lead all nations to economic disaster. That this policy makes a new war inevitable. That the declarations of peace in behalf of governments remain futile as long as these governments keep on delaying disarmament, which should be the logical sequel to renouncing war” (Einstein, 1969, p. 106).

Noted social psychologist William McDougall was equally concerned about armaments and was indeed prescient in his fear on the advent of the atomic age and the arms race, In 1931, McDougall wrote, “And if some physicist were to realize the brightest dream of this kind and teach us to unlock the energy within the atom, the whole race of man would live under the threat of sudden destruction, through the malevolence of some cynic, the inadvertence of some optimist, or the benevolence of some pessimist” (p. 44-45). Earlier McDougall (1927) had called for the development of an International Court of Justice and permanent international police force. He argued that such a court combined with a mechanism of enforcement would help prevent war and serve to build up a body of “accepted and effective International Law” (p. 139). Although the International Criminal Court at The Hague was established in 2002, there is no permanent peacekeeping force within the UN to date.

Partly in response to international conflicts, the Society for the Psychological Study of Social Issues (SPSSI, APA Division 9) was formed in 1936. The Society polled its membership in 1937 to determine the major issues of interest to its members—industrial conflict as well as war and peace topped the list (Kimmel, 1997). Since its founding, SPSSI has consistently worked on issues related to international conflict and peace psychology, inclusive of work with the United Nations (UN), particularly UNESCO.

In the summer of 1944, an informal group of psychologists, not wanting to repeat the mistakes of the past, put together a statement advocating for peace grounded in knowledge of human nature (Allport, 1945). As WWII raged, this statement, with support from SPSSI, was mailed to all members and associates of APA in 1944 (n=3803). The cover letter to the statement was
signed by prominent psychologists: G. W. Allport, R. S. Crutchfield, H. B. English, Edna Heidbreder, E. R. Hilgard, O. Klineberg, R. Likert, M. A. May, O. H. Mowrer, G. Murphy, C. C. Pratt, W. S. Taylor, and E. C. Tolman. With a remarkable return rate, 2038 American psychologists signed onto this statement entitled, Human Nature and the Peace: A Statement by Psychologists. The statement was subsequently sent to members of Congress, was reprinted in newspapers, and published in the SPSSI yearbook, Human Nature and Enduring Peace (Murphy, 1945). Ten principles were outlined and discussed (Allport, 1945) and can be summarized as follows:

1. War is not an inherent element of humanity and hence, is not inevitable. Aggression and ambition can be channeled through cooperation towards productive goals.
2. In efforts aimed at peace, the focus should be on children. Children can be raised in ways to reduce prejudice and imperialism and the older generation can be shaped towards what is in the best interests of future generations.
3. Prejudice and group hatreds are attitudes and therefore are learned and can be controlled through education and experience. Individuals can “learn that members of one racial, national, or cultural group are basically similar to those of other groups, and have similar problems, hopes, aspirations, and needs” (p. 377).
4. All members of the human family are equal and deserving of equal rights and security. The belief that some groups are superior to others is a threat to lasting peace.
5. Following war, former enemies as well as liberated peoples must have a voice in their own destiny. Subjugated individuals have no investment in peace.
6. Rules and status of defeated peoples must be clearly established and consistently administered—punishments for the guilty and compassionate friendliness for those supportive of democracy.
7. Defeated and liberated peoples must play a role in their own recovery, leading to self-reliance and self-respect. If all manner of war relief is simply given as charity, it will lead to a loss of self-respect and growing resentment.
8. Peace is grounded in understanding and meeting the needs and desires of everyday people.
9. Humans seek security in ever widening groups from families to nation-states. It is time for the development of regional or a world organization designed to foster peace and security.
10. Action and commitments must be undertaken to counter possible post-war apathy. Unless, action is taken to increase “unity among the people of the world” (p. 378), the world may find itself once again at war.

In 1943, Gardner Murphy had enjoined psychologists to become involved in drafting policy and engage in research aimed at making peace. He warned that “if the psychological errors of the peace treaty are as gross as those of the Versailles peace-makers” (p. 136), fascism will rise up again. It appears that Allport and colleagues took his challenge to heart. Interestingly, the treaties of WWII avoided many of the unwitting psychological pitfalls contained in the Treaty of Versailles.

Post WWII and the Threat of Nuclear War

Following WWII, psychologists endeavored to understand the factors that lead to war. (e.g., Cantril, 1950; Kisker, 1951; Murphy, 1945; Pear, 1950). The rationale was that if we can understand the causes of war, we can endeavor to address those factors with an eye towards building peace.

In 1951, Arthur Gladstone and Herbert Kelman published a letter in the American Psychologist to stimulate discussions of pacifism from a psychological perspective. Four main ideas were presented. First, they argued that aggression results from frustration. However, aggression met
with counter-violence does not result in a decrease in aggression but rather fuels greater frustration and an escalation of warfare. Hence, the U.S. must reexamine its policies in responding to violence. Second, Gladstone and Kelman posited that it is imperative that governments understand the phenomenological perspective of those with whom they are in conflict. How might the other party perceive a military action or national policy? For example, if one group decides to increase troops or weapons as a defensive strategy, the other group might perceive these actions as a preparation for an attack. Failure to take into account the perception of the other group may inadvertently elevate levels of conflict. Third, they argued that nonviolent intervention is required to bring about change and reduction of violence. The assumption is that nations or groups that engage in aggression are ill and thus, in need of therapeutic approaches or treatment. Fourth, Gladstone and Kelman warn of the “dangers of habituation” (p. 127). The widespread use of warfare, the continual exposure to bloodshed and hate, and adaptation to cultures of violence lead to the danger of habituation.

Gladstone and Kelman (1951) were not seeking to provide definitive answers but rather to stimulate dialogue. The following year, the Research Exchange for the Prevention of War was formed, in part, as a means to further these conversations. The Research Exchange published a regular bulletin, which was later transformed into *The Journal of Conflict Resolution* (Jacobs, 1989). Psychologists within APA also were discussing these issues and in 1958, the Board of Directors authorized a survey and a small working group, which published a report of the group entitled, *Roles for Psychologists in the “Maintenance of Peace”* (Russell, 1960). Russell articulated and evaluated current peace practices such as international cooperation, arms reduction, compromise, persuasion, and the use of deterrence as a means to maintain peace. The report also examined contributions made by psychologists to peace and put forth policy recommendations for APA. For example, the report suggested that APA develop a Congressional fellows program, which is still in existence today; made recommendations for actions to be taken by the Committee on International Relations in Psychology (CIRP); called for the development of a Committee on Psychology in National and International Affairs; and argued for greater communication between APA, other professional organizations, nongovernmental organizations, policy makers, and the federal government. Today, APA maintains three government relations offices as well as employs policy officers who work on government relations and inter-organizational affairs.

The end of WWII and its bloody carnage also marked the beginning of a new form of warfare—a less bloody Cold War. The rationale for the Cold War was to ensure “peace” simply through deterrence—an atomic war would result in mutually assured destruction. The Cold War continued for decades with hostile rhetoric and a build up of nuclear weapons. The threat of nuclear annihilation was, and perhaps still is, real. During the Cold War, the U.S. became involved in armed conflicts in Korea and Vietnam, which also were in response to the rise of communism. Of course, the wars in Korea and Vietnam were not the only armed conflicts during this time but were the most visible to the U.S. population and psychologists. It is during this era that the foundation of peace psychology as a distinct discipline began to solidify (Christie & Montiel, 2013; Christie, Tint, Wagner, & Winter, 2008).

In 1931, McDougall had raised his concerns if the power of the atom was unleashed. Following the 1945 bombings of Hiroshima and Nagasaki, psychologists actively responded to the use of atomic weapons. In 1946, the SPSSI Committee on International Peace published a report entitled, *Psychology and Atomic Energy*. Although no author is cited in publication, it is attributed to David Krech (MacNair, 2012). This report was read into the *Congressional Record* on June 12, 1946. *Psychology and Atomic Energy* argued that atomic energy is not just a military problem. Indeed, the
Atomic energy has become a psychological problem. Our warmest hopes and deepest fears have been caught up in it” (p. 358). The report highlighted the fear, confusion, helplessness, and secrecy surrounding the development and use of atomic weapons. Six points were highlighted in the report:

1. All nations must work to prevent war—once unleashed, there is no defense against atomic weapons.
2. It is imperative that actions be taken to foster international cooperation and friendships grounded in mutual understanding.
3. Responsibility for atomic energy should not be left to individual nations but all knowledge and control should be shared internationally.
4. As atomic weapons are only a source of false security, the manufacture of these bombs should be stopped immediately.
5. Within the U.S., control of atomic energy should be removed from the military and placed under civilian control.
6. The possible benefits of atomic energy aimed at human welfare should be explored.

The report concluded, “We must see the importance of our own psychology, our own ways of thinking; for preventing war and controlling the use of atomic energy. No cannon, no airplane, no atomic bomb can declare war. Only man can do that” (p. 359).

The threat of nuclear war, the ongoing Cold War, and the Korean and Vietnam conflicts spurred much dialogue and research within the growing field of peace psychology. In 1961, the *Journal of Social Issues* published a special issue edited by Russell (1961), titled, “Psychology and policy in a nuclear age.” Highly regarded psychologists addressed a range of important concerns. For example, Morton Deutsch (1961) argued that we must move from a balance of power grounded in terror to one based on cooperation, mutual welfare, and peaceful trust. He outlined the psychology behind his ideas and presented national policy suggestions. Ross Stagner (1961) challenged traditional notions of conflict with an analysis of issues such as internal drives, ethnocentrism, and most importantly the role of perception in conflict. Urie Bronfenbrenner (1961) wrote about the development of enemy mirror-images—the process by which each country comes to view the other as evil, mad, the aggressor, and untrustworthy.

Other publications followed such as Charles Osgood’s (1962) seminal book, *An Alternative To War Or Surrender*, which focused on a path to arms reduction as well as increased trust between world superpowers, a process he call “graduated and reciprocated initiatives in tension-reduction” (GRIT, p. 111). Etzioni (2008), who posited a similar theory, suggested that both Osgood and he had sent their work to President Kennedy and that the steps taken by Kennedy to unilaterally reduce tensions with the Soviet Union and Cuba mirror their theories. Other seminal books written at that time include *Psychological Dimension of Foreign Policy* (de Rivera, 1968), *The Resolution of Conflict: Constructive and Destructive Processes* (Deutsch, 1973), *Sanity and Survival in the Nuclear Age* (Frank, 1967), *International Behavior: A Social-Psychological Analysis* (Kelman, 1965), and *Nobody Wanted War: Misperception in Vietnam and Other Wars* (White, 1968).

The 1970s and 80s marked continued concern over the use of nuclear weapons, an evolution of the civil rights and women’s movements, and a broadening of the field of peace psychology. Psychologist Carolyn Payton was appointed by President Jimmy Carter to be the first woman and African American Director of the United States Peace Corps (Payton, 1988). Research burgeoning in the field of social psychology, such as Milgram’s (1974) research on obedience to authority, Zimbardo’s prison study (Haney, Banks, & Zimbardo, 1973), and Janus’ (1972) ideas regarding groupthink, was brought to bear in the analysis of international conflict. Peace studies and the field

Although viewed as not desirous of engagement in political issues, APA issued a policy resolution in 1982, which remains in effect today and states:

Nuclear arms
The American Psychological Association (1) calls upon the President of the United States to propose to the U.S.S.R. that together both countries negotiate an immediate halt to the nuclear arms race. Specifically, we call upon each country to adopt an immediate mutual freeze on all further testing, production, and deployment of all nuclear warheads, missiles, and delivery systems; and (2) calls upon the Administration and Congress to transfer the funds saved to civilian use. Concurrently, they should work jointly with labor, management, and local communities to develop plans to convert the nuclear arms industry to civilian production, thus protecting jobs and strengthening our national economy. We hereby call upon elected officials at local, state, and federal levels publicly to endorse this resolution. (APA Council Policy Manual, 2016, Chapter XII)

To further promote political action and activism, Psychologists for Social Responsibility (PsySR) was formed in 1982. Although the early focus revolved primarily around the threat of nuclear war, the organization remains active today and addresses a host of social justice concerns (MacNair, 2012).

As noted previously, the Peace Psychology division of APA was established in 1990. In 2003, the flagship journal of the Division, *Peace and Conflict: The Journal of Peace Psychology*, began a series devoted to recognition of the early pioneers of peace psychology. Issues contained articles about each psychologist and their work through the years and provided unique glimpses into the early world of peace psychology. A list of these issues is included in Appendix A.

Although, not peace psychologists per se, many luminaries within psychology took stands and wrote about efforts for peace and building peaceful communities. For example, B. F. Skinner’s (1948) utopian novel, *Walden Two*, described the development of a community grounded in behaviorist principles. Although written as a novel, the book described methods to create a community where individual’s needs are met and all live in peace. Arthur Gladstone was drawn to the writing of Skinner and went on to establish a number of communes and cooperative residences, such as the New Haven Connecticut group. Together with Kelman, Gladstone worked to establish Walden House, a student cooperative house (Rangil, 2012).

Carl Rogers was also interested in applying his psychological theories to building cross-cultural relations and peace. In 1987, the journal, *Counseling and Values*, compiled a special issue of Roger’s writings entitled, “Carl R. Rogers and the Person-Centered Approach to Peace” (Whiteley, 1987). The six articles included topics such as tension reduction, reflections on his work in South Africa and the Soviet Union, and his thoughts on the role of psychologists in contributing to world peace. Roger’s work toward peace culminated in the establishment, with colleague Gay Barfield nee Swenson, of the Carl Rogers Institute for Peace in La Jolla California (Cooper, O’Hara, Schmid, & Bohart, 2013). The Institute’s first international conference became known as the Rust Peace Workshop as it was held in Rust Austria. This workshop brought together scholars, diplomats, and leaders from over 17 countries and was supported by the UN University for Peace. In 1987, Rogers...
was nominated for the Nobel Peace Prize, which can only be awarded to living individuals. Sadly, the day following his death, the Rogers family was notified of the nomination.

**Transformations Within Peace Psychology**

International concerns remain at the forefront of peace psychology and psychologists have been involved in efforts to bring peace in regions such as the Middle East (Bar-Tal, Halperin, & Oren, N. 2010; Hertz-Lazarowitz, Zelniker, Stephan, & Stephan, 2004; Kelman, 2011); Northern Ireland (Hewstone, Cairns, Voci, Hamberger, & Niens, 2006); and Africa (Staub, 2008). Psychological analysis has been brought to bear on topics such as political oppression (Martín-Baró, 1994); genocide (Staub, 2011; Woolf & Hulsizer, 2004); terrorism (Moghaddam, 2005; Wagner, 2006), and nonviolent movements (Mayton, 2009). Ignacio Martín-Baró was a peace psychologist and a Jesuit priest who worked in El Salvador. He advocated for a psychology of liberation, which challenged power structures and oppression—an important topic during the era of Salvadorian violence and death squads (Lykes, 2001). Martín-Baró, five other Jesuit priests, and a housekeeper along with her daughter were assassinated at their University Jose Simeon Cafias campus residence on November 16, 1989 (Kelman, 1995). Martín-Baró was the first peace psychologist to be murdered for his work and political activism.

Johan Galtung (1969; 1996) further defined peace in terms of direct, structural, and cultural forms of violence and focused on both positive (enhancing social equality and opportunity) and negative (the absence of violence or destructive conflict) forms of peace. Galtung argued that it was not enough to address visible and dramatic forms of violence (e.g., battering, war); if we are to achieve lasting and positive peace, cultures must remove the underpinnings of structural violence such as institutionalized bias and marginalization of selective populations. He also argued that we need to challenge cultural ideologies that promote inequities and violence (e.g., Protestant work ethic; culturally-defined gender roles). Increasingly over the history of the field, peace psychologists have engaged in research, writing, practice, and activism addressing issues across the spectrum of direct, structural, and cultural forms of violence.

Today, peace psychologists work in a range of contexts concerning issues such as domestic violence, bullying, intergroup relations, hate groups, school shootings, workplace violence, torture, disaster relief, child soldiers, trafficking, mass violence (e.g., genocide and terrorism) and the list goes on. Equally important, peace psychologists engage in efforts to develop and evaluate programs aimed at the promotion of peace, effective conflict resolution, reconciliation, and reconstruction following conflict. Such programs have been implemented around the globe with such disparate populations as young school age children in the United States to survivors of the Rwandan genocide.

This brief history is, of course, incomplete and only provides a brief glimpse into the role psychologists have played in promoting peace over the past century. Moreover, this chapter focused primarily on the work of U.S. peace psychologists. Additional histories have been written in relation to peace psychology for such regions as Asia (Montiel, 2009) and South Africa (Louw & van Hoorn, 1997). Regardless, what is clear from the above history is that issues of both war and peace are intertwined through the history of psychology. Peace psychology research, practice, and theory bring with them the hope for building more effective and equitable communities devoted to the promotion of human welfare, social justice, and peace.
Vignettes

1. Recovery from Genocide: Ervin Staub and Radio La Benevolencija
In 1994, Rwanda sank into the one of the most virulent genocides of the 20th century. Over the course of 100 days, members of the Hutu population violently murdered 800,000 of their Tutsi neighbors using machetes and clubs. Although some moderate Hutus were also killed, the destruction was one of the clearest cases of genocide based on ethnicity of the past century. Rwanda became engulfed in hate, often spurred by radio messages fueling the genocide. Sadly, the world stood by and watched. Efforts to bring justice to Rwanda included Rwandan community courts—the Gacaca, which finished their work in 2012—and the International Criminal Tribunal for Rwanda. Yet, how can communities rebuild and foster reconciliation after such atrocity? How can Hutu and Tutsi once again become neighbors?

Ervin Staub is an internationally recognized scholar and practitioner in the field of peace psychology. Staub, a Holocaust survivor, stated, "It's only because of the help of others that I was able to survive. That experience inspired me to dedicate my life to figuring out how to get people to respond to those who need help" (Forgiving.org, para. 3). Staub is most noted for his work on examining the psychosocial roots of human destructiveness and the path to healing and reconciliation following mass violence for all—victims, bystanders, and perpetrators.

In 1999, Staub, Laurie Anne Pearlman, and colleagues began work in Rwanda to design programs to help facilitate post-genocide healing and reconciliation. Three key elements were noteworthy about their programs. First, the programs were culturally embedded. Staub and colleagues did not simply transplant Western ideas of trauma recovery and assume that these methods would automatically work in Rwanda. Second, the programs were grounded in research concerning the psychosocial roots and impact of genocide. Finally, program evaluation was a key component of each project. For example, an early project involved trauma groups. Staub, Pearlman, Gubin, and Hagengimana (2005) used three groups—a group where the facilitators were trained in a specific model inclusive of knowledge concerning the psychosocial roots of genocide, a traditional group, and a control group—and measured the effectiveness of the groups over time. The model-trained group experienced significantly greater trauma recovery than the other two groups.

Too often victims of violence as well as perpetrators come to the view the other as evil. Such dichotomizations only deepen hostilities and increase the risk for future violence. Staub (2006, 2008, 2011) had identified key areas of knowledge and understanding that individuals and communities need to promote positive reconstruction (e.g., the effects of trauma; underlying root causes of genocide; human needs) and demonstrated that such knowledge facilitated healing (Staub et al., 2005). What now was needed was a creative method to reach more individuals and communities across Rwanda. The largest and most interesting project involved a partnership with Radio La Benevolencija.

La Benevolencija is a non-governmental organization (NGO) located in The Netherlands. In 2004, Staub and colleagues partnered with La Benevolencija to develop a series of radio programs and dramas designed to assist with healing and the prevention of future violence. Radio is the primary media in Rwanda and was used during the genocide as a means of perpetration. Indeed, radio executives faced and were convicted of crimes of genocide by the Rwanda Tribunal. Now radio was used for healing and peace.

Two programs were created: one program was on ongoing drama called Musekeweya (New Dawn) and the other program was informational. As of 2010, approximately, 85% of Rwanda’s population listened weekly to Musekeweya. The soap opera was designed to help normalize survivor’s
emotions; humanize survivors, bystanders, and perpetrators; teach perpetrators to understand the harm caused and steps to restore justice; teach the psychosocial roots of genocide; and help move individuals towards forgiveness and reconciliation. Each week, Rwandans tuned into the program to follow the lives of individuals in two communities as they struggle to come to terms with the lingering effects of the genocide. Embedded in each program were lessons about issues such as the roots of genocide, trauma, healing, and conflict resolution. The weekly informational programs then discussed these concepts and issues. As one survivor commented, “Musekeweya helped me calm down. I used to think that we should react by hating the people who did the genocide, but after a year of listening to the show, I realize that if someone did a bad thing, the answer is not to react by doing more bad things. For this country to go forward we need to be honest and free in our spirits and minds” (May, 2010, p.61).

Evaluation of the program has consistently demonstrated its effectiveness (Kogen & Price, 2014; Paluck, 2009; Staub, 2006) and similar programs are now being broadcast in the Democratic Republic of Congo and Burundi. Most importantly, Radio La Benevolencia and Ervin Staub demonstrated the psychological knowledge paired with creative methods play a significant role in reconstruction, reconciliation, and peace following the horrors of mass violence, genocide, and war.

2. The 1961 APA Annual Convention
Following WWII, the United States and the Soviet Union entered into a Cold War, with U.S. fears of rising communism and the growing threat of nuclear annihilation. Beginning in 1957, the U.S. was flying U-2 spy planes over the Soviet Union for intelligence gathering purposes. This invasion of airspace was routinely denied until the U-2 incident of May 1, 1960, when one of the planes was shot down and the pilot captured. On April 17, 1961, the U.S. attempted a CIA orchestrated invasion of Cuba, which failed. The goal was to remove the increasingly communistic government of Fidel Castro. These events provide the backdrop to the 1961 APA convention.

In September, the APA annual convention was held at the Commodore Hotel in New York City. Noted psychologists gave talks aimed at addressing the issue of thermonuclear war (Harrison, 1961). Howard Gruber, in a symposium entitled, “The Psychopathology of Thermonuclear War” called the idea of mutually assured destruction “an international game of Blind Man’s Bluff, with two blind men” and stated “mutual deterrence is mutual madness” (p. 6). Charles Osgood presented on his GRIT model of international tensions reduction. Urie Bronfenbrenner argued for a halt to a-bomb testing and discussed the role of mirror images in what he called the “war elevator” (Psychologist asks U.S. to shun a-bomb tests and reassure neutrals, 1961, p. 4).

Ralph White also gave an address at the 1961 APA Convention entitled, “Mirror Images in the East-West Conflict,” in which he argued a position similar to Bronfenbrenner (Harrison, 1961). As such, he hypothesized that both Americans and Russians have come to view the other as “evil rulers; they tell lies” (p. 6). Moreover, White condemned the recent U.S. actions stating, “our halo was loused up in both the U-2 and Cuban incidents” (p. 6). Although White gave his address as an independent citizen, he served in the United States Information Agency (USIA) as Chief of the Soviet Bloc Division of the Office of Research and Analysis (Dodd asks ouster of U.S.I.A expert, 1961). In his research, White gathered materials and over 1400 quotes from U.S. and Soviet sources (MacNair, 2012) and was stunned by the parallels. He outlined five similarities (USIA, 2009):

First, and most fundamental: each side looks on the other as a dangerous aggressor and a breaker of the peace....
Corresponding to this, another basic belief of the people on each side is that their own country is wholly peaceful. A third similarity is the resemblance between the values invoked by us and the values invoked by the Russians. A fourth similarity is...a belief that the mass of the people in the enemy nation are ordinary peace-loving human beings like themselves and that the moral evil is concentrated in a handful of criminals at the top. A fifth mirror-image similarity is the belief on each side that since the enemy usually tells lies, he is not worth listening to. (p. vii).

White’s talk was not met with unanimous support. Senator Thomas Dodd from Connecticut called for a Congressional investigation of the USIA and called for White’s dismissal (Dodd asks outer of U.S.I.A. expert, 1961). The APA Board of Directors voted unanimously to support White and he was not fired. Nonetheless, White elected to leave government work in 1964 so that he would be able “to tell the whole truth” (Wessells, Roe, & McKay, 2004, p. 318).

At the convention, the APA Council of Representatives voted to reaffirm the work of the Committee on Psychology in National and International Affairs and encouraged, “the broadest participation by psychologists in discussion of matters of national urgency, while recognizing that public stands by the Association should represent the best traditions of science and social responsibility” (p. 771). Council authorized grants and a donation to support research on international affairs and United States National Commission to UNESCO, respectively (Carter, 1961). It was also noted that Charles Osgood, whose research focused on international conflict, had been elected to be the 1963 APA President.

Despite the concern of psychologists concerning the escalation of hostilities, the arms race, and the Cuban missile crisis of 1962, which almost resulted in nuclear war, it wasn’t until 1982 that APA Council finally passed a resolution against the build up of nuclear weapons (APA Council Policy Manual, 2016, Chapter XII).

3. Peace Psychology, APA, and Torture

On September 1, 2001, the United States experienced terrorist attacks, the depth of which the country had never experienced previously. The resultant “Global War on Terror” (GWOT), not only changed the international landscape but also the American Psychological Association (APA). Most notably, psychologists and APA became historically tied to the issue of torture in national security settings such as Guantanamo, Abu Ghraib, and various “black op” sites (i.e., secret detention centers around the globe). The 2015 Independent Review (Hoffman Report; Hoffman et al.;) made a case that APA colluded with and provided cover for the U.S. torture program against prisoners.

Early in the GWOT, much like other previous wars, psychologists rallied to assist with the war effort. Other psychologists spoke out against the war, including most peace psychologists. In 2003, Paul Kimmel, the Council Representative for Division 48 of APA (Society for the Study of Peace, Conflict, and Violence), and others from the Divisions for Social Justice (DSJ) recommended an APA task force to examine the issue of terrorism. In 2003, Council (the Council of Representatives is the elected governing body for APA) voted to approve and fund a Task Force on the Psychological Effects of Efforts to Prevent Terrorism. The final task force report was completed in 2004 and placed on the February 2005 Council agenda for discussion and adoption as policy. Council never discussed the report, only voted to “receive” the final report, and disbanded the task force. Sadly, the report was functionally shelved and only saw the light of day when the task force members
expanded their work and published a book entitled, Collateral Damage (Kimmel & Stout, 2006). So why was this report moved off the agenda?

Prior to the February 2005 Council meeting in late 2004, reports began to appear in newspapers, magazines, and journals concerning the use of torture and other cruel, inhuman, or degrading treatment or punishment (CIDTP) against national security prisoners. For psychologists, the alarm bells rang as these articles highlighted not only torture and abuse but also psychologists’ involvement in these destructive practices (e.g., solitary confinement, extreme temperatures, forced stress positions, excessive sensory stimulation or deprivation, humiliation, sexual taunting/abuse, rectal feedings, and water boarding [simulated drowning]).

Due to the pressing need for action following these news reports, Council, at the February meeting, voted to approve the creation of the Presidential Task Force on Psychological Ethics and National Security (PENS). The PENS Report was issued the following summer, implemented as APA policy by an emergency vote of the Board of Directors bypassing normal review procedures, and immediately faced extensive criticism. The three primary criticisms were the concern that PENS did not go far enough in condemning torture and CIDTP, lack of review prior to adoption as APA policy and the Report’s statement, “The Task Force notes that psychologists sometimes encounter conflicts between ethics and law. When such conflicts arise, psychologists make known their commitment to the APA Ethics Code and attempt to resolve the conflict in a responsible manner. If the conflict cannot be resolved in this manner, psychologists may adhere to the requirements of the law” (Report of the American Psychological Association, 2005, p. 5). This statement was termed the “Nuremberg Clause” by critics, referencing the Nuremberg trials following WWII and Nazi Officer’s defense of “I was just following orders.”

In 2005, Division 48’s Executive Committee issued a “Statement Concerning the Use of Torture with Prisoners” denouncing the use of coercive interrogations/torture. The Executive Committee went on to further affirm the United Nations (UN) Conventions and articles prohibiting torture and other CIDTP. The Executive Committee also called on the leadership of the APA for additional action.

In 2006, Division 48 submitted a new proposed Resolution to Council and it went through the review process. That summer at the convention, APA’s Council of Representatives voted to approve the 2006 Resolution Against Torture and Other Cruel, Inhuman, or Degrading Treatment or Punishment (CIDTP), originally drafted by Linda Woolf, Corann Okorodudu, and Judith Van Hoorn. The 2006 Resolution affirmed APA’s commitment to human rights protections; affirmed the centrality of UN and other human rights documents in APA policy; reflected APA’s status as a UN NGO; unambiguously condemned the use of torture and other CIDTP; unambiguously prohibited psychologists’ involvement, either directly or indirectly, in torture and other CIDTP; and highlighted that these general principles apply to all psychologists, in all roles, and in all places, now and in the future, with absolutely no exceptions. The Resolution not only was designed to condemn torture and CIDTP in national security sites, but also prisons, hospitals, group homes, or any context in which torture could occur. The policy remains in effect today and can be found at http://www.apa.org/about/policy/torture.pdf.

In 2007, peace psychologists and others associated with the DSJ endeavored to put a policy in place that would ban psychologists working in national security settings and interrogations based on the conclusion that the conditions of confinement of sites such as Guantanamo were tantamount to torture. The United Nations had already made such a claim. Council voted to reject that resolution.

In 2008, the Petition Resolution, drafted by social activists and peace psychologists Dan Aalbers, Brad Olson, Ghislaine Boulanger, and Ruth Fallenbaum, was mailed to the APA membership and
passed. This Resolution states, “Be it resolved that psychologists may not work in settings where persons are held outside of, or in violation of, either International Law (e.g., the UN Convention Against Torture and the Geneva Conventions) or the US Constitution (where appropriate), unless they are working directly for the persons being detained or for an independent third party working to protect human rights” (para. 11). The full body of the text can be found at http://www.apa.org/news/press/statements/work-settings.aspx. In light of the 2015 Hoffman Report, APA Council voted to enforce the Petition Resolution and called upon the U.S. government to remove psychologists from national security sites such as Guantanamo.

In 2010, APA made a large step forward when it passed a revision to the Ethics Code. As noted in an APA press release, this change, “adds language reiterating that ‘under no circumstances’ may standards be used to justify violating human rights” (APA, 2010, para.1). Peace psychologist Judy Van Hoorn worked tirelessly during her term on Council representing Division 48 to ensure passage of this change to the Ethics Code.

In 2013, three peace psychologists, Kathleen Dockett, Julie Levitt, and Linda Woolf, along with an industrial-organizational psychologist representing the Military Division (Division 19), and Laura Brown, a community psychology member, formed the APA Member-Initiated Task Force (chaired by Woolf) to consolidate APA’s anti-torture policies. The goal was to move the Petition Resolution to the forefront of APA policy, affirm the inviolate nature of human rights, and to make clear that there are no exceptional circumstances, including war, that can be used to justify torture or CIDTP. In August 2013, Council voted to pass this policy, and its accompanying Report, almost unanimously. The policy can be found at http://apa.org/about/policy/national-security.aspx. This same group of individuals also put forth a resolution to rescind PENS and as of August 2013, PENS was no longer APA policy.

As noted above, in 2015, APA passed Resolution 23b. This resolution strengthened wording of previous anti-torture resolution but most importantly stated, “The APA membership has voted to prohibit all psychologists from working at Guantanamo Bay, from the CIA black sites, and any other setting that the UN has declared to be in violation of international law, excepting those psychologists who are performing no task other than offering treatment to fellow soldiers” (Council of Representative, 2015, para. 19). The document listed Scott Churchill as the primary mover, with co-authors Jean Maria Arrigo, and Frank Farley. It also notes contributions from Steven Reisner, Dan Aalbers, Linda Woolf, Judith Van Hoorn, and Kathleen Dockett. Jean Maria Arrigo was the 2014-2016 Council Representative for Division 48 and Frank Farley was the 2016 Division 48 President.

The path of human rights has been difficult since 9/11 within APA. Nonetheless, many psychologists both within and outside of peace psychology have endeavored tirelessly to insure that APA now and into the future stands for the protection of human welfare, social justice, and human rights.

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**Resources**

May, M. (2010) provides a student accessible description of the program, which is available at [https://meredithamay.files.wordpress.com/2015/03/2010sp_whatworks_airbornepeace.pdf](https://meredithamay.files.wordpress.com/2015/03/2010sp_whatworks_airbornepeace.pdf)

YouTube videos about the program are available at:
*Musekeweya*, a gateway to heal: [https://www.youtube.com/watch?v=0J6G8TgGAc8](https://www.youtube.com/watch?v=0J6G8TgGAc8)
*Musekeweya (New Dawn)*: [https://www.youtube.com/watch?v=RiPnE-hllcU](https://www.youtube.com/watch?v=RiPnE-hllcU)

**Appendix A**

**Pioneers in Peace Psychology Series**


When I first taught introductory psychology in the 1960s, I used one of the popular texts of the era (Morgan & King, 1966), and I have occasionally returned to that book, using it as a gauge against which to compare the psychology we teach today. Contemporary textbooks have much in common with that 1966 edition, but of course there are also some dramatic differences—perhaps none more compelling than the changes in the treatment of culture. The Morgan and King book had a brief section on culture, explaining that cultures differ in norms and values, in available resources, and social structures. It also discussed the possible role of culture in understanding of rural-urban and Black-White intelligence differences. By way of contrast, one recent introductory text (Myers & DeWall, 2015) contains extensive culture-related material, including discussion of such topics as individualism-collectivism; cultural similarities and differences; variations within cultures; the relation between culture and self-construal; and the influence of culture on such phenomena as gender roles, child-rearing, and group norms.

Clearly, a half century of cultural research and experience has changed the teaching of psychology, even at the introductory level. But cultural and cross-cultural psychology have a history extending much further than 50 years into the past. Some awareness of that history can inform and improve our teaching, not just in cross-cultural psychology, but more broadly across the entire psychology curriculum and beyond (Keith, 2012). In this chapter I will briefly describe some of the early developments that gave rise to cross-cultural psychology and some more recent forces that have shaped its evolution.

Historical Roots

People have long recognized and written about cultural similarities and differences. For example, writing in ancient Attica more than 2,000 years ago, Dicaearchus called the people of a rival clan “a nest of hucksters,” and described them as “coarse and truculent in their manners” (Durant, 1939, p. 108). From similarly early times, Japan was home to numerous clan rivalries, and throughout a long history Japanese culture has been influenced by its relationships with China and Korea—relations that were sometimes benign and sometimes violent (Roberts, 1993).

Culture has evolved not only as groups have lived in harmony with, or in reaction to, other groups or clans, but has also been a product of geography and climate. Thus, the ways that people form groups and adapt to their environment may be influenced by available daylight (in northern climes), the need for shade and shelter from the sun (near the equator), or the availability of arable land (Matsumoto & Juang, 2013). Interest in the relative roles of culture and biological heritage also has a long history. For example, in the seventh century B.C.E., Egyptian Pharaoh Psamtik I, in one of the earliest recorded psychological experiments, attempted to demonstrate that children had an inborn ability to speak Egyptian; taking two babies from their mother, he arranged to have them receive basic care, but no exposure to spoken language. The children eventually learned to speak, but they did not speak Egyptian. Psamtik’s experiment, cruel as it might seem, disproved his hypothesis about the innate nature of Egyptian language (Hunt, 1994).

If we fast-forward to more recent times, a number of important developments illustrate the significance of culture to our understanding of human behavior. Key among these developments were the German idea of Völkerpsychologie, dating from the mid-nineteenth century; the role of
W. H. R. Rivers in the Cambridge expedition around the turn of the twentieth century; and W. G. Sumner’s early twentieth-century Folkways.

Völkerpsychologie
According to the German Jewish philosopher Moritz Lazarus, writing in 1851, Völkerpsychologie is the science of the “national spirit of a people or collective mind” (Araujo, 2013, p. 1334). Translations of the term Völkerpsychologie have given it various meanings, including folk psychology, social psychology, ethnic psychology, and cultural psychology (Benjamin, 2007); in any case, it represented an approach that pre-dated the field we now know as cultural or cross-cultural psychology. Lazarus believed Völkerpsychologie should encompass common cultural property—including the habits, customs, language, religion, and art—of a group, and by 1860 he and his colleague Heymann Steinthal had established a journal to report work in the field. However, despite the importance of the efforts of Lazarus and Steinthal to develop Völkerpsychologie, the name we most often associate with it today is that of Wilhelm Wundt.

Wundt criticized the earlier work of Lazarus and Steinthal, in part because he believed they had not sufficiently differentiated the field (which he considered a branch of general psychology) from anthropology, history, and ethnology (Araujo, 2013). Völkerpsychologie was, Wundt believed, complementary to experimental psychology in its ability to develop knowledge of processes not subject to experimentation, and in 1900 he began publishing the material that would become his ten-volume work on the subject—a work that would not be complete until 1920.

Wundt sought universal psychological laws—a precursor to the notion of general psychological traits and processes (“etics”) of contemporary cross-cultural psychology, but less consistent with modern cultural psychology, with its focus on understanding characteristics of a particular culture (Araujo, 2013). Although others later adapted and applied it to serve political ends (Guski-Leinwand, 2009), Wundt’s Völkerpsychologie, while often overlooked, was an important early contribution that sought to address the general issues confronting modern psychologists interested in culture (Heine, 2012).

The Cambridge Expedition
Late in 1897, W. H. R. Rivers received an appointment as lecturer in physiological and experimental psychology at Cambridge University. In the spring of the following year, Rivers and several colleagues set off on an expedition to the Torres Strait, which lies between Australia and New Guinea. Rivers intended to study sensory characteristics of Torres Strait islanders and to compare them to Europeans (Whittle, 1997). His work with the islanders, and a few years later with Todas in rural India (Rivers, 1905), made Rivers one of the first cross-cultural experimental psychologists (Deregowski, 1998).

Among Rivers’s surprising findings was the discovery that Murray Islanders (in the Torres Strait) were less susceptible to the Müller-Lyer illusion than were people in England. These results, and subsequent cross-cultural replications (e.g., Dawson, Young, & Choi, 1973; Pedersen & Wheeler, 1983; Segall, Campbell, & Herskovits, 1966), led Segall et al. (1966) to formulate the “carpentered-world” hypothesis. The carpentered-world hypothesis proposes that people reared in cultures characterized by rectangular buildings, squared city blocks, and other angular environments learn to make perceptual judgments consistent with their environmental experience, including judgments about length and distance. Although researchers have debated the merits of the methodological approaches used to study the Müller-Lyer and other perceptual phenomena, the work of Rivers paved the way for an understanding of the cross-cultural effects of ecological factors in visual perception (Phillips, 2011).
Despite the pioneering nature of his work, W. H. R. Rivers does not appear today in introductory psychology textbooks. And, although E. G. Boring (1942), the great historian of psychology, described a dozen possible explanations for the Müller-Lyer illusion, he did not mention Rivers or the possibility that people of different cultures might perceive the illusion in different ways. Thus, although Rivers’s ground-breaking efforts receive recognition in modern cross-cultural sources (e.g., Matsumoto & Juang, 2013; Phillips, 2011; Price & Chapo, 2002), the work of the Cambridge expedition, important as it was, seems largely lost to mainstream psychology.

**Folkways**

A third important historical milestone appeared in W. G. Sumner’s (1906) book *Folkways: A study of the sociological importance of usages, manners, customs, mores, and morals*. Here, Sumner, a Yale polymath, introduced the term “ethnocentrism” to the lexicon of social science and repeatedly used the words “in-group” and “out-group” (Keith, 2013). Ethnocentrism derives from the idea that our judgments and feelings center (“centrism”) on our own cultural or ethnic (“ethno”) context (Brilin, 2000). There is thus a tendency to see one’s own group (in-group) as superior to others (out-groups), and, in Sumner’s view, to see the in-group as the standard against which to measure others. Although Sumner gave it a name, the tendency to elevate one’s own group over others was not new; for example, more than two millennia before Sumner, Herodutus disdained those who did not live in Greek city states (Klineberg, 1980), while Hecataeus of Miletus in turn thought the Greeks’ traditions were “ridiculous” (Durant, 1939, p. 140).

Subsequent research has shown that the potential for negative assessment of out-groups increases with larger differences between groups (Berry, Poortinga, Segall, & Dasen, 2002), and that people are likely to see their in-group as more virtuous than out-groups (Hammond & Axelrod, 2006). It is possible, however, that positive attitudes toward the in-group may be independent of views of out-groups (Brewer, 1999, 2007); in other words, good feelings about the in-group are not always accompanied by hostility or disdain for out-groups (Khan & Liu, 2008). Negative feelings toward out-groups seem to vary, depending on the specific out-group, suggesting that ethnocentrism is more complex than Sumner recognized in *Folkways*.

The universal nature of ethnocentrism across cultures has been the subject of discussion by many researchers (e.g., LeVine & Campbell, 1972; Neuliep, Hintz, & McCroskey, 2005; Shuya, 2007), and ethnocentrism occurs not only in relations between ethnic, cultural, and national groups, but also in shoppers’ preference for domestic products (Chryssochoidis, Krystallis, & Perreas, 2007; Hsu & Nien, 2008; Nguyen, Nguyen, & Barrett, 2008; Vida, 2008) and in attitudes toward people with disabilities (Chesler, 1965). It is perhaps not surprising that ethnocentrism is stronger in groups with well-defined views about themselves and others; thus, ethnocentrism is significantly correlated with religious fundamentalism (Altemeyer, 1996; 2003), with Hindu and Muslim beliefs (Hasnain, 2007), and with narcissism (Bizuic & Duckitt, 2008). Clearly, Sumner (1906) was onto something important when he recognized the tendency of many groups (e.g., Caribs, Greenlanders, Jews, Kiowa, and Sera, among others) to see themselves as superior, chosen, or uniquely human.

**Recent History**

The evolution of interest in culture and psychology has occurred in at least two important ways. There is, of course, a chronological history reflecting important dates and contributors, which I can only briefly summarize here. In addition, there is a conceptual history that has resulted in recognition of varied approaches to study of the relations between culture and behavior; that history, also, is too lengthy to receive adequate coverage in a brief chapter. Here, I will try to
suggest the flavor of these two ways of considering the development of contemporary views of 
culture and psychology.

Chronology

At Yale University in the 1930s, anthropologist George Peter Murdock began to assemble a large 
collection of ethnographic data from cultures around the world (White, 2013). His aim was to 
provide organized information about world cultures for the benefit of investigators who could not 
visit so many places, thus allowing them to understand a variety of cultures. The project eventually 
became a world-wide consortium of universities and libraries known as the Human Relations Area 
Files (Ember, 2013), and although this effort arose from anthropology, it was a precursor to the 
field of cross-cultural psychology, allowing researchers opportunity to study various aspects of 
hundreds of cultures.

International gatherings of psychologists, with a specific focus on culture and its role in the shaping 
of human behavior, began to occur in the 1950s, and the cultural interest grew significantly 
throughout the 1960s and into the 1970s and 1980s. Along the way, the International Journal of 
Psychology came into being in 1966, and in the same year the Journal of Social Psychology began 
publishing “Cross-Cultural Notes.” By 1969 psychologists at Western Washington State College had 
established the Center for Cross-Cultural Research, followed in 1970 by the Journal of Cross-
Cultural Psychology (Lonner, 2013a). Important publications in this era included The influence of 
culture on visual perception (Segall, Campbell, & Herskovits, 1966), “Cross-Cultural social and 
personality psychology” (Triandis, 1977), and the multi-volume Handbook of cross-cultural 
psychology (e.g., Triandis & Lambert, 1980). As the twentieth century came to a close, Segall, 
Lonner, and Berry (1998) drew mainstream attention to the significance of cross-cultural 
psychology as a scholarly discipline; and at the beginning of the twenty-first century, Adamopoulos 
and Lonner (2001) articulated the complex relation between culture and psychology.

As the field has matured, researchers have reflected on its history, both in particular cultural and 
national contexts (e.g., Bhatt, Tonks, & Berry, 2013; Padilla, 1999) and in terms of its subject matter 
and conceptual framework (e.g., Draguns, 2005; Jahoda, 2011; Lonner, 2005; Nisbett, 2007). The 
history includes diverse viewpoints that have given rise to distinct, yet overlapping, perspectives on 
the relation between culture and psychology.

Perspectives

Advances in travel and technology have made the world a metaphorically smaller place than it may 
have seemed in the days of Wundt, Rivers, and Sumner. The nations of the world can no longer be 
isolated—a fact that makes our cross-cultural differences and similarities more apparent than ever. 
At the same time, cultural and subcultural diversity has increased dramatically within many 
countries of the world. Nevertheless, much of our research has continued to be conducted by 
Western researchers, studying Western samples, and treating conclusions based on a small subset 
of the human population as if they were universally true (Arnett, 2008). As Guthrie (1998) argued 
about the larger history of psychology, Even the Rat was White; similar concerns exist in cultural 
psychology. Researchers concerned about the culture-limited nature of our understanding have 
taken different routes in their responses to the situation.

Cross-Cultural Psychology. Cross-cultural psychology is “the study of similarities and differences 
in individual psychological and social functioning in various cultures and ethnic groups” (Kagitçibaşi 
& Berry, 1989, p. 494). Researchers considering themselves cross-cultural psychologists set out 
originally in search of universal principles or truths that would apply across cultures (Sinha, 2002). 
Cross-cultural psychologists have thus often gathered data from multiple cultures, comparing and
contrasting findings, with an eye toward developing an understanding of effects that are universal and those that are culture-bound (Triandis, 2000).

Cross-cultural psychology has often involved the use of Western mainstream research methods to test Western theories in other cultures (Laungani, 2002; Yang, 2000). Unfortunately, this has sometimes resulted in use of research materials—apparatus, tests, or equipment—that are ecologically invalid or unfamiliar to members of some cultures, making cultural comparisons less than meaningful (Ratner & Hui, 2003). The tendency to treat culture as an independent variable (as opposed to identifying the specific aspects of culture that might influence dependent variables) is also a longstanding stumbling block (Lonner, 1974). Cross-cultural researchers are increasingly aware of the limitations of assumptions about cross-cultural universals. This awareness has spawned discussion of universality at different levels of abstraction and generalizability (Lonner, 1980, 2013b), and recognition of the need to expand understanding of behavior beyond the limited data base of Western psychology (Lonner, 2013b; Norenzayan & Heine, 2005). This data base, Henrich, Heine, and Norenzayan (2010) argued, is WEIRD (Western, educated, industrialized, rich, and democratic) and not representative of much of the world’s population.

Despite the challenges and limitations of cross-cultural psychology, research across cultures has some important advantages (Brislin, 2000): (1) Working across cultures may increase the range of variables available for study (e.g., more heterogeneous values of variables may be found in multiple cultures); (2) Research across cultures may be able to unconfound variables (e.g., such behavioral influences as diet and genetics may be inseparable in a single culture, but understandable across a range of cultures); and (3) Cross-cultural studies may increase sensitivity to context as an important behavioral variable (e.g., researchers working in a single cultural context may be unaware of the contextual variability existing across cultures).

*Cultural Psychology.* Cultural psychologists, as Valsiner (2013) noted, tend to distance themselves from cross-cultural psychologists, both in methodology (preferring qualitative methods to quantitative methods), and in focus—preferring to study the relation between person and context rather than comparing societies. Cultural psychologists are more likely to see culture as internal to the individual (Triandis, 2000) and to employ extensive observation in natural settings, leading to rich descriptions. In accepting that culture is internal to the individual, cultural psychologists point out that the same behavior may have quite different meanings for different individuals in different contexts (Heine, 2012). Thus, for cultural psychologists, the aim is not to find universals, but to focus on the relation between a culture and the psychological characteristics of people living in the culture (Shiraev & Levy, 2010).

Cultural psychology may bring together psychology and anthropology in a way that sees psychology in terms of culture-bound concepts (Yang, 2000)—a psychology more interested in culture than in personal traits as its basis (Ratner, 2006). As Segall et al. (1998) described it, cultural psychology views culture as basic to understanding all psychological processes; furthermore, it is interested in psychological principles derived from culture rather than imposed upon it, as sometimes reflected in mainstream psychology.

*Indigenous Psychology.* Indigenization is the process by which a particular culture develops its own variant of psychology, either totally from within or by combining local ideas with those developed elsewhere (Pickren & Rutherford, 2010). Although cultures have no doubt always had unique notions about behavior, since the 1980s a movement to develop indigenous psychologies has occurred in various places around the world (Allwood & Berry, 2006).
Indigenous psychologies have arisen, at least in part, as a reaction to the perceived irrelevance and incompatibility of dominant Western theories when applied to the behavior and needs of local cultural groups (Hwang, 2013). For example, in India such large-scale challenges as population control, health practices, poverty, the influence of westernization, and establishment of a national identity independent of that of imperial powers did not lend themselves to solution via standard Western psychological approaches (Pickren & Rutherford, 2010). Indian problems demanded Indian solutions—an indigenous Indian psychology (Sinha, 1986, 1994). Parallel indigenous movements have arisen in many other places, including the Philippines (Yacat, 2013); China, Korea, Mexico, and South Africa (Pickren & Rutherford, 2010); and the Arab world (Ibrahim, 2013), among others.

A particular concern of some indigenous psychologies has been the Western assumption of individualism. As Hwang (2012) suggested, the ideal of individualism may exaggerate some types of interpersonal relationships while neglecting others. Such a biased presumption of individualism may not be applicable in non-Western countries, necessitating new approaches to the solution of the problems of daily life in such cultures. An emphasis on specific cultures results in a focus on the unique aspects of particular groups, rather than a search for universal principles (Poortinga, 2005).

**Common Ground.** Cross-cultural, cultural, and indigenous psychology have all added in important ways to our understanding of the relation between culture and psychology (Ng & Liu, 2000; Yang, 2000). Cross-cultural psychologists have increased their sensitivity to the importance of culture-specific as well as universal phenomena (Triandis 1999), and all the perspectives have contributed to a broader recognition of the cultural influence in many facets of psychology (e.g., cognition, development, education, perception, social behavior).

Continued study of culture from different perspectives is likely to produce a more precise knowledge of the role of contextual variables as determinants of cultural and behavioral phenomena. As Matsumoto and Yoo (2006) suggested, the field has seen cross-cultural comparisons, identification of broad cultural dimensions, and examination of psychological constructs in different cultures; however, researchers must continue to move beyond stereotyped assumptions about cultural characteristics to empirical analysis of specific context variables (e.g., values, norms, attitudes, opinions). To that end, cross-cultural, cultural, and indigenous psychologies all have much to offer.

**Where is the Field Going and Why Should I Teach it?**

For too much of our history, the teaching of American psychology has been limited in scope, with its emphasis largely on white European Americans. Too often, Western psychologists have made assumptions about the universal validity of their findings (Arnett, 2009), with the result being that mainstream psychology has received criticism for its acultural, individualistic, mechanistic nature (Misra & Gergen, 1993). According to Albee (1988), even some of our most prominent early leaders—including such luminaries as Francis Galton, G. Stanley Hall, and Robert Yerkes—were prejudiced and ethnocentric.

Yet solutions to many of our most intractable problems, including intercultural conflict and war; inequitable resource distribution; environmental destruction and preservation; and health and nutrition, depend upon changes in behavior across cultures (e.g., Keith, 2011). Psychologists have long believed in the ability of the field to make meaningful contributions to such big-picture challenges (see, e.g., Allport et al., 1945), and more recently researchers across cultures have studied such issues as environmental values (Reser & Bentrupperbumer, 2005) and the psychological consequences of terrorism, disasters, and violence (Williams, 2007). Investigators
have also examined such aspects of intercultural conflict as the moral characteristics of Nazis, rescuers, and bystanders during the Holocaust (Monroe, 2008).

Clearly, the teaching of culture deserves a place in the psychology curriculum (Segall et al., 1998). Cross-cultural psychology is a vibrant field whose history continues to evolve (Lonner, 2000), and it promises exciting possibilities for the student considering a career in psychology. Numerous resources exist to aid the teaching of culture (see Keith, 2011), and we can hope that the vision of Segall et al. (1998) will be realized:

. . . [C]ross-cultural psychology will be shown to have succeeded when it disappears. For, when the whole field of psychology becomes truly international and genuinely intercultural—in other words, when it becomes truly a science of human behavior—cross-cultural psychology will have achieved its aims and become redundant (p. 1108).

Vignettes

1. Giving Away Psychology in the Internet Age: Online Readings in Psychology and Culture

The advent of the era of electronic communication has brought with it many changes in the availability and accessibility of information in myriad areas of interest. Consistent with this electronic information explosion is development of the Online Readings in Psychology and Culture (ORPC), a project of the International Association for Cross-Cultural Psychology (IACCP; Lonner, 2013a).

Established in 2002 at Western Washington University, the ORPC is an open-access collection of articles and essays on topics in cross-cultural psychology and related disciplines. The ORPC copyright passed to IACCP in 2008, making ORPC an official IACCP publication (A Brief History, 2011). The ORPC comprises 11 units (including one on the teaching of psychology and culture), each containing a number of articles dealing with the relation between culture and a particular set of broad psychological topics (e.g., historical perspectives, theory and methodology, indigenous psychology, intelligence). Individual articles address many specific facets of psychology and culture, including aspects of such central issues as personality, stereotyping, decision making, language, and development. The ORPC is intended for use not only by professors and researchers, but also by students, and is freely available at the following website:

http://scholarworks.gvsu.edu/orpc/

Authors of the many items published via the ORPC include a representation of some of the most important scholars in cultural and cross-cultural psychology, often writing on signature facets of their own work. Thus, the ORPC includes Geert Hofstede, writing on cultural dimensions; Shalom H. Schwartz on his theory of basic values; Richard Brislin on critical incidents and role playing; and Robert McCrea on cultural research and the Five-Factor personality model. The ORPC materials are a rich source of information that is useful in a variety of ways. For teachers of psychology, selected articles would be an excellent complement/supplement to textbooks in cultural or cross-cultural psychology courses. Some articles would provide especially useful introductions to cultural perspectives on key topics in other courses (e.g., personality, development, cognition, social psychology), and there are many potentially useful references for student research projects.

Search engines, social media, and digitized publications have all contributed to availability of a vast array of information potentially relevant to teachers of psychology and their students. However, students may experience difficulty in evaluating the integrity of sources and the veracity of the
information they obtain via such media. The ORPC provides a readily accessible source of peer-reviewed knowledge; this combination of open access and professional credibility makes it especially useful as a teaching resource. George Miller (1969, p. 1071) famously talked of “giving psychology away”—the ORPC uses modern technology to achieve Miller’s aim, both literally and figuratively.

2. Doctor Livingstone, I Presume?
David Livingstone was a 19th-century Scottish physician, missionary, and explorer who became famous in Great Britain as a result of his African exploits. It was after Livingstone had not been heard from for six years that the journalist Henry M. Stanley (1872) managed to find him in Africa, uttering the now-famous question: “Doctor Livingstone, I presume?” Although Livingstone seldom merits mention in psychology textbooks, even those dealing with the history of the field, an entry in his journal, dated January 19, 1854, presaged one of cross-cultural psychology’s fascinating findings in the area of visual perception.

In that 1854 entry, Livingstone (1857) reported showing Balonda tribal people some life-size pictures that he projected with a magic lantern (a simple, early projector). When viewing a picture of the biblical Abraham, about to stab Isaac with a large knife, some of the people were frightened, and tumbled over each other as they tried to escape. They had never before, of course, seen such pictures, and did not realize that the figures portrayed were not real. Although some cultures have depicted the real world in paintings and carvings for tens of thousands of years (e.g., Halverson, 1992), others have no experience with two-dimensional depictions of the three-dimensional world around them. Thus, while Livingstone’s magic lantern audience feared the apparent reality of life-size pictures, others, like older members the Rendille tribe of Kenya, never having seen photographs, did not recognize pictures of their own belongings (Eddy, 2001).

In a similar vein, Turnbull (1961) told the story of his Mbuti Pygmy friend Kenge, who lived in Africa’s Ituri forest. Before taking a trip with Turnbull into open savannah and grasslands, Kenge had never left the forest. Stopping atop a hill, Turnbull pointed out a distant herd of cape buffalo; but Kenge, never having seen large animals at such a distance, insisted that they must be some kind of insects. As researchers well know, a change in perspective can dramatically alter our perceptions of reality. And who was one of the first observers to note this fundamental fact? Why, Dr. Livingstone, I presume!

3. Study Questions for General Psychology: Integrating the Teaching of Culture
As Segall et al. (1998) proposed, all psychology should be intercultural in nature. To that end, I will suggest some questions that instructors might use to guide students toward an understanding of a psychology of all people. Any unit (or course) lends itself to examination in this way, and the questions I present here are simply examples. Each psychology teacher can no doubt generate many more ideas appropriate to any particular course, keeping in mind that the key word here is integration—not culture as a discrete unit, but as a part of the fabric of the course in as many units as possible.

Big Picture Questions
In any course, including general or introductory psychology, there are broad questions that should always raise our consciousness of cultural connections. Among such questions are these:
--Is what we know about behavior true for all people, across gender, race, ethnicity, culture, class, and lifestyle (Matsumoto & Juang, 2013)?
--What is the nature of the interplay between underlying biological heritage and the role of culture
as a shaper of behavior (e.g., Myers & DeWall, 2015)?
--What does it mean to say a phenomenon is universal? Are there any real universals?

Topical Questions
To provide a brief sample of the possibilities for integration across the general psychology course (or curriculum), I suggest here some examples of study questions for research methods; developmental psychology; learning, memory, and cognition; gender and sex roles; health, disorders, and treatment; emotion; language and communication; personality; and social psychology.

Research Methods
--Do researchers have a cultural bias?
--Who are the research participants?
--Are research instruments linguistically equivalent? How would we know?
--Might people of different cultures respond differently to research instruments?

Developmental
--Do classic processes (e.g., temperament, attachment, parenting) play out in the same way across cultures?
--Are the classical theories (e.g., Piaget, Kohlberg, Erickson) robust across cultures?

Learning, Memory, & Cognition
--Do we all perceive the world in similar ways (e.g., W. H. R Rivers, carpentered world theory, front-horizontal foreshortening, three dimensions in two)?
--Do we categorize the world in the same way (e.g., sorting objects by color vs. function)?
--Do we memorize in the same ways (e.g., cultural differences in serial position effect)?
--Do all cultures define intelligence in similar ways?
--Why do cultures differ in mathematics ability?

Sex and Gender
--Are there universal behavioral and psychological differences between men and women?
--What aspects of gender roles are culture-limited (e.g., rights, pay, role of work)?
--How do relationships between women and men vary across cultures?

Health, Disorders, and Treatment
--Does the American biomedical approach to health reflect cultural bias? Are there other ways to define health?
--What are some key cultural determinants of health (e.g., economics, diet, individualism-collectivism, marriage, role of community)?
--Is abnormality the same across cultures?
--Are there any universal disorders?
--How do different cultures view treatment?

Emotion
--Is emotion biological or cultural (see, e.g., Darwin, 1998/1872)?
--Are there universal emotions?
--Do people around the world express emotion in the same ways?
--How does culture influence how we show emotions?
Language and Communication
--Are there universal features of language?
--How does language differ across cultures?
--How does language reflect cultural rules or assumptions?
--How does language influence thought?
--What about nonverbal communication (e.g., gestures)?

Personality
--Do different cultures (e.g., Eastern and Western) see personality differently?
--Are there universal aspects of personality (e.g., the Five-Factor Model)?
--Are there indigenous (individual culture-specific) aspects of personality?
--How does personality differ from culture to culture?

Social Psychology
--Do people of different cultures make attributions in the same ways?
--Do people obey, conform, and cooperate in the same ways around the world?
--Do people view themselves in the same ways across cultures?
--How do people develop cultural identity? Can they have multiple identities?
--Is attractiveness the same the world over? How about marriage?

Tying it Together
Three decades ago, Cole (1984) lamented that culture in psychology was often treated as a “miscreant stepchild,” and Cushner (1987) called cross-cultural psychology the missing link in the teaching of psychology. Soon thereafter, Albert (1988) also noted the neglect of culture, and Romero (1988) argued for the teaching of ethnic aspects of psychology. Hill (2002), like Segall et al. (1998) before him, highlighted the importance of an integrated approach to the teaching of psychology.

Although the questions I have presented here are in no way a solution to the challenge of teaching an integrated, inclusive psychology, they may help to point students in the right direction. And they can be useful in raising awareness and sensitivity to the role of culture in a world made increasingly smaller by modern transport and technology.

References


Growing up Male or Female: Selected Historical Influences on the Psychology of Gender and Gender Development

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Gender shapes the way we experience our lives in multiple ways. It is one of the fundamental categories that we use to frame our understanding of who we are and of our place in society. The first question people typically ask a pregnant woman is “are you having a boy or a girl?” Once the child is born, parents tend to reinforce boys and girls in ways that are consistent with certain gendered norms. They observe, react to, and question the origins of their child’s behaviors, just as children create mental models of their parents’ and their peers’ behaviors (Leaper, 2015). The child’s categorization as a girl or boy determines the child’s name, hairstyle, clothing, toys, and peers. Because of gendered social, cognitive, cultural, historical, economic, and political environments, our perceptions and experiences remain distinctive. This chapter provides a brief overview of a few historical milestones in the psychology of gender including the subfield of gender development, highlighting selected internal and external historical influences on the field since the 19th century, and how technological innovations, cultural changes, and individual scholars have influenced this subfield. This chapter is not meant to be an exhaustive historical description, but rather an attempt at providing the reader with a broad overview of some seminal works, experiments, world events, and/or individuals who have changed the subfield(s) of gender and gender development.

The Beginnings

In the United States, before the 19th century, patriarchy was maintained by colonists who tried to impose their masculine authority over women to establish a form of agrarian patriarchy in the American South. In New England, men’s control over women was slowly eroding and “their identities as the moral leaders of their communities were weakening” (Hoffert, 2003, p. 25-26). In the early 19th century (1820-1860), the cult of true womanhood reigned. “The attributes of True Womanhood, by which a woman judged herself and was judged by her husband, her neighbors, and society could be divided into four cardinal virtues – piety, purity, submissiveness, and domesticity” (Welter, 1978, p. 313). The cult of true womanhood, with its veneration of sexual purity, married domesticity, moral superiority, and submissiveness, provided American women with guidelines around which to construct feminine identities in the 19th century and (Hoffert, 2003) still influences current views of femininity (Brannon, 2004).

The founder of the scientific study of children’s development is usually said to be G. Stanley Hall (Strickland & Burgess, 1965). In some of his writings Hall dealt with differences in the behavior and development of boys and girls (Minton, 2000). The branch of psychology that gave rise to the study of gender and sex issues (e.g., *Psychology of Women, Feminist Psychology, Psychology of Gender*) emerged during the second wave of feminism, focused on the women’s suffrage movement.

Feminist Movements

Over the past two centuries, many women have fought for equal rights for men and women (i.e., feminism). Most historians agree that the history of feminism includes three chronological waves (Krolokke & Sorensen, 2006): (1) Early feminism, or the first wave took place in the 19th and 20th centuries and focused mainly on overturning legal inequalities such as the lack of women’s voting rights; (2) the second-wave feminism (1960s-1990s) also included fights about cultural inequalities, such as the role of women in society and gender norms; (3) and the third-wave feminism (1990s-present) refers to the continuation of the second wave as well as improvements on perceived past
failures (Krolokke & Scott Sorensen, 2006). This latest movement seeks to broaden the parameters of feminism by including groups of women who have previously been excluded as a result of race, class, and sexual orientation (for more information, please see Jacobs, 1998). Liberal feminists fought to end sex discrimination in the context of mainstream society. For example, Bella Abzug (1920-1998) fought for civil and gay rights as a congresswoman (Biography.com, 2014). On the other hand, radical feminists in the 1960s and 1970s were interested in the issue of female oppression as it cuts across the boundaries of culture, economic status, and race (Enns & Sinacore, 2005). Cultural feminists fought for social change, celebrating traditional characteristics of women and values (Enns & Sinacore, 2005). According to Zerbe-Enns (2010), locational feminism is associated with the complex interconnectedness of social identities with social statuses, integrating beliefs and values of women of color feminism.

Krolokke and Scott-Sorenson (2006) described third-wave feminists as “motivated by the need to develop a feminist theory and politics that honor contradictory experiences and deconstruct categorical thinking” (p. 16). The overarching stance of this latest wave is a focus on individualism as it relates to seeking equality, focusing more on the personal than political.

Men’s Movements
Men’s movements can be categorized largely into three types (Fox, 2004): (a) men’s rights, (b) mythopoetic perspectives, and (c) profeminist movements. Men’s rights activists tend to fight against, among other issues, the unfair legal decrees of alimony, child support, and domestic violence (Fox, 2004). The National Coalition for Men (NCFM) is an example of a men’s rights group. In response to the second-wave feminism, the Mythopoetic Men’s Movement suggested that modern society has feminized men. They focused on self-help approaches that emphasized male qualities. Profeminist men’s groups, on the other hand, tend to be supportive of equality between men and women (Fox, 2004).

In the twentieth century, World War I and II and the post-war era defined masculinity or manliness by encouraging men to be concerned about their “character.” Theoretically, they valued honor, loyalty, self-control, independence, a sense of duty, and integrity as masculine qualities (Hoffert, 2003). In the mid-seventies, the “self-made man” was starting to be re-evaluated. Men’s competitiveness, aggression, impatience, and ambition to achieve economic success caused many to have heart attacks and other stress responses (Hoffert, 2003). Increasingly, men found that they had to choose a vocation, earn approval from their peers, win the love of a woman, support their families, and fulfill their civic duties without the benefit of clear guidelines. By 1975, the power of the white, heterosexual man was being challenged by both women and men who considered themselves minorities (e.g., gay men). By the 1980s the ideas about manliness were shifting and could now be expressed in a wide variety of ways. American men could adopt a definition of masculinity that best suited them as individuals (Hoffert, 2003).

Before 1950s
Before the 1950s, starting in the mid-1800s, during the first wave of feminism, little psychological research was done on gender or to explain gender differences with a few exceptions. Early in the 20th century, Helen Thompson Woolley published one of the first well-controlled scientific studies of behavioral differences between men and women (Rosenberg, 1982). She later published two review articles summarizing research on the topic of sex differences (Woolley, 1910; 1914). During the same time, Leta Stetter Hollingworth published three review articles on sex differences in Psychological Bulletin (Hollingworth, 1916; 1918; 1919). Together with Mary Whiton Calkins, who found that women were not inferior in their mental capacity (Lewin & Wild, 1991), these early
women in the history of psychology investigated topics that acknowledged the importance of sex differences and/or females’ perspectives. Their views challenged the general belief in male superiority.

The majority of the research that was conducted generally examined if and how men were intellectually superior to women (e.g., Ellis, 1894). Researchers looked at brain size (frontal and parietal lobes) and determined that the larger male brain size was a sign of superiority. However, this theory ended with Terman and Miles’ (1936) Sex and Personality article that demonstrated that there were no sex differences in intellect. That said, there are still those outside of the scientific community who argue that brain size is relevant and the smaller size of women’s brains translates into a weaker intellect. During 1936-1954, researchers started to examine gender roles, personality, and the constructs of masculinity and femininity. Several scales that attempted to measure masculinity and femininity, vocational interests and personality were designed. For example, Terman and Miles constructed the 456-item Attitude Interest Analysis Survey and Strong created the Strong Vocational Interest Bank (Strong, 1936). This was also the time when Hathaway and McKinley (1940) devised the Minnesota Multiphasic Personality Inventory (MMPI). However, no women and only a few gay men were involved in the conceptualization of the latter test. Overall, these inventories assumed male and female attributes were opposites. Only items that elicited different responses from girls and boys were included in the final versions of these inventories.

1950s – 1980s
From the mid-1950s to early 1980s, when feminism moved into the second wave, gender researchers were mainly interested in issues of sex typing (i.e., the mapping of objects, activities, traits, and roles onto biological sex such that they follow prescriptive cultural stereotyping of gender) and androgyny (i.e., the combination of masculine and feminine characteristics of one person). For example, researchers suggested that men tended to demonstrate instrumental or goal-oriented (agentic) behaviors whereas women tended to demonstrate expressive or emotional (communal) behaviors (Eagly & Carly, 2007). In the 1970s, Sandra Bem (1974) developed the 60-item Bem Sex Role Inventory (BSRI). Men and women were asked to identify how desirable it was for men and women to have masculine, feminine, or neutral traits. She coined a new term “androgyny”, the idea that healthy women and men could possess both feminine and masculine characteristics. This new framework allowed researchers to interpret similarities and differences among individuals according to the degree to which they described themselves in terms of masculine and feminine characteristics. The unique feature of this idea was that masculinity and femininity were not bipolar ends of a single continuum, but two independent measures. The inventory continues to be used as a masculinity-femininity measure, despite many critics (e.g., Frable, 1989, Gilbert, 1985; Hoffman & Borders, 2001). During that time Money and Ehrhardt (1972) published the book Man and Woman, Boy and Girl, in which they advanced a provocative theory about gender identity that was based on the David Reimer case study (see an abbreviated video on the David Reimer Story by The Learning Channel, 2012). They argued that social factors were more important than biological factors in gender identity and gender roles.

A few individual researchers’ influential works dominated gender development research in those years. Eleanor Maccoby’s (1966) edited book, The Development of Sex Differences focused specifically on theories of gender development. According to Sigmund Freud, sex difference awareness and gender identity development occurred during psychosexual stages of development. Karen Horney, a vocal critique of Freud’s interpretation of gender development, asserted that “male narcissism” was the cause of female discontent with their biologically assigned sex (Garrison,
Jean Piaget’s (1966) and Lawrence Kohlberg (1966), in their theories of cognitive and moral development, proposed that children’s understanding of gender undergoes qualitative stages or changes during early childhood. Kohlberg asserted that women were more likely than men to get stuck at the 3rd level of moral reasoning, focusing on details rather than on abstract principles. Carol Gilligan (1977; 1982) later critiqued Kohlberg’s theory because he had not included girls in his research. She asserted that there are two modes of moral reasoning: justice and care. Kohlberg continued to consider men’s views of individual rights, justice, and rules as a higher stage than women’s views of development in terms of caring effects on human relationships. A more recent meta-analysis (Jaffee & Hyde, 2000) showed that there is no strong support for the gender difference in moral orientation.

In the mid-1970s, Maccoby and Jacklin (1974) published their seminal book Psychology of Sex Differences. Before their review was published, only a handful of theoretical approaches guided gender development research (Leaper, 2015). Their book challenged the idea that there were numerous gender differences but instead demonstrated that there were only a few well-established sex differences. In addition, they introduced the term “self-socialization” to describe the proactive role that children play in acquiring gender-stereotypes.

1980s - Present

From 1980 onward, gender started to be regarded as a social category. The prevalent view was that of social constructivism. Social constructivists view gender as a multifaceted construct that occurs in a social context. In other words, gender resides in our interactions with people. On the other hand, essentialists view gender as an inherent attribute of a person. Newer developmental theories, such as gender schema theory (Martin & Halverson, 1981) or Bandura’s (1997) reformulated social cognitive theory, postulate that attaining a concept of gender subsequently influences how children see the world and think about themselves. These constructivist views have received considerable attention in the past decades.

Increased attention was also given to individual differences and adjustment. According to a review of the gender development research in the past decades, research has mainly focused on gender differences, socialization, stereotyping, and gender identity (Zosuls, Miller, Ruble, Martin & Fabes, 2011). More recently, increased attention has been devoted to cross-cultural influences on gender, the influence of media, and individual differences and adjustment (Leaper, 2015).

Mass media and the general public have been captivated by findings of gender differences. Books that describe differences between the sexes have been bestsellers. For example, John Gray’s (1992) Men are from Mars, Women are from Venus or Deborah Tannen’s (1991) You just don’t understand: Women and men in conversation argued for the difference hypothesis, that men and women are psychologically vastly different. More recently, Hyde (2005) introduced the gender similarity hypothesis whereby women and men are similar on most, but not all psychological variables. Earlier, Maccoby and Jacklin (1974) had dismissed many popular beliefs about gender differences, but concluded that there were four established differences: verbal ability, visual-spatial ability, mathematical ability, and aggression. Hyde’s meta-analysis on major meta-analyses of psychological gender differences demonstrated that with the exception of some motor behaviors (e.g., throwing distance), some aspects of sexuality, which show large gender differences, and aggression which shows a moderate gender difference, women and men are more similar than different. However, other studies have suggested that, although men and women may behave mostly similarly, there are other significant gender differences that may have long-term effects on children’s later career choices. For example, gender differences in toy play, mathematics performance, or leisure activities (e.g., Blakemore, Berenbaum, & Liben, 2009; Ceci & Williams,
2010; 2011; Cherney, Brabec, & Runco, 2008; Cherney & London, 2006; Halpern, Benbow, Geary, Gur, Hyde, & Gernsbacher, 2007) have been shown to influence adult occupational choices (Cherney, 2008) and may influence the development of visual-spatial skills (e.g., mental rotation, way-finding) (e.g., Blakemore & Centers, 2005; Doyle, Voyer, & Cherney, 2011), which in turn have an effect on mathematical processing (e.g., Hegarty & Kozhevnikov, 1999).

One influential article that made a big contribution to gender research was that of Claude Steele and Joshua Aaronson (1995) on stereotype threat (ST). Their original study showed that when a researcher makes a well-known stereotype salient and that stereotype is relevant to the individual, before participants take a test, the participants who are exposed to the stereotype (experimental group) and identify with the domain of the stereotype, tend to score lower than those who are not exposed (control group). This phenomenon has also been shown to be true for some gender stereotypes. For example, a common stereotype regarding women is that they have poorer math skills compared to men. Several studies (e.g., Ben-Zeev, Fein, & Inzlicht, 2005; Brown & Josephs, 1999; Spencer, Steele, & Quinn, 1999) have shown that when men and women are made aware or are primed with that stereotype, women tend to underperform on math skills tests. ST has been viewed as one possible factor for why women may be underrepresented in the Science, Technology, Engineering, and Mathematics (STEM) fields (Ceci & Williams, 2010; Halpern et al., 2007). In January 2005, former Harvard president Larry Summers talked about possible causes of the underrepresentation of women in the STEM fields. He argued that biological sex differences rather than gender differences might be the cause of the imbalance. In particular, he argued that women with children may be unwilling or unable to work 80-hour weeks and that a larger number of boys earn the best scores on math and science tests. His thought-provoking speech stirred up a vivid debate on the possible causes of the female underrepresentation in the STEM fields, which in turn may have spurred the White House to address this issue. In a Whitehouse communiqué, President Obama (Obama, 2009) set a goal to move U.S. students from the middle to the top of the pack in math and science in the next decade. He proposed a multipronged approach through increased research funding, new initiatives, agencies fostering partnerships, providing better conditions for women in the workforce, encouraging compliance with legal protections, for example, Title IX, to name one of the initiatives. For example, the administration launched a $4.35 billion Race to the Top competition to encourage states to improve achievement in STEM fields and to broaden the participation of women, using competitive incentives for those who showed strategies to include more women and girls in STEM careers. In 2010 U.S. president Barak Obama launched the Educate to Innovate (The White House, 2010) campaign. The objective of this campaign was to expand STEM education and career opportunities for underrepresented groups, including women. Ceci and Williams (e.g., 2010, 2011) and Ceci, Williams, and Barnett (2009) studied the phenomenon and concluded that three factors may dominate those gender differences: (a) fertility/lifestyle choices which impact women in every field, (b) interest, with adolescent girls preferring careers focusing on people rather than things, and (c) math-ability differences which are influenced by both socialization and biology (Ceci & Williams, 2011).

The past decades have also shown an increased interest in gender identity and LGBT issues. Gender identity tends to develop between two and three years of age (Ruble & Martin, 1998). That is, the child is able to distinguish whether s/he is male or female. However, most children do not understand that gender is an unchangeable variable. Thus, once it is acquired, children actively seek to understand what it means to be a boy or a girl. According to Kohlberg’s (1966) theory, the second stage involves more complex cognitive abilities. Children reach gender constancy around 5 years of age, when they realize that sex is a permanent feature tied to biological factors. They recognize gender as a social category to classify the world around them, and they start to affiliate
more with same-gender peers (Maccoby, 1998). Preferences for gender-typed toys and play constitute one of the largest typical gender differences in behavior. For example, Cherney and London (2006) showed that gender accounted for 64% of the variance (d = 2.7) in toy preferences of children between 5 and 13 years.

The current Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2013) includes the diagnostic category of gender dysphoric disorder to classify individuals who experience distress with their biological sex or gender identity. Based on one estimate, about two thirds of children who were labeled with gender identity disorder (in a previous version of the DSM) later manifested gay or lesbian sexual orientations (Zucker & Bradley, 1995). A small number of those individuals have sought sexual reassignment surgery in adulthood. Others are embracing alternative gender identities known as transgender (Bockting, 2014).

Starting in the early 2000s, the U.S. media have increasingly featured LGBT causes. On June 26, 2015, the Supreme Court ruled that same-sex marriage is a right. This decision came after decades of activism and changes in public opinion that indicated that the majority of Americans approve of same-sex marriage.

Recently, the focus of gender research has been to examine gender relations across different cultural, institutional, and socioeconomic contexts. The race/ethnicity of individuals as well as their socioeconomic context can moderate how gender is experienced. Cultural traditions that are associated with a particular ethnic background may influence particular gender-related values. The intersection of race/ethnicity and sexual orientation may also contribute to gender differences (e.g., Leaper, 2015) and may lead to increased exposure to bullying, discrimination, or prejudice (Poteat & Anderson, 2012). Membership in multiple disadvantaged groups (e.g., both racial/ethnic and sexual minority) may lead youth to experience increased discrimination. Thoma and Huebner, (2013) showed that experiencing antigay or racist discrimination has an additive effect on personal adjustment. Several studies have also investigated various nation-level indicators of gender equality (e.g., gender similarities in employment, political office, income, and education) as possible moderators of gender outcomes (Else-Quest & Grabe, 2012). These studies suggest that a country’s relative degree of gender equality is negatively related to the likelihood and magnitude of some average gender differences in academic achievement and socio-emotional adjustment (Else-Quest & Grabe, 2012; Leaper, 2015; Wood & Eagly, 2012).

In the past decades, numerous technological advances have changed gender research. From basic science research defining the genetics of sex determination and analyzing how sex and gender interact; communication science rethinking language and visual representations; engineering and technological advances making gendered brain functions and structures visible; machine translation or nanotechnology-based screening for HPV virus; video games and their effects on the representation and processing of visual information; climate change and environmental chemicals analyzing gender and factors intersecting with gender; and nutrigenomics analyzing gendered factors in nutrition and health to advances in health and medicine revising health issues surrounding heart disease, osteoporosis research, or prevention of certain cancers, technological innovations have important consequences for gender. In basic research, for example, failing to use appropriate samples of male and female tissues and cells yields faulty results. In medicine, not recognizing osteoporosis as a male disease as well as a female disease delays diagnosis and treatment in men. Gendered innovations offer sophisticated methods of sex and gender analysis to scientists and engineers. Integrating these methods into basic and applied research produces excellence in science, engineering research, health, policy, and practice (European Commission, 2013).
In conclusion, this chapter provides a brief survey of a few historical milestones in the psychology of gender and gender development, highlighting selected internal and external historical influences on the field, and how technological innovations, cultural changes, and individual scholars have influenced this subfield. The three waves of feminism have set the path for equality of women. Men’s movements have been less organized and recognized for their efforts. Today, there is new emphasis to study gender similarities rather than gender differences and with new advanced technologies, individual differences, rather than gender differences may be studied. The historical context explains, in part, why and how the field has emerged and changed. Scientific study is not necessarily steady and progressive, but it waxes and wanes as a function of various factors such as ideology, cultural trends, technological advances, and historical events.

Vignette

The David Reimer Story: Born a boy, brought up a girl
In 1965, in Winnipeg, Canada, Janet Reimer gave birth to healthy twin boys. After a routine circumcision, one boy’s penis was burned off. As a result, Bruce Reimer was raised as a girl named Brenda. His mom was persuaded by Dr. John Money that if gender identity was nurtured, Bruce could be raised as a girl without any consequences. Thus, she believed him and made Brenda the fanciest dresses, gave her dolls, and had her hair grow long. She tried her best to make Brenda feel happy. However, this treatment went very wrong.

John Money, a respected psychologist at Johns Hopkins, treated Brenda and children who were born with genitals that were not fully male nor female (they were then called hermaphrodites; now they are called children who are intersex). Children are born intersex due to an imbalance of hormones in the womb. In the 1950s, Money studied children who were intersex who were born genetically one sex but raised as another, generally by mistake. The frequency of genital variations is 1 in 1500 to 2000 births in the United States (Blackless, Charuvastra, Derryck, Fausto-Sterling, Lauzanne & Lee, 2000). He found that if a genetic female with ambiguous genitals was raised as a boy, the child would readily grow up to believe that the assigned gender. Likewise, a boy with ambiguous genitalia could be raised successfully as a girl and would believe she was a girl.

Money’s team at Johns Hopkins developed a theory about all human development. The theory was that humans were all born with such an unformed sense of being male or female that up until two years of age, babies’ brains were malleable with regard to gender identity. There was a window of opportunity to change a baby’s gender identity, but only if one started doing so early enough and provided appropriate support. After two years, gender identity would be forever fixed. In other words, humans were neutral at birth, and one’s environment determines the gender. Money’s theory provided hope for parents with children who are intersex. He advised that physicians pick the sex that would be most suitable for the child. This meant that many intersex children had surgery on their genitals to match the “chosen” sex.

However, Bruce was not an intersex child, but a completely normal male. He underwent surgery at 22 months to remove his burned penis and “became a girl.” The plan was that Brenda was going to be raised as a girl, behave as a girl, and in puberty, would be given female hormones. Over the years, Brenda made her way through school. John Money had asked the Reimer family to report back news of how Brenda was doing. He was using some of the information to write a book about the “dramatic proof” of his theory about gender identity. However, the reality of the situation for Brenda and her family was very different. After the early years, Brenda’s mother began to describe her daughter’s struggles. In an on-camera interview, she described Brenda “as an unhappy girl, no matter what I was doing for her. She was very rebellious, very masculine, and she could not be
persuaded to do anything feminine. She had no friends growing up – everybody ridiculed her. She was very lonely” (PBS, 2001).

The local psychologist who was looking after Brenda wrote to John Money about the concerns she had about the well-being of Brenda. According to the psychologist, Brenda was showing clear signs of being deeply disturbed and unhappy. John Money, however, did not publish her report. When Brenda was thirteen, the Reimer family stopped seeing Money. From then on, nothing would be heard about Brenda for 15 years. During this time, most of the scientific community thought that this case was a dramatic success and that one could raise a genetically born male to be a girl.

However, in the 1980s and 90s, scientists were starting to note some differences in the brains of men and women. Researchers found that there were 4 clusters of sexually dimorphic nuclei (SDN) in human brains that differentiated male from female brains (PBS, 2001). Further research on individuals whose gender identity does not match the biological sex to which they were assigned at birth showed that nurture could not override nature. In particular, scientists looked at a brain of a man who was assigned female at birth and found that the SDN was the size of that of a woman’s. This difference seemed to be present at birth and would indicate that we are not born “neutral,” as Money suggested.

In 1995, a team of researchers found Brenda. She had been living anonymously in Winnipeg. She was now living as a man called David. David was married and lived with his wife and her three children. He had undergone surgery to get his penis reconstructed. He was shocked to hear that his case had been seen as a success story. He confided that when she was 14, her parents told her that she had been born a boy. Her whole life, she had felt so lonely and became a recluse. In an on-camera interview, David shared his frustration of growing up as a girl. “You don’t wake up one day and say that you are a boy or a girl. You know it! It is in you, it is genetic.” “I was never happy as Brenda. Never. I will slit my throat before I go back to that. I will never go back to that. Eventually you end up being who you are” (Cohen & Sweigert, 2001).

Tragically, in May 2004, David Reimer parked his car and died by suicide (Woo, 2004).

References


A Brief History of the Psychology of Prejudice

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The psychology of prejudice has a unique place in the history of psychology. Early psychologists supported and promoted prejudicial views, leading to some of the darkest events in the history of psychology. Then, the field emerged as some individuals challenged these dominant perspectives, opening the door to changes in scholarship, teaching perspectives, psychological worldviews, and the larger culture. Since the mid-twentieth century, psychological scholars and practitioners have involved themselves in a series of movements to challenge many forms of prejudice, including recognition and support for individuals who do not identify as heterosexual and for individuals who live outside two conventional categories of gender.

In this chapter, rather than attempt a comprehensive review of this long and multi-faceted history, we examine some key developments. We seek to provide rich and illustrative examples for instructors of psychology, and therefore we examine a few central people and events in detail. We open the chapter with the early history of psychology and then examine the process by which psychologists challenged these views, leading to the emergence of the psychological study of prejudice. We then consider some important events in this history, including the creation of an organization for women in psychology and the movements to recognize people of diverse sexual orientations and of diverse genders.

In the Beginning, It Was Dark

Early psychologists’ perspectives and activities surrounding prejudice form some of the darkest chapters in the history of psychology. How dark were these actions? For one comparison, the Hoffman Report (2016) revealed participation of psychologists in Enhanced Interrogation Techniques, many of which (e.g., waterboarding) had previously been considered torture (New York Times, 1902), and this is one of the very few revelations in the history of psychology that can compare to the negative consequences of the scientific and cultural activities of early psychologists who studied race (see Woody, 2016, in this volume).

The cultural racism of the late 1800s and early 1900s pervaded psychology. An impressive array of scholars in psychology, particularly those who studied intelligence testing, promoted explicitly and intensely racist perspectives. For them, prejudice was not a problem to be solved but a natural and positive state of affairs that merited support from psychological science. Not only was Francis Galton a pioneer of racism and eugenics (i.e., selective breeding of humans with positive traits to improve the species, see Pearson, 1930), but a number of other psychologists actively promoted similar views, including G. Stanley Hall, Charles Spearman, and Karl Pearson (see Gould, 1995a). Others who actively promoted racism were on the team that developed the Army intelligence tests during World War I. Intelligence testing did not start with biases about racism, however. Binet viewed outcomes on the early intelligence tests as indicative of a child’s performance on that day. He sought to use test scores to identify children who needed remedial work or additional
stimulation (i.e., children who would today be called gifted and talented), and he expected children’s test scores to change with more intervention (Gould, 1995). Nevertheless, with America’s involvement in WWI, other views permeated the intelligence testing literature as psychologists sought to use intelligence test data to evaluate permanent qualities of groups of people. These individuals included Robert M. Yerkes (APA President 1917), Louis Terman (APA President 1923), H. H. Goddard, David Wechsler, and Walter Bingham (who later developed the SAT), among many others (Gould, 1995a; Winston, 2003). These individuals earned extensive scientific recognition in their lifetimes (Cattell, 1903, Cattell & Cattell, 1933; Garrett, 1930), and their continued prominence in sources that rate the eminence of figures in the history of psychology reveals their substantial impacts on psychology (e.g., Zusne & Dailey, 1982, Haggbloom et al., 2002).

Although psychologists suggested a wide range of justifications for these prejudicial views, some common ground emerged. In general, these individuals believed that intelligence was entirely genetic and that races were distinct genetic groups rather than culturally and historically defined groups as we now recognize (Gould, 1995a, 1995b). From these assumptions, they typically argued that people with greater social successes were genetically superior people, and these views intertwined with their biases about race so that they endorsed racial segregation, limits on immigration, and other racial and gender restrictions prevalent in the United States in the early twentieth century (Gould, 1995a). These views persisted well beyond World War I. For example, in his classic Great Experiments in Psychology, Henry Garrett (1930) emphasized intelligence testing in general as he built his collection of great experiments. In particular, he mounted an intense defense of these prejudicial views and argued that the social privileges of White people resulted from their inherent superiority rather than segregation, differences in the quality of racially segregated schools, Jim Crow laws, or the hundreds of ways that people who were not legally White faced daily restrictions in their lives (Lowen, 2007; Wilkerson, 2010). Garrett also took his views into the public sphere. In the school segregation case, Davis v County School Board of Prince Edward County, Virginia (1952), Garrett testified in favor of racial segregation in schools (Clark, 1983; Winston, 1998). Similarly, as noted in Vignette 1, Garrett also reported Klineberg to the FBI for reasons that included challenging racial prejudice (Jackson, 2005). For another small illustration of the pervasiveness of these attitudes, Henry H. Goddard used racist humor in his personal letters to G. Stanley Hall (Goddard, 1901). Other examples of scientific racism abound (see Winston, 2003; Woody & Viney, in press).

For many reasons, including the ways that the history of the United States is typically taught in high schools, it is generally difficult for students to recognize the degree of prejudice that flowed through the United States, particularly during the times that James Loewen (2005, 2007) described as the “nadir” (i.e., low point) of race relations in the United States, approximately 1890 to World War II. For example, it was during the 1890s that Major League Baseball went from inclusion of players of all races to a policy of White players only (Loewen, 2007). It was also during this time that Sundown Towns, communities that excluded people who were not White by law after sunset, spread across the United States (Loewen, 2005). Other examples of intense biases abound from this time. Black and White federal employees worked together into the early 1900s, but Woodrow Wilson re-segregated the federal bureaucracy. Additionally, Wilson screened the first film shown at the White House, Birth of a Nation, a heinously racist examination of United States history and

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1 Interestingly, his former doctoral advisee, Mamie Clark, testified against ongoing racial segregation in schools in this case (Clark, 1983). The interactions of the older, European American former advisor and the younger, African American former advisee appear likely to have been difficult. It would be the last time they saw each other in their lives (Clark, 1983).
the Civil War in particular (Loewen, 2007). For a surprising cultural example, as unimaginable as it
may seem to today’s readers, even the Hardy Boys used racist language in 1927. When Frank Hardy
sought to describe a suspicious situation that had nothing to do with race, his slang phrase included
the casual use of a heinous term for African-Americans: “I have a sort of a hunch that there’s a
n________ in the woodpile” (Dixon, 1927, p. 77). In this cultural context, it is perhaps less surprising
that psychologists reinforced and promoted these common cultural beliefs.

Racism, sexism, and other prejudices run so deeply through the early history of psychology that any
counter-example raises important questions. Sadly, as discussed below there are few
counterpoints until World War II. There was one early paper that questioned the underlying racist
assumptions as well as the scholarly conclusions that psychologists drew from the research
program in intelligence. In 1916, Pedagogical Seminary, a journal run by G. Stanley Hall, published
a paper in which the author raised questions about racial identities (i.e., how well did cultural labels
of Black or White fit genetically diverse people?), inadequacies of the intelligence tests used at the
time, the impact of the stark cultural inequities in the United States, particularly throughout
education, and the racial and cultural biases of both testers and testees. Who took such a strong
and prescient stand in the face of omnipresent racism in psychology and the larger culture? This
question remains unanswered; the author chose anonymity (Anonymous, 1916). Additionally, the
G. Stanley Hall archives are incomplete. They do not include journal correspondence, and there are
few archival clues as to the author’s identity. This paper is sufficiently unique to inspire a team of
scholars to combine archival findings with stylometric analysis (i.e., computer-driven attempts to
identify authorship by writing style) to seek the identity of the author; investigations are ongoing
(Woody, Ware & Swaffer, 2016). Beyond this article, few if any individuals challenged the
prejudicial worldviews that ran through the early study of prejudice.

**Changing Views**

The mid-twentieth century brought important challenges to this strong body of explicitly racist
scholarship and the emergence of the formal psychology of prejudice. Some scholars gained
recognition with new perspectives. The work of Otto Klineberg in the 1930s challenged the
underlying racist assumptions that had dominated the early studies of intelligence (see Vignette 1).
In the early 1940s, Ashely Montagu (1945) examined the World War I data (Yerkes, 1921) and
discovered what prior scholars had somehow overlooked, potentially due to their biases. As clearly
*noted* in the tables, Black recruits from some Northern states outscoed White recruits from many
Southern states (Montagu, 1945). How many editors, including Yerkes and others on the World
War I team, reviewed these World War I data tables without questioning their beliefs in the
superiority of White people and (apparently) without even perceiving the data? How did many
readers examine these outcomes yet fail to raise questions? The decades-long failure of *anyone* to
publicly note these explicit findings provides more evidence for the degree of the social biases in
the early twentieth century as well as the difficulties inherent in exposing and challenging these
biases.

Other scholars also influenced these changing perspectives and pushed for the formal study of
prejudice, its causes, and its consequences. After serving in World War I, Kurt Lewin engaged in
Gestalt research with Wertheimer and Köhler in Berlin. Lewin left Germany in 1933, in part due to
fears about the consequences of his Jewish identity as the Nazis came to power (see Miller, 2016,
this volume). Lewin’s applied emphasis, combined with his willingness to study intergroup
relations and similar topics that involved prejudice, helped guide the field toward addressing
practical social problems, and these now included problems rooted in prejudice.
World War II also prompted psychologists to examine the factors that led to genocide and conflict. As noted in the history of the psychology of social issues (Abbot, Pelc & Mollen, 2016, in this volume), this global conflict inspired psychologists to look in several new directions, including the psychology of prejudice. Several scholars began to view prejudice as pathological, including Gordon Allport in his classic *The Nature of Prejudice* (1954), which has been very influential in the study of prejudice since its publication (Dovidio, Glick & Rudman, 2005). Allport (1954) stepped into questions about racial prejudice, including the role of religious beliefs and the consequences of forms of religious belief, and he pursued these questions for much of the rest of his career (Allport & Ross, 1967). Joost A. M. Meerloo, a Dutch psychiatrist who observed the brutal application of anti-Semitism and other prejudices before he fled Nazi-occupied Holland, promoted similar views about prejudice (Meerloo, 1944, 1956, 1961), including prejudice about governmental and economic systems, often in the face of intense cultural opposition (see Vignette 2).

Muzaffer Sherif also raised important questions about prejudice in the 1950s. During World War II, Sherif had been a vocal critic of the Nazi movement and Nazi influences in his native Turkey. He spent months as a political prisoner, held without charge in solitary confinement (Harvey, 1989). He used this time to ponder questions, including those related to prejudice, which shaped his later work. He considered the apparent mystery of how people could share a culture, language, religion, customs, and history yet could systematically mistreat, imprison, and kill each other. These questions led to the development of his prominent Robbers Cave studies of intergroup conflict induced in initially homogenous groups (Sherif, Harvey, White, Hood & Sherif, 1961; Sherif & Sherif, 1953). Sherif and his colleagues demonstrated clearly that prejudice, including intense prejudice, was possible within homogenous groups, and they demonstrated the effectiveness of superordinate goals, goals so important they transcend group membership, on reducing prejudice. Although these studies are well-known, there is now a growing recognition of Sherif’s international political activities, particularly his lifelong challenges to fascism and totalitarianism (Kayaoğlu, Batur & Aslıtürk, 2014).

In this whirlwind review of major events in the psychology of prejudice, we now turn from the inception of the psychological study of prejudice to its extension, particularly another mid-twentieth century development. Early female psychologists faced extensive obstacles to success despite monumental contributions to the field (see Milar, 2016, this volume; Scarborough & Furumoto, 1987). How did women challenge these strong cultural and scholarly forces?

**A Brief History of the Efforts to Create an Organization for Female Psychologists**

Currently, the American Psychological Association (APA) has a permanent committee, the Committee on Women in Psychology (CWP), which monitors the status of women in psychology and informs APA policy about women in psychology. In addition, U.S. psychologists have two organizations that are dedicated to issues surrounding the psychology of women: the Association for Women in Psychology (AWP) and the Society for the Psychology of Women, APA’s Division 35. However, these organizations did not always exist, and this section highlights some of the efforts to develop and gain recognition for these organizations, beginning with some events during World War II.

World War II presented a significant opportunity for psychologists to provide contributions to the wartime effort. In 1940, the Emergency Committee on Psychology was formed to determine what psychological services the community could provide (Johnson & Johnston, 2010). It was organized and chaired by male psychologists while women psychologists were entirely excluded. According to Schewsinger (1943), a psychologist at the time, when female psychologists dissented and raised
questions about their exclusion, they were told that their “job was to keep the home fires burning... In other words, women were allocated to a pre-Victorian position with respect to the war” (p. 298).

While female psychologists raised concerns about gender discrimination in the field, many male psychologists argued that there was no discrimination and pointed to the small number of women in psychology who held prominent positions (Johnson & Johnston, 2010). Moreover, even after protests about the gender discrimination within the ECP, the committee maintained their stance and kept entirely male membership. While many female psychologists did not want to create gender segregation within psychology, some believed it necessary to create a group specifically for women in the field who sought to contribute to the wartime effort.

As a result, in December 1941, after being repeatedly prevented from contributing to the wartime effort, a group of female psychologists met in New York to discuss the possibility of forming a committee for women in psychology to apply their own skill sets directly to issues pertaining to the war (Schwesinger, 1943). Ultimately, they formed the National Council of Women Psychologists (NCWP), electing officers and drafting a constitution (Johnson & Johnston, 2010). By June 1942, 240 women in the field had become charter members in the NCWP (Johnson & Johnston, 2010).

Over the course of the war, the NCWP contributed to several wartime initiatives and conducted other research. They created various outlines for lectures to be used by psychologists when they were talking to groups of civilians about coping with psychological aspects of the war at home (Carrington, 1952). They also studied gender roles, conducted public opinion polls, researched the challenges facing black women in Harlem, and consulted for both military organizations and local governments, among other endeavors (Johnson & Johnston, 2010). The committee received requests for help from various organizations around the country, and, as a result, they were able to connect female psychologists around the country to jobs for which they may have been previously overlooked (Schwesinger, 1943).

Once World War II ended, however, the issue of whether to disband the NWCP was brought to a vote (Johnson & Johnston, 2010). Some of the members of NWCP argued that since it was a group formed solely for the purpose of aiding in the war effort, it should be disbanded. Many other women in the group, however, had interests in studying issues abroad, particularly those that affected women and children, and thus the group chose to remain but changed its name to the International Council of Women Psychologists (Johnson & Johnston, 2010).

The International Council of Women Psychologists (ICWP) produced a newsletter that highlighted the accomplishments of female psychologists (Walsh, 1985). The ICWP also sponsored special sessions at APA’s annual convention between 1940 and 1949 about and for female psychologists. In 1948, the ICWP informally discussed the possibility of becoming a division of APA with APA leadership, and “they were informed that the APA would not admit a group limited to one sex” (p. 21).

The ICWP also faced other resistance. For example, in 1953, the ICWP attempted to conduct a study on the status of women in psychology to learn what women in psychology were doing at the time (Walsh, 1985). However, the study was never completed, partially due to the fact that the first several people contacted to be in the pilot study refused. They did not want to be a part of an effort that could be seen as complaining about gender differences. The committee “was allowed to die a quiet death” (p. 21).

In 1959, the ICWP ultimately chose to remove “women” from the name entirely and open the group to male membership after mounting pressure and criticism (Johnson & Johnston, 2008),
including the refusal of APA to award them division status (Walsh, 1985). The name change did not sway the APA, but it did increase the number of men in the organization (Walsh, 1985). The International Council of Psychologists (ICP) still exists today (International Council of Psychologists ICP, 2016), although its primary focus is no longer about women.

During the 1960s in the United States, the civil rights movement, the women’s movement, and the Vietnam War all moved social activism and issues of injustice into greater cultural and psychological prominence. In particular, there was a great deal of discussion of sexism and sexist practices within psychology at the 1969 American Psychological Association (APA) convention (Tiefer, 1991). For example, all of the women at the Women’s Caucus reported at least one instance of sex discrimination in their professional careers (Fidell, 1970). Convention sessions “became angry discussions focused on sexist practices at the convention, discrimination in both academic and professional psychology, and examination of the role of psychological theory in women’s oppressions” (Tiefer, 1991, p. 636).

One immediate response to these discussions was a booth positioned near the Job Placement Center at the 1969 APA convention to serve as a resource for female psychologists dealing with sexism on the job market (Tiefer, 1991). There were also a few (mostly unsuccessful) petitions put forth to APA. However, one successful result of these discussions was the formation of the Association for Women Psychologists in 1969. A later name change in 1970 to the Association for Women in Psychology (AWP) was made to clearly state that one of the objections of AWP was to work on behalf of women in psychology, including female “students and consumers” (p. 639).

During APA’s 1969 convention, female psychologists requested that a study group be formed about sexism in the APA and that this group’s mission culminate with a meeting at the 1970 APA convention to discuss its report (Tiefer, 1991). No study group was formed, but APA did begin hosting Town Meetings (Tiefer, 1991). APA members did not take the demand for $1 million in reparations to women in psychology made at the 1970 Town Meeting as a serious request (Reinhold, 1970). Other requests that AWP made in 1970 may still be issues for psychologists today, including requesting that APA support “the principle that part-time employment count toward tenure and promotion” (Tiefer, 1991, p. 639) and support child-care centers on campuses and “firms employing psychologists” (p. 639). Although the Town Meetings at APA were not specifically about issues pertaining to women, AWP members continued to use this opportunity for years to bring up issues relevant to female psychologists (Tiefer, 1991).

Based on pressure from AWP (Mednick & Urbanski, 1991) and possibly the changing sociopolitical environment (see Walsh, 1985), the APA developed a Task Force on the Status of Women in Psychology in 1970. Astin (1972) reported on some of the task force’s research about the employment status of women in psychology, and Astin encouraged psychologists to make reexamine their recruitment, hiring, and promotion policies and practices, based on the results of this research. Ultimately, the task force recommended a new division of APA. As a result, in 1973, Division 35 of the APA, Psychology of Women, was approved by the APA, after a “lively discussion” which included words such as “ghettos” and “segregation” (Mednick & Urbanski, 1991, p. 652). Division 35 quickly started a peer-reviewed journal, the Psychology Women Quarterly (PWQ).

The report from the Task Force on the Status of Women in Psychology also led to the creation of a permanent committee within the APA: The Committee on Women in Psychology (CWP). In 1973, the APA Monitor published a story about AWP, Division 35, and CWP all working on different aspects (political lobbying about women’s issues, conducting research about women, and promoting the status of women in psychology) related to women in psychology. However, these
three groups’ initiatives and goals have more overlap than the 1973 article predicted (Walsh, 1985). All three are still currently active.

Today, the Committee on Women in Psychology (CWP) evaluates and records the status of women within the psychology profession. They are charged with recognizing discriminatory practices and working with various institutions to implement policies to eliminate these practices. They are proponents for more women in leadership roles within the APA and outside of it. Moreover, they advocate for changes to public policy surrounding women and other underrepresented groups (“Committee on Women in Psychology,” n.d.).

The Society for the Psychology of Women primarily focuses on promoting feminist practices and scholarship for both men and women who pursue careers within the field of psychology. They seek to raise awareness around feminism and feminist issues while also working to influence public policy to serve women in more positive and productive ways. They publish both a quarterly, peer-reviewed journal entitled *Psychology of Women* and a *Psychology of Women* newsletter (“Society for the Psychology of Women,” n.d.).

The Association for Women in Psychology not only promotes women’s rights but also works to empower all people from different backgrounds and end discrimination across all groups. They strongly advocate for feminist ideology to be entwined into all aspects of society, including within the field of psychology. They are involved in ongoing education and research regarding feminism and issues concerning women. By further educating members about these topics, they seek to spread ideas which challenge traditional norms and create inclusivity in hopes to inspire further change (“Association for Women in Psychology,” n.d.).

**Changing Views of Sexual Orientation**

Psychological organizations and their members have taken leading cultural roles in challenging prejudice against people of diverse sexual identities (American Psychological Association, 1975, 1998, 2009; Paul, 2016), but this was not always the case. Through the mid-twentieth century, many psychologists had perpetuated these biases, viewing people of diverse sexual orientations as inherently pathological (Viney & Woody, in press). In the late 1960s and early 1970s, however, psychological scholars and practitioners extended questions of prejudice to include people who are not heterosexual.

The American Psychiatric Association publishes the *Diagnostic and Statistical Manual of Mental Disorders* [DSM], sometimes called the “psychiatric Bible” (Kutchins & Kirk, 1997), and in 1973 it no longer classified homosexuality and bisexuality as psychological disorders (American Psychiatric Association, 1973). Although 1973 is often heralded as the year homosexuality was taken out of the DSM, the DSM-II, published in 1973, included ego-dystonic homosexuality as a psychological disorder. This disorder highlights the tension some may feel when their self-concept does not match their sexual orientation. In 1987, ego-dystonic homosexuality was taken out of the DSM, and all references to homosexuality were erased with the DSM-III-R (American Psychiatric Association, 1987). How did these changes emerge?

After the riots at the Stonewall Inn in New York City, members of the growing gay rights movement began to protest at American Psychological Association conventions (Drescher, 2012). These events led to presentations and debates about whether homosexuality was a disorder, particularly in the light of recently published findings by Kinsey, who found that same-sex romantic or sexual attraction and interaction were far more common than widely believed (Kinsey, Pomeroy & Martin, 1948), and Hooker (1957), whose studies of gay men revealed no systematic psychological
disorders related to their sexual orientation. These events came to a head at the 1972 American Psychological Association convention.¹

By this time, Dr. John Fryer had already faced dismissal from a job and a psychological residency due to his status as a gay man, but he decided to come forward (Scasta, 2008). He also knew the serious risks he faced to his career, particularly because he did not have tenure at the time. Therefore, he disguised his identity—no small feat for a man who stood 6’5’’ and nearly 300 pounds. But, with an oversized tuxedo, a Richard Nixon mask, and a voice-altering microphone, he stepped to the podium as “Dr. H. Anonymous” (Scasta, 2008) and shocked the room. He introduced himself by saying “I am a homosexual. I am a psychiatrist. I am, like most of you in this room, a member of the American Psychiatric Association, and am proud of that membership” (Scasta, 2008, p. 80). A widespread belief from that time was that no psychiatrist could be gay; Fryer’s statement was challenging to the audience in ways that may be difficult for today’s readers comprehend (Viney & Woody, in press).

These events formed a turning point in a large, complex, and long-term movement. Change did not happen immediately. For example, in the front row for Fryer’s talk was a psychological administrator who was impressed. Despite this, the administrator later fired Fryer for his sexual orientation, never knowing that he had dismissed the inspiring Dr. H. Anonymous (Scasta, 2008). Psychologists still promoted varied views of people of diverse sexual orientations but continued to move toward acceptance, with acceptance coming later in some areas than others (e.g., some forms of religious counseling, see Paul, 2016). In recent years, the APA has become a leading voice for cultural change and gay marriage (Drescher, 2012). These endeavors also put scholars as well as the APA in a position to extend the psychology of prejudice to include the complex variations in human gender identity.

Sex and Gender Outside of Two Categories

Our psychological and cultural understanding of gender is changing quickly. Much of the public as well as many earlier scholars, even in psychology, have long confounded sex (which is biological) and gender, which is “the attitudes, feelings, and behaviors that a culture associates with a person’s biological sex” (American Psychological Association, 2011, p.11). Across sex and gender, our typical assumption of two categories does not adequately describe human experience.

Regarding biological sex, we now have greater awareness that two categories omit many individuals. For example, Blackless and colleagues (2000) found that in up to 2% of live births in the United States involve a child who is intersex or who displays sexual variation that warrants examination by a specialist. They also note that their estimate is low for several reasons. Recently, people who identify as intersex have challenged the U.S. Military as well as other organizations, seeking recognition of their status outside of either male or female categories (Karimi & Stewart, 2016; Slevin & Peipert, 2016). 

Similarly, two categories of gender do not represent human experience, and they never have. Historical examples abound. The Hijra, biologically male people living as women, have deep historical roots in India but only recently gained recognition as a third gender (Singh, 2014). Long-standing traditions guide Albanian Sworn Virgins, biologically female people who live and participate in their cultures as men (Peters, 2014). Many Native American cultures have recognized

¹ The DSM is published by the American Psychiatric Association, but the conventions of the American Psychological Association provided the means for protesters and others to access psychological practitioners and scholars, including the creators of the DSM.
people as “Two Spirit,” a term that is difficult to translate adequately and carries complex and various meanings across cultures but generally describes people who live outside of the roles based on the biological sex to which they were assigned at birth (Drury & Calvin, 2012).

Gender identity disorder, which labeled individuals who are trans* (a broad term for people who identify outside the binary categories of gender to which they were assigned at birth) with a psychological disorder, was originally placed in the DSM based on contributions of psychologists such as John Money and Harry Benjamin, who had an essentialist conceptualization of gender, believing that gender was fixed at an early age and almost impossible to change (Dresher, 2010). In a move paralleling the DSM’s treatment of homosexuality, the 2013 version of the DSM no longer included gender identity disorder, but it does contain gender dysphoria disorder, which acknowledges the distress a person may feel when a person’s sex and gender do not match (American Psychiatric Association, 2013). It remains to be seen if the parallel with homosexual in the DSM continues with the complete removal of people who are trans* from the DSM.

In recent years, questions related to people of diverse genders have exploded (see Viney & Woody, in press, for a review). Caitlin Jenner’s decisions to transition publicly and to speak about her identity and her transition have reshaped this conversation and led to her status as a runner-up to be Time’s 2015 person of the year (Steinmetz, 2016). These questions have also led to intense debates on a wide range of topics, including bathrooms. For example, North Carolina enacted a law requiring individuals to use bathrooms that correspond to their birth sex. Not only did this prompt cultural, scientific, and legal backlash, but questions about implementation rose to the forefront, with one political cartoonist suggesting a new job title (i.e., “Hoohoo inspector,” Sack, 2016) for the small army of people the state would have to hire to enforce this legislation. Following the intense backlash, North Carolina recently started the process to eliminate the legislation (Associated Press, 2016), which may or may not be successful. As with sexual orientation, the American Psychological Association (2015) has emerged as a leader in challenging prejudice against people who identify their gender outside of the sex to which they were assigned at birth. These approaches, particularly the move to the forefront of the wave of acceptance, show stark differences with the approaches psychologists took to race less than a century ago.

Conclusion

The American Psychological Association and its members continue to promote acceptance and recognition of the integrity of individuals to live in a variety of gender roles and expressions. Beyond these specific movements, there is also growing recognition of intersectionality. The notion of intersectionality recognizes the complex multiple identities that each of us carries and that emerge differently across contexts (Else-Quest & Hyde, 2016). For example, if I am a young woman, gender may not be relevant in my psychology classes, where a majority of the other students are women, but may be very salient in my engineering classes. Similarly, my age may not be relevant when I am surrounded by a majority of traditional-age college students, but it may be very relevant when I meet my new neighbors and face their biases about college students. For another example, a Latino man who is gay and Catholic will likely have a different experience in the world than a White, Buddhist man who is gay, partially due to how their multiple identities intersect, even though they are both gay men. Our diverse experiences of the interactions among our multiple identities with the multiple contexts of our worlds (Collins & Bilge, 2016) lead to far more complex ideas, scholarship, teaching, and practice.

As we look past this whirlwind review into the future of the study of prejudice within psychology, we expect our worldviews, methods, and understanding to change and grow. Did anyone 100
years ago (other than potentially Anonymous, 1916) expect the psychology of prejudice to emerge as a field? Did the pioneers of the field expect it to extend to include women’s perspectives or to questions about people who are diverse in sexuality or gender identity? In particular, how many people (if any) expected such fast and radical changes to our notions of gender in the past five years? Can we reasonably predict the future in this rapidly changing field? One common theme that reaches from Montagu (1945), Allport (1954), and Meerloo (1944) to the present is a persistent optimism that we can change and improve as individuals, as psychologists, and as a culture, and we seize this optimism as we look toward the future.

Vignettes

1. Using Hurricane Katrina to Teach Intergroup Relations
On August 29, 2005, Hurricane Katrina caused mass devastation in New Orleans. The loss of 1,836 people and the displacement of one million people (Plyer, 2016) created many issues in the United States from racial tensions to rising gas prices. Due to the perceived inadequate responses by government at all levels, the issue of racism in the United States was dragged to the forefront of national conversation (“What Katrina taught us about race,” 2006). As a relatively recent historical event, the aftermath of Hurricane Katrina is an event that 1) students may be aware of, and 2) can easily illustrate issues of intergroup relations in psychology.

Intergroup Contact Theory
Allport (1954) proposed the contact hypothesis, which states that contact with an outgroup member can reduce prejudice toward that outgroup. After decades of research and a rebranding from the contact hypothesis to intergroup contact theory, Pettigrew and Tropp’s (2006) meta-analysis of over 500 studies provided strong support for the theory. This was especially true if all of Allport’s (1954) conditions were met: support from institutions, friendship potential, equal status, and cooperative goals.

It is relevant to note that 1 in 3 victims of Hurricane Katrina who lived in areas affected the most significantly by the hurricane were African American while 1 in 8 people in the entire United States are African American (White, Philpot, Wylie & McGowen, 2007). This means that many of the people who were relocated to other communities were African American, and many of them were relocated to predominantly European American communities (Hunt, Seifert, Armeta & Snowden, 2006). As a result, intergroup contact theory could be applicable to the situation (see Hunt et al., 2006).

A prediction from intergroup contact theory would be that the increased contact between African American evacuees and European American community members would decrease the European American’s prejudice toward African Americans. However, Hunt et al. (2006) noted that one of the four conditions of the theory, equal status, may not have been satisfied. Evacuees who were relocated to other communities did not have the same resources as established community members, so they may have been perceived as having a lower status.

Realistic Conflict Theory
Realistic Conflict Theory (Levine & Campbell, 1972) proposes that competition for resources creates prejudice between groups, with the most famous investigation of this theory occurring with boys at a summer camp (Sherif, 1966). In the aftermath of Hurricane Katrina, resources were scarce in New Orleans. According to realistic conflict theory, the perception that they had to compete for scarce resources would increase intergroup tensions. In addition, this competition could have been
perceived in communities where evacuees relocated (Hunt et al., 2006) due to the community resources needed to support the evacuees (see Sealover, 2005), potentially increasing the tension between evacuees and community members.

**Social Identity Theory**
Social identity theory (Tajfel & Turner, 1979) proposed that in addition to our personal identities, we have social identities based on our group memberships. We tend to favor members of our own group compared to outgroup members and engage in ingroup bias, also called ingroup favoritism. Kemmelmeier et al. (2008) argued that the catalyst of the tension after the hurricane in New Orleans was caused by an “us vs. them” mentality. As New Orleans residents increasingly demonstrated violence toward rescuers and refused aid, so then the rescuers increasingly created their own ingroup where they viewed survivors with contempt and prejudice (Kemmelmeier et al., 2008). Social identity theory can explain how the tensions that arose after Hurricane Katrina, while not always predicted by the person’s ethnic group, could be explained by the people’s group membership (i.e., residents and rescuers).

**Perceived Threat**
The tensions may have been further intensified if the evacuees were perceived as threats (Hunt et al., 2006). Perceived threat often involves cognitive processes which result in the perception of competition whether the competition is present or not (Sassenberg et al., 2007). Social identity theory, realistic conflict theory, and revised integrated threat theory all suggest that perceiving an outgroup as a threat leads to higher levels of prejudice toward that outgroup and its members (Hunt et al., 2006). After Hurricane Katrina, rescuers and residents remaining in New Orleans had several incidents involving aggression by the residents against those who were responsible for helping them, including gunfire directed at rescue vehicles (Kemmelmeier, Broadus & Padilla, 2008). While ethnicity could play a role in these interactions, many members of the rescue team were members of the communities in which they worked as well as people of color (Kemmelmeier et al., 2008).

**Differential Responses of African Americans and European Americans**
O’Brien et al.’s (2009) research suggested that European Americans were more likely to think of racism as being individual racial prejudice as opposed to institutional racism, which in turn influenced European Americans’ perceptions of the handling of Hurricane Katrina. In the aftermath of the hurricane, the government received criticism at the local, state and federal levels with individuals claiming that the response to the disaster was inadequate and that these inadequacies were a result of so many evacuees being African Americans (Ai et al., 2011). However, African Americans were far more likely to attribute the deficiencies in government action to racism than were European Americans (Ai et al., 2011). According to a poll taken not long after the hurricane, 71% of African Americans believed that Hurricane Katrina demonstrated that racial inequality was still a major issue in the United States, while only 32% of European Americans believed the same (Adams, O’Brien & Nelson, 2006).

There were also some differences between African American and European American responses, particularly emotional responses, to Hurricane Katrina. White et al.’s (2007) study of polls showed African Americans felt more anger and depression than European Americans. One poll indicated that 76% of Blacks and 60% of Whites felt anger, while another poll showed 71% of Black and 47% of Whites expressed anger. The poll results also showed that 56% of Whites and 74% of Blacks indicated they were depressed after Hurricane Katrina. White et al. also found that African
Americans and European Americans felt similar amounts of shock (80% and 77%) and sadness (99% and 97%) following the events of Hurricane Katrina.

Conclusion
Hurricane Katrina created a new national dialogue around race and the prejudice and biases that many individuals continue to hold. Intergroup conflicts very much became a significant issue contributing to this dialogue. The relocation of individuals highlighted these notions of perceived threats and how individuals identified themselves within their groups. Increased tensions in communities who received evacuees very much demonstrated how group conflict and biases develop and strengthen further in many different contexts, notably in situations of emergency and necessity, such as evacuees needing to relocate. Reactions to hurricane Katrina also indicated that racism can still occur in a more covert fashion, which was exhibited by the disparities between perceptions of the government’s failures and the tension experienced within communities to which evacuees relocated. These discrepancies between groups in the United States provides an opportunity for us to further examine intergroup conflict revolving around prejudice and discrimination.

2. Otto Klineberg: Champion of Racial Equality
Otto Klineberg’s pioneering studies on the intelligence scores of African-American students helped win the Supreme Court’s landmark Brown vs. Board of Education school desegregation case in 1954. Klineberg’s work played a critical role in American politics, the civil rights movement, and a nationwide shift in consciousness about race.

Otto Klineberg (1899-1992) was born in Quebec City and raised in Montreal from the age of 5. His parents were both immigrants from the Austria-Hungarian Empire who were brought to Canada when they were young children, where they received a modest education. Klineberg attended public school and Montreal High School. He grew up in a warm, friendly, conservative Jewish home that encouraged Otto and his seven siblings to pursue their education, and all of them went to college (Klineberg, 1974).

Klineberg attended McGill University where he studied philosophy because the only psychology professor had enlisted in the Canadian Army to serve during WWI. Klineberg received a BA with First Class Honors and the Prince of Wales Gold Medal. As a result, he received a tuition scholarship to attend Harvard in 1919-20 to obtain an MA. He studied with Floyd Allport and H. S. Langfeld, but when he returned home, his friends and family discouraged him from going for a Ph. D. and, bowing to their wishes, he went for a medical degree at McGill, thinking that if couldn’t be a psychologist, he could be a psychiatrist. He completed his medical studies but was not happy with medicine as a career. Now determined to follow his passion, he enrolled in Columbia University’s summer program and studied with Edward Thorndike, Albert Poffenberger and Gardner Murphy in psychology as well as Edward Sapir and Franz Boas in anthropology. During this time he became close to “Papa Franz” and his circle of students including Ruth Benedict and Margaret Mead when she returned from Samoa (Klineberg, 1974).

Klineberg’s life took a dramatic, life-changing turn when a fellow graduate student, Melville Jacobs, asked him to accompany him on a trip out west to do field work in linguistics. Klineberg asked his thesis advisor, Robert Woodworth, if he had any money to support the road trip and was told that
a modest amount could be provided if he conducted research among the “Indians” as a part of his dissertation. Thus, Klineberg shifted his focus from abnormal psychology to “race.” Klineberg found that Yakima children appeared fairly indifferent to the amount of time required to complete the tests he administered, regardless of how often Klineberg repeated or emphasized the need to work “as quickly as possible” while their accuracy was better than a control group of White children from the nearby town of Toppenish (Klineberg, 1928). This study formed the basis for his doctoral thesis. With his doctorate in hand, Klineberg received an NRC Fellowship to go to France where he studied whether there are innate racial differences by comparing the of performance of Nordics, Alpines and Mediterraneans, all of which were considered at the time to be distinct races of White people (see Gould, 1981), and found no differences (Hollander, 1993).

Klineberg returned to Columbia as Research Assistant in Anthropology. He taught courses in anthropology and psychology and collected the material that resulted in his influential book, *Negro Intelligence and Selective Migration* (Klineberg, 1935a). At that time, there were two competing theories that were being used to explain why African-Americans in the North scored higher on intelligence tests than their Southern compatriots (see Gould, 1981). The first theory was that of selective migration, which suggested that only smart African-Americans left the South to seek new opportunities in the North. The second theory was that the educational system in the North was superior. In examining the school record of migrant Negro children, made in the South before they migrated, Klineberg found that they were no better than the average Negro children in the Southern schools from which they came. Further, in comparing the test performance of Southern-born migrant negroes with that of Northern-born negroes in New York City schools, Klineberg found the latter generally superior to the former on practically all verbal tests (group tests, the individual Binet tests, etc.), but when migrants attended superior, integrated schools, their scores came up to par with their Northern-born cohort and exceeded those of comparable Southern Whites (Klineberg, 1935a).

Klineberg’s findings resonated with the American Student Union [ASU], which actively condemned discrimination, racial prejudice, lynching, the plight of Arkansas sharecroppers, and the highly controversial Scottsboro Case in Alabama. The ASU sponsored animated lectures, roundtables, and a student newspaper throughout the decade (Culff, 2008). However, the prevailing sentiment among Whites was that Blacks were intellectually and morally inferior (Winston, 1998). Responding to Klineberg’s denunciation of established ideas about racial superiority and the prohibition of interracial marriage, the *New York Herald-Tribune* published an editorial stating that “his assertions ran counter to most ethnologists, ‘any intelligent farmer’s knowledge of barnyard biology,’ and ‘American experience’” (Lambert, 1992, p. 1).

Klineberg believed that “every racial group contains individuals who are well endowed, others who are inferior, and still others in between. The range of capacities and the frequency of occurrence at various levels of inherited ability are about the same in all racial groups” (Klineberg, 1935b, p. 8).

Not everyone condemned his work. In 1935, the columnist Lewis Gannett praised Dr. Klineberg’s work, saying, “Negroes are not inferior; they just have not had a chance. It is too much to hope that one academic monograph will blow away the mists of superstition in which the average White American mind is wrapped; but this little book may make a beginning” (Lambert, 1992, p. 2).

Klineberg firmly believed in the Lewinian maxim that “Research that produces nothing but books will not suffice” (Lewin 1946, reproduced in Lewin 1948, pp. 202-203). Klineberg provided key evidence in the 1952 Delaware case *Belton v. Gebhart*, one of several cases consolidated to form the Supreme Court’s 1954 case *Brown v. Board of Education*, which ended school segregation. The Delaware case was the only one that was successful at the state level. Klineberg not only
conducted the research on which the integrationists based much of their case, but he testified in court as well.

By the time Otto Klineberg took the stand in Delaware to testify against school segregation, he had been arguing the scientific basis of racial equality for 20 years. In response to Klineberg’s involvement in the Delaware Case, Klineberg’s former mentor, Henry E. Garrett, head of psychology at Columbia University and a firm believer in segregation of the races, went so far as reporting Klineberg to the FBI for advocating “many Communistic theories,” including the idea that “there are no differences in the races of mankind” (Jackson, 2005, p. 112).

Klineberg used his work as a scientist to help turn the tide of popular opinion, speaking out against bigotry in all forms and labeling Hitler’s Aryan race a fiction. He was convinced, as were most anthropologists at this time, that the only race was the human race and that the source of race prejudice was not actual experience but situations in which a group can gain advantage over another group by “belittling them” (Culff, 2008, p. 6).

Klineberg loved teaching and once remarked that he was fortunate to be paid to do something that he would be willing to pay to do. He was influential in preparing a whole generation of social psychologists who became involved in addressing prejudice and other social ills including Kenneth B. Clark, Muzafer Sherif, Solomon Asch, and Irving Janis. The Society for the Psychological Study of Social Issues (SPSSI) gives the Otto Klineberg Intercultural and International Relations Award each year, honoring his contributions to promoting racial equality as well as other social issues.

3. Joost A. M. Meerloo’ and Psychological Peacefare
Gordon Allport’s classic The Nature of Prejudice helped shift the worldview of scholars of the psychology of prejudice by emphasizing the social and cognitive nature of prejudice and by arguing that judging others in advance according to perceived group membership presented problems in our culture. Prior scholars had viewed prejudice as natural, inescapable, and beneficial for society (see e.g., Gould, 1995; Winston, 2003), and the first section of this chapter (“In the Beginning, It Was Dark”) describes the general worldview accepted and promoted by psychological scientists at this time.

In addition to Allport, another figure also contributed to this shift in worldview, even if his work remains largely unknown. Joost A. M. Meerloo (1961), a Dutch psychoanalyst who fled the Nazi-occupied Netherlands during World War II, wrote That Difficult Peace, a powerful statement about prejudice in human cultures. In this vignette, we briefly review Meerloo’s biography, particularly his personal experiences with prejudice and discrimination, and then we explore his psychoanalytic perspectives on prejudice.

Joost A. M. Meerloo (1903-1976) was born Abraham Maurits Meerloo, and his friends called him “Bram.” He earned a medical degree in 1927 and a doctorate in 1932. He then served as a Captain in the medical corps of the Dutch Army. Like so many others around the world, his life changed forever with World War II. When Germany invaded neutral Holland in 1940, they disbanded the Dutch military and brought the Gestapo and their program of anti-Semitism; Jews faced imprisonment, execution, or transportation to labor and death camps (Frank, 1953/1993; Meerloo, 1944). Meerloo also observed consequences of his membership in professional groups; the Nazis required all physicians to join a medical guild before being allowed to practice (Meerloo, 1943). It
was at this time that Meerloo took the new first name “Joost” to fool Nazi occupiers about his identity.¹

During the more than two years he spent in occupied Holland, Meerloo had a horrifying vantage point to observe the actions and consequences of prejudice. He wrote extensively about the biases that the Nazis carried, particularly biases against people who were Jewish, physicians, and the Dutch population in general (Meerloo, 1943, 1961). He was not just an observer; Meerloo was an active participant in the Dutch resistance movement, and he used his psychological education to help other resistance fighters prepare for, endure, and recover from coercive interrogation (i.e., torture) by the occupiers (Meerloo, 1956). Eventually, he learned that his name had come up during the interrogation of a known resistance fighter, and Meerloo fled his homeland. In his flight, he faced his own coercive interrogation (in which he did not provide any information to experienced Nazi interrogators) and consignment to a prison train bound for Germany. He then escaped from the train, was caught by Swiss border guards, survived another coercive interrogation, escaped again this time from a prison camp, and then walked from northeastern France through the Pyrenees to Madrid, where he found passage to London (Lech, 2011; Meerloo, 1956). In England, he served as Head of the Department of Psychological Warfare for the Dutch government in exile, and he received the Distinguished Service Cross from the Netherlands in 1943 (Read, 1964).

Meerloo’s psychoanalytic background, the intensity of the Cold War after World War II, and his wartime experiences shape That Difficult Peace. His focus is largely individual rather than cultural, and he views our individual struggles through a psychoanalytic lens, with prejudice as an internal battle against our darker drives of aggression and self-interest. Additionally, his lifelong emphasis on individual struggles against social, interpersonal, and governmental forces (Woody, 2016) emerges in this volume; he opens the book with discussions of the breakdown of the Paris Summit Conference in 1960, where the Soviet Premier Khrushchev met with U.S. President Eisenhower to discuss the downing of a U.S. spy plane and the capture of the pilot, Gary Francis Powers (Harbutt, 2002). Many observers had hoped that this conference could lead to a period of peace between the major powers. The failure of these talks led instead to concerns, which remained tragically justified, about a prolonged period of tension and potential war between these nations. Meerloo centers his book on the individual defenses against social influence from the time as we lived under threat of nuclear disaster or, as Meerloo (1961) states, in “The Shadow of the Mushroom” (p. 123).

Meerloo’s work also reflects his own experiences in occupied Holland, and he invests much of the discussion of this work to exploration of anti-Semitism, even as he also examines prejudice by race, by nation, and by political and economic systems, particularly capitalism and communism. He places the primary responsibility to challenge prejudice upon individuals, and he seeks to prepare readers to face their own internal psychoanalytic drives in the larger context of the ongoing cold war. Importantly, he views prejudice as a deep-seated human malady that leads to aggression, rejection of others, and failure to work together in our larger culture.

What roles should psychologists have in challenging prejudice? After Meerloo’s World War II participation in psychological warfare (Lech, 2011), he proposed a new field of scholarship directed at improving our psychological health as individuals and to reducing intergroup tensions. He saw the ongoing fight as “a dual battle” against “the resurgence of asocial inner impulses [in the

¹ It appears likely that Meerloo had to employ this deception for his survival (i.e., that he stood at his front door looking at a group of young men in the brown shirts of the Gestapo and falsely stated, “no, you are looking for Abraham, a Captain in the Dutch Medical Corps who has a similar name and education history, but that is not me – I’m Joost”). These interactions, if they occurred, remain unknown.
individual and against external forces and ideologies hostile to the democratic way of life” (pp. 148-149). He argues that this topic of psychological peacefare (a term he coined, p. 145) must inspire research as well as practical applications in schools and communities to help each of us manage our own drives, participate in the protection of freedom and democracy, and reject the alluring and powerful drives toward prejudice and intergroup aggression. From his worldview, this is a strenuous psychological endeavor. We must strive to recognize and pursue not “the peace of sleep and passivity and subservience” . . . but the peace of a strong inner balance, equanimity and inner freedom,” which “will be infinitely more majestic than any war” (Meerloo, 1961, p. 187).

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The Perception of Psychology as Science: An Elusive Association

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The scientific study of the human mind has been a long-standing enigma, as Ambrose Bierce (1958) put it in the Devil’s Dictionary,

The mind n. A mysterious form of matter secreted by the brain. Its chief activity consists in the endeavor to ascertain its own nature, the futility of the attempt being due to the fact that it has nothing but itself to know itself with.

Professional academic psychologists believe that there is a definitional link between the field of psychology and science. For example, “the Association for Psychological Science [APS] (previously the American Psychological Society) is a nonprofit organization dedicated to the advancement of scientific psychology and its representation at the national and international level” (APS, 2016, ¶1). Similarly, the American Psychological Association [APA] states, “APA aspires to excel as a valuable, effective and influential organization advancing psychology as a science” (APA, 2016, ¶6).

Wilhelm Wundt is recognized as the founder of the first psychological laboratory in Leipzig, Germany, and thus the founder of experimental psychology (Benjamin, 1988). Wundt defined the subject matter of psychology as the analysis and reduction of immediate experience into its component elements, much like the periodic table in chemistry. This represents a break from the scientific study of material substance, the brain; to the study of an abstract entity, the mind.

Obstacles to Perceiving Psychology as a Science

The idea that psychology is a science, especially the science of the mind, has not been universally accepted by some scientists, including psychologists, and especially by the general population (Stanovich, 2010). The reasons are numerous and may be different for each group. Among the reasons are a lack of a unifying or grand theory, a misunderstanding of the basic principles of operationism, and the unquestioned preeminence of “common sense.”

Lack of a grand theory. Because it is a relatively young science with a diversity of subareas, some critics have belittled psychological science progress because it has no grand theory. A grand theory “is a mistaken notion because many other sciences also lack a grand, unifying theory” (Stanovich, 2010, p. 5). While physics has general relativity theory and quantum field theory, there has not been general agreement on a theory that unifies them.

Misunderstanding operationism. As an undergraduate, I had a biology major friend (at that time, a future entomologist) who told me that he was considering psychology as a major but that he didn’t know what psychology was studying. At least he could hold a mosquito in his hand, but he had trouble understanding what memory was and how to study it. Finding reliable and valid measures of memory was too indirect for him, even though biology has its share of indirectly measured concepts, e.g., “ecosystem.” “Operationism is simply the idea that concepts in scientific theories must in some way be grounded in, or linked to observable events that can be measured” (Stanovich, 2010 p. 37). Perhaps if the linkage is too distant, not obvious, or is the object of disagreement among researchers, then the scientific basis for studying the concept is undermined.

Psychology as merely common sense. The notion that psychology is not a science also comes from the belief that its theories are simply “common sense.” Folk wisdom has a basis in our being a social species. Every socially-functioning human being has a body of knowledge that assists us in
understanding and predicting the behavior of others, including non-humans. Dennett (2013) labeled this “folk psychology.”

Almost all of us are good at folk psychology. We have a talent for thinking of others (and ourselves) as having minds, a practice as effortless as breathing, most of the time. We depend on it without a qualm of second thought, and it is stupendously reliable. (Dennett 2013 p. 77)

Folk psychology does work accurately most of the time, and it allows humans to function very well. Folk psychology, however, is full of contradictory beliefs, such as “birds of a feather flock together” and “opposites attract.” These beliefs take the form of heuristics, which are cognitively easy to implement and seem to work—even though the effectiveness is sometimes judged via 20/20 hindsight, self-serving bias, or other rationalizations. Nonetheless, folk psychology can be seen as a competitor with scientific theory in psychology and as attractive to the public, the media, and some scientists.

The differences between the formal science of psychology and folk psychology, as well as the difficulty in establishing a science of the mind, form a background in which to describe the development of important issues throughout the history of psychological science. This brief history is also an attempt to describe how the focus of scientific investigation has moved from the natural sciences to psychology. In general, as scientific investigation has moved to challenge established dogma and personal beliefs, the acceptance of conclusions from psychological science and other scientific disciplines (e.g., evolution, global warming) has been met with resistance.

The Discovery of Ignorance

In Yuval Noah Harari’s book, Sapiens: A brief history of humankind, he described the progress of the last 500 years of human growth and resulting cultural dominance as due to “The Discovery of Ignorance.” According to Harari (2015, p. 249), “During the last five centuries, humans increasingly came to believe that they could increase their capabilities by investing scientific research. This wasn’t just blind faith—it was repeatedly proven empirically.”

The Renaissance brought with it an investigative spirit best captured by Leonardo da Vinci (1452-1519) when he supposedly wrote, “If you find from your own experience that something is a fact and it contradicts what some authority has written down, then you must abandon the authority and base your reasoning on your own findings” (“commonly attributed to da Vinci, despite the absence of any such statement in his original writings” (Ronald Wirtz, personal communication, December 21, 2016). Galileo Galilei (1564–1642) is a prime example of a person who bucked authority but paid a price for it. He built on the work of Nicolas Copernicus and Johannes Kepler and concluded from his observations that the solar system is heliocentric rather than geocentric. For this, he is considered by some to be the father of modern science (Weidhorn, 2005). The Catholic Church threatened him with excommunication because his ideas were inconsistent with the current Catholic belief system concerning the universe. There is a popular legend that senior cardinals of the time refused to look into Galileo’s telescope in order to look at the evidence. The basis for the Catholic Church’s position (and legendary refusal) was the belief that important knowledge about God and the self was derived from rational analysis, using logic and reason—and not necessarily observation, especially of such an important issue.

Harari (2015) also distinguished two types of ignorance, individual ignorance of important things and a traditional ignorance of unimportant things. The former could be resolved by asking a person in authority, e.g., the local priest; the latter was open to scientific investigation because it was
considered to be unimportant at the time. “In fact, things were never quite that simple. In every age, even the most pious and conservative, there were people who argued that there were important things of which their entire tradition was ignorant. Yet such people were usually marginalised or persecuted...” (Harari 2015 p. 252).

Descartes brought the distinction between important and unimportant things to the nature of mind and knowledge. He was a rationalist who argued that the foundational contents of the mind (knowledge) were formed using reason over perception and innate ideas over experience (Benjamin, 1988). He, of course, was a dualist, arguing for the separate existence of mind and body, both of which could be studied as such. He was also interested in the nature of the human mind, specifying two kinds of ideas. Innate ideas concerning God and self, and derived ideas, acquired through experience. Descartes demarcated the limits of empirical topics, preserving some knowledge for special treatment.

The British empiricists challenged the distinction between innate knowledge (important things) and derived knowledge (unimportant things). John Locke (1632-1704) argued that all ideas were gained by experience. A child is born a blank slate and experience fills the mind with ideas. Other empiricists (e.g., George Berkeley, David Hume, James Mill, John Stuart Mill), further developed these ideas to include the important role of sensation, the nature of ideas, how ideas were acquired and associated (Benjamin, 1988). No longer was there privileged knowledge due to a special connection with God. Because their philosophical positions concerned the nature of knowledge in the mind, their ideas formed the basis for the development of experimental psychology.

The nineteenth century brought about several developments that further laid the foundation for psychological science. “That century was a time of great progress in physiology, particularly with respect to an understanding of the workings of the nervous system” (Benjamin, 1988, p. 90). For example, Paul Broca and Carl Wernicke used their detailed observations of patients to discover that, upon post-mortem autopsy, certain areas of the brain were damaged and thus were implicated in their symptoms of language deficiency. Damage to an area in the left frontal lobe (i.e., Broca’s area) seemed to be related to a type of aphasia, where the individual has difficulty speaking (i.e., productive aphasia). Wernicke used similar techniques (see Vignette #1) to discover a different area (i.e., Wernicke’s area) associated with understanding language (i.e., receptive aphasia). These discoveries solidified the understanding of the relationship between brain and mind, enhanced the value of the scientific investigation of the brain/mind relationship, and formed the genesis of research concerning localization of brain function. An interesting sidebar in these developments is the study and ultimate rejection of phrenology, as discussed subsequently (Bakan, 1966).

Studies not directly related to the operation of the brain and nervous system, also contributed to the genesis of psychological science, including the nature and measurement of intelligence, the beginnings of psychophysics, and initial work in memory and mental chronometry. Each will be subsequently described in turn.

After the publication of Darwin’s On the Origin of Species, Francis Galton, based on the assumption that psychological traits were inherited, worked on collecting anthropometric data to support his view that the processes involved evolution could be employed to improve humankind. He was a primary founder of eugenics, “an ideology that proposed improvement of the human race by selectively mating those individuals who possessed the most desirable characteristics” (Benjamin, 1988 p. 234). Even though Galton was unable to successfully get a reliable measure of intelligence and other traits, his work did advance the science by the introduction of test batteries, systematic
use of questionnaires, extended use of the normal distribution for classification purposes, the
method of twin comparison, and development of the concepts of correlation and regression
(Diamond, 1977).

Gustav Fechner is best known for the development of Fechner’s Law, which describes the
relationship between the intensity of physical stimuli and the intensity of the psychological reaction
to those stimuli. The relationship is neither a one-to-one nor linear, it is logarithmic. He coined the
term “psychophysics” to describe the study of those relationships. His primary goal was to unearth
the nature of psychological world, by creating its functional relationship to the physical world. In
fact, he believed he could solve the mind-body problem with this approach (Woody & Viney, in
press).

Hermann Ebbinghaus and Franciscus Donders and their studies of memory and reaction time,
respectively, laid the foundation for the scientific study of higher mental processes. They gave
psychology scientific techniques that allowed researchers to peek into the mind to study how
associations are formed and retained and how to measure the time it takes for specific mental
operations to occur.

The historical figures described thus far did not call themselves psychologists; rather they were
physicians, philosophers, and physicists. Yet by the end of the nineteenth century, Wundt was
emboldened to declare a department of psychology. Indeed, psychology began to show all of the
basic ingredients of a science as described by Harari (2015):

But modern science differs from all previous traditions of knowledge in three
critical ways:

a. **The willingness to admit ignorance.** Modern science is based on the Latin
injunction *Ignoramus*—“we do not know.” It assumes that we do not know
everything. Even more critically, it accepts that the things that we think we know
could be proven wrong as we gain more knowledge.

b. **The centrality of observation and mathematics.** Having admitted ignorance,
modern science aims to obtain new knowledge. It does so by gathering
observations and then using mathematical tools to connect these observations
into comprehensive theories.

c. **The acquisition of new powers.** Modern science is not content with creating
theories. It uses these theories in order to acquire new powers, and in particular
to develop new technologies. (pp. 250-251) [See Vignette #1].

**Psychological Science**

Wundt’s laboratory planted the flag of psychology on science mountain, but that did not end the
debate on the issue of whether there could be a science of the mind. Wundt’s approach helped
shape the Structuralist School of thought within psychology. Although Wundt’s larger system was
Voluntarism, Edward Bradford Titchener brought Wundt’s narrow experimental work to the United
States as Structuralism (Leahy, 1981). Wundt’s intent in his experimental studies was to analyze
consciousness and break it down into its constituent elements. The primary method was called
systematic introspection, wherein highly trained individuals did a form of self-observation and
reported their experiences. According to Benjamin (1988), these introspective reports along with
some psychophysical experiments and some physiological procedures constituted the core
experimental data of Wundt’s laboratory and the heart of Titchner’s system of Structuralism (Woody & Viney, in press).

A major competitor of the Structuralist School was the Functionalist School. William James, G. Stanley Hall, and James McKeen Cattell are considered the founders of this school (Benjamin, 1988). Their work was based on Darwinian concerns for the functions of behavior as it fits into the successful adaptation of the organism into the environment. According to Benjamin (1988) their contribution was much more, “Each proved to be a major spokesperson for psychology, explaining—sometimes selling—psychology to students, educators, businesses and the general public.” (p. 271).

The academic debates between the Structuralists and the Functionalists ended as a new school emerged, Behaviorism. John B. Watson, in his so-called “behaviorist manifesto,” stated:

Psychology as the behaviorist views it is a purely objective experimental branch of natural science. Its theoretical goal is the prediction and control of behavior. Introspection forms no essential part of its methods, not is the scientific value of its data dependent upon the readiness with which they lend themselves to interpretation in terms of consciousness (Watson, 1913 p. 158).

These statements stood in stark contrast to the opening sentence of William James’ book, *Principles of Psychology,* “Psychology is the science of mental life, both of its phenomena and their conditions” (James, 1890 p. 1.). Watson had become frustrated with the unreliability of the methods of the earlier schools. He argued that for Psychology to become a science, it must eschew any consideration of “consciousness” because the concept was not reliably tied to any measurement. In order to be a science, the concept under consideration must be reliably observable and the only candidate was behavior and the contingencies in which behavior occurred. Watson had also hoped, by eliminating mind and consciousness (only accessible through introspection), he could expand the subject pool to include other species and young children, who were incapable of verbally reporting their introspections. Thus began 50 years of the dominance of the Behaviorist School of thought. The focus of scientific psychology became observable behavior and the contingencies that would change the likelihood of the behavior being emitted or elicited. In a sense, the inclusion of “mind” made previous approaches seem to be unscientific.

Behaviorism caused psychology to lose its mind, but its mental life was not dead. Events in the mid-1950s began to weaken Behaviorism’s power over the entirety of psychology (Gardner, 1985). The works of Noam Chomsky; Donald Broadbent; Bruner, Goodnow, and Austin; George Miller; Alan Newell and Herbert Simon considered issues that required positing mental structures, such as grammar channels of information flow, hypotheses, perceptual limits, and artificial intelligence. According to Gardner (1985):

...the price paid by strict adherence to behaviorism was far too dear. So long as behaviorism held sway—that is, during the 1920s, 1930s, and 1940s—questions about the nature of human language, planning, problem solving, imagination, and the like could only be approached stealthily and with difficulty, if they were tolerated at all (p. 12).

The 1960s saw a resurgence in the scientific study of mental life, using techniques that were much more objective than introspection. The cognitive revolution was affirmed by the publication of Ulric Neisser’s book, *Cognitive Psychology* (Neisser, 1967). Methodological lessons were learned from Behaviorism and cognitive scientists understood that mental events were inferred from behavioral data. This brings us to the present day, except for the addition of methodological techniques to
look at activity in different regions of the brain as a research participant is performing a cognitive task. For some scientists, this area is so different that it merits a new name, “neuro-cognition” (See vignette #1).

But Is Psychology a Science Really?

It is clear from this encapsulated history that psychological science has established itself within the higher education academy as a science. But the perception of psychology by scientists (aside from the Big Bang Theory character, Sheldon Cooper, who said “And Psychology has once again proved itself to be the doofus of the sciences.”) may suffer from the same prejudices that the general public has concerning the field. “The Freud Problem” by Stanovich (2010) is one of the large misconceptions.

Stop 100 people on the street and ask them to name a psychologist, either living or dead. Record the responses. Of course, Dr. Phil, Wayne Dyer, and other “media psychologists” would certainly be named. If we leave out the media and pop psychologists, however, and consider only those who have made a recognized contribution to psychological knowledge, there would be no question about the outcome of this informal survey. Sigmund Freud would be the winner hands down. B. F. Skinner would finish a distant second. No other psychologist would get enough recognition even to bother about. Thus, Freud, along with the pop psychology presented in the media, largely defines psychology in the public mind. (p. 1)

Stanovich’s frustration with Freud seemed to be true in academia. According to Gardner (1985),

There was also an intoxication with psychoanalysis. While many scholars were intrigued by Freud’s intuitions, they felt that no scientific discipline could be constructed on the basis of clinical interviews and retrospectively constructed personal histories; moreover, they deeply resented the pretense of a field that did not leave itself susceptible to disconfirmation (p. 15).

The work of Sigmund Freud has permeated folk psychology even though his theory has fallen into disfavor in psychological science. Perhaps because of the reliance on stories of individual patients (i.e., clinical interviews and retrospectively constructed personal histories) psychoanalysis captured the attention of the media and some humanities disciplines and thus has enjoyed nourishment. The telling of a good story grabs the listener’s attention and tends to be easily remembered (Bower & Clark, 1969). Even though stories (or testimonials or anecdotes) tend to be the bane of good science, it has been argued that scientific data cannot compete with a good story (Olson, 2009).

The problem that Stanovich is addressing concerns more than name recognition. Folk psychology is a very deep and expansive arena; full of myths, adages, inaccuracies, outright falsities, pseudoscience, and some beliefs consistent with science. Folk psychology beliefs can overshadow and sometimes contradict good science. One might assume that this observation only applies to the present media-rich rich environment, but folk psychology and other irrational beliefs have a history.

Nineteenth Century Folk Psychology

Governments, higher education institutions, and others with power recognized the value of science and were quite willing to invest in it (Harari, 2015). The zeitgeist of science expanded and its focus moved from astronomy, physics, and chemistry; to biology and psychology in the nineteenth
In this intoxicating atmosphere of scientific progress, some questionable ideas were entertained, some died upon examination, but some developed lives of their own.

For example,

Franz Josef Gall, a brilliant Viennese anatomist who made revolutionary discoveries about various neurophysiological functions, also established the physiological basis of mind. His theories were soundly based on comparative anatomical studies of the brain. Gall attributed the higher mental functioning of humans over other species to humans' more highly developed cortexes. He also attributed differences in personal characteristics among humans to cortical differences. He went even further. He identified twenty-seven faculties that he felt comprised the cognitive, sensory, and emotional characteristics of a human being. He taught that these faculties are located in identifiable areas of the brain and that the contour of the cranium provided an observer with an accurate understanding of the development of those faculties (Wrobel, 2015, p. 5).

Fortunately, over time, phrenology was not supported by the data and ultimately was rejected. This is an excellent example of a theory-based idea with little empirical support but an allure because of its supposed beneficial application (in this case, the measurement of personal characteristics, such as intelligence).

Another example of unsubstantiated but scientifically-based theory is mesmerism.

This movement's founder, Franz Anton Mesmer (1734-1815), believed that all human bodies are subject to an invisible magnetic fluid. Physicians could cure imbalances or misalignments of this magnetic force-field by manipulating the fluid in a patient's afflicted areas, using either magnets or, with the more gifted healer, the passing of hands over the body. Mesmer's theory had just enough science to appeal to a new rationalism—his hypothesis of a universal fluid derived from Newton's electromagnetic ether—and enough spiritual overtones to appeal to latent religious needs as well (Wrobel, 2015, p. 5).

Phrenology and Mesmerism are among this first examples of “cargo cult” science, i.e., claims that have enough of the paraphernalia of science to give face validity (Feynman, 1974). Respect for science had its side effects, because as scientific knowledge increased, there was an expectation that new technologies would be developed, in these cases, therapies.

Other aspects of folk psychology incorporated religious beliefs into the claims. A powerful cultural wave of spiritualism began in the United States in 1848 when two sisters, Margaret and Kate Fox, professed to have received intelligent communication from the spirit of a murder victim. These communications were in the form of rapping during séances. The experiences during these séances supposedly comprised empirical evidence of the existence of an afterlife and the reality of the individual soul. Harry Houdini, famous escape artist and magician, wanted to be a believer, but became one of the greatest expositors of the fraudulent nature of spiritualists. He described in detail some of the methods used to produce their effects in his original book, *A Magician Among the Spirits*. (Houdini, 1924/1991).

Mackay (1841/1995) in his book, *Extraordinary Popular Delusions and The Madness of Crowds*, catalogued a long list of what could be considered individuals’ “whims and peculiarities” (p. xv). The topics included alchemy, prophecies of the day of judgment, fortune telling, magnetizers, witch mania, haunted houses, and other topics. Since these topics can be seen on contemporary lists
(e.g., Lilienfeld, Lynn, Ruscio & Beyerstein, 2010), they are a testimony to the consistency of folk beliefs over the years.

Joseph Jastrow in his book, *Fact and Fable in Psychology*, debunked claims of occultism (i.e., “the belief in hidden or mysterious powers that can be controlled by humans who have special knowledge of these powers” Carroll, 1994a, ¶ 1), by approaching it in a scientific manner (Jastrow, 1900). He believed that a role of the scientist is to help the public distinguish fact from fiction and prevent the spread of inaccurate or erroneous information. He was a precursor to the modern day skeptic. (See vignette # 2).

**Folk Psychology Today**

Between the scientific revolution and the early 20th century, the spread of scientific ideas beyond the bourgeoisie and the aristocracy was slow and did not occur until after World War I. (Rudy, 1984). It is a matter of speculation how far-reaching into the general public these ideas were. However, the spread of information in present day has increased the number of claims that would be considered folk psychology. Della Sala (1999) and Lilienfeld, Lynn, Ruscio, and Beyerstein (2010) are examples. A listing of some of the fifty claims from Lilienfeld et al. (2010) is presented in Table 1.

<table>
<thead>
<tr>
<th>A Selection of Myths Discussed in Lilienfeld et al. (2010)</th>
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<tbody>
<tr>
<td>Most people use only 10% of their brain power</td>
</tr>
<tr>
<td>Some people are left-brained, others are right brained</td>
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<tr>
<td>Extrasensory perception is a well established scientific phenomenon</td>
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<tr>
<td>Visual perceptions are accompanied by tiny emissions from the eyes</td>
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<tr>
<td>Subliminal messages can persuade people to purchase products</td>
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<tr>
<td>Playing Mozart to infants boosts their intelligence</td>
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<tr>
<td>Human memory works like a tape recorder</td>
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<tr>
<td>The polygraph is an accurate means of detecting dishonesty</td>
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<tr>
<td>Most mentally ill people are violent</td>
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The list of beliefs that conflict with the scientific data is long, and psychology has a large share in this list. The inordinate number of beliefs concerning psychological topics may be due to the rather late entry of psychology into the scientific realm. Stanovich (2010) suggested that this may also be due to the breadth of the field.

Nonetheless, some of the beliefs are dangerous and entice desperately ill people, such as laetrile and other bogus treatments for cancer (Carroll, 1994b) or the Anti-Vaccine Movement (see Vignette#3). The threats of such beliefs spurred the formation of skeptical groups like the Committee for Skeptical Inquiry and the Skeptic Society (See Vignette #2).

**Conclusions**

Folk beliefs go well beyond folk psychology. Dennett (2013) has suggested that folk psychology is “what everybody knows’ about their minds and the minds of others.” (p. 74). “Folk physics then, in parallel fashion, is the talent we have for expecting liquids to flow, unsupported things to drop, hot substances to burn us, …” (Dennett, 2013, p. 74). Both can be seen as a portion of a worldview (also termed Weltanschauung), one’s fundamental understanding of the entire world. Even though folk
psychology concerns our own thinking and the thinking of others, our worldview concerns that and our understanding of the entire universe. A person’s worldview is not a perfect match with another person’s worldview, or, for that matter, with an “objective” worldview—to which science aspires. A worldview is the way to understand and interpret the world that is shared with others via culture and language but also is personal.

A problem develops when a person receives information or behaves in a manner that is inconsistent (or dissonant) with his or her worldview. Tavris and Aronson (2007) suggested that the person will strive to make these two ideas consonant, possibly by maintaining his or her worldview and denying the contradictory. Thus if a person has invested in a worldview that includes a belief that natural foods are the healthiest, then the introduction Genetically Modified Organisms (GMOs) into the food chain is likely to be opposed. An example more closely related to Psychological Science is the research that indicates there is a biological component to homosexuality. For some, whose worldview includes the assumption that homosexuality is a sinful choice, this may lead to the rejection of the scientific view.

Benjamin (1986) asked “Why don’t they understand us?” and reviewed the history of American psychology’s public image. A number of anti-psychological-science events at the time spurred him to write the article, e.g., Psychological research was a favorite target of Senator William Proxmire’s Golden Fleece Awards, which pointed to government spending waste on irrelevant research. Benjamin suggested that there was public confusion concerning the nature of psychology itself, only fueled by the debates within psychology.

Clearly the problem is long standing, as this brief history is intended to show. It should not be surprising that a change from philosophical discourse to laboratory science a little more than 100 years ago signaled significant image problems for psychology. There was much baggage to carry from philosophy, from pseudo-sciences such as phrenology, from association with the occult and practices of spiritualism, and from the influx of psychoanalytic theory (Benjamin, 1986, p. 945).

Even though psychological scientists have assumed that psychology is a science, they are humans and subject to the foibles of folk psychology. Part of their folk psychology is what Olson (2009) termed “The head …the home for brainiacs.” He went on:

Academics live their lives in their heads, even if it results in sitting at their desks and staring at the wall all day, as I used to at times. ‘Think before you act’ are the words they live by. When they ask ‘Are you sure you’ve thought this through?’ they are reflecting a sacrosanct hallmark of their entire way of life (p. 18).

Devoting their lives to academic study and adjusting their worldview to accommodate that devotion, may reduce the value of “popularizing” the their communications. Generally speaking, academics are rarely encouraged and are often even discouraged from taking the time to communicate effectively with the general public via the media. However, psychological science may have a special responsibility in this regard. As Bayard and Hulme (2015) said, “the business of changing minds and attitudes lies very much at the core of psychology… There is surely potential for psychologically literate psychologists to apply some of these theories to solving the problem of psychology’s bad press” (pp. 95-96).

Actually convincing the general public is another story. Joe and Jane Doe will be personally biased as they sort through the biased information provided by the media. News from psychological science and science in general is not driven by a concern for public image but is data-driven and therefore subject to change as new data are collected. Perhaps this elusiveness is upsetting to those seeking an absolute and unchanging Truth. Even though there is an appreciation of science in
Jane and John’s worldview, it is difficult for psychological scientists to provide the knowledge they seek because it is a moving target. As Olson (2009) stated, “So I am in no way encouraging anyone to distort science, only encouraging scientists to help the rest of the world understand the crucial insights of their work by going the extra mile” (p. 162).

**Vignettes**

1. **Brain Scanning**

Since the inventions of the telescope and the microscope, technology has improved scientists’ capabilities to make observations well beyond human sensory limits. Indeed, the developments of science and technology have occurred hand-in-glove as basic scientific knowledge has encouraged new technologies and new technologies have expanded scientists’ abilities to collect data with more precision, greater reliability and validity. The scientific study of the human body, especially the brain, is no exception.

Beginning in ancient Greece, studies of the human anatomy and physiology relied on dissection carried out on cadavers (Ghosh, 2015). At the present time, human cadaveric dissection is used primarily as a teaching tool, rather than for basic research. Even so, cadaver dissection is being replaced with virtual dissection as anatomical databases become more detailed and available (Ghosh, 2015).

In studying the basic language functions of the brain, Paul Broca and Karl Wernicke used the deficit lesion method in which a patient’s symptoms, in these cases, deficits in language production and language reception, were noted while the patient was alive. Then a post-mortem analysis revealed which portion of the brain was damaged. The conclusion was that these damaged brain regions were implicated in normal language processing (Wise & Price, 2006.)

Other techniques for studying brain function were derived from necessary surgery that a patient had to undergo, such as the removal of a brain tumor. In order to remove the tumor, it was necessary to map the functions of neighboring tissue by stimulating those locations with an electrode while the patient was conscious, i.e., intraoperative brain mapping or “awake brain surgery” (Awake Brain Surgery, 2016.) Wilder Penfield was a pioneer using this technique (Snyder & Whitaker, 2013.) Other studies derived from surgery include the well-known split-brain work (Gazzaniga, 1967.)

Researchers used nonhuman species in order to explore brain function. Stimulation and destruction of different areas of the rat brain (and other species) was a common technique used to implicate the function of specific regions of the brain. For example, the effects of ventromedial hypothalamic lesions on eating caused rats to overeat (Duggan & Booth, 1986; Hoebel & Teitelbaum, 1966). Also with the development of the microelectrode, other researchers used single cell recordings in order to assess single brain cell function (e.g., Hubel & Weisel, 1960).

Modern techniques for studying the structure of living brains include Computerized Axial Tomography (CT or CAT scan) developed in the 70s. According to Satel and Lilienfeld (2013), “The technique uses high-density X-rays to capture images in slices and produces a three-dimensional model of the brain.” (p. 4). A decade later, magnetic resonance images (MRIs) allowed for a more precise picture of brain anatomy, including tumors, blood clots, and blood vessel deformations.

Technology has given researchers other tools for investigating brain functioning in living organisms. The electroencephalogram (EEG) amplifies the electrical activity of the brain via sensors on the
scalp of a participant. These recordings allow an analysis of patterns of brain activity, but on a very
global scale.

More specific information can be obtained by techniques developed more recently. Positron
Emission Tomography (PET) involves injections of radioactive glucose into participants so that the
gamma rays emitted by the brain cells’ consumption of the glucose while doing different tasks
could be measured. The logic is that the areas burning the most energy (i.e., “hot spots”) are
involved in the tasks.

The most preferred method of brain scanning is functional magnetic resonance imaging (fMRI)
which “… has higher spatial and temporal resolution and does not involve radioactive material.
(Satel & Lilienfeld 2013, p.5). It is possible to use the series of pictures from an fMRI scan to trace
the brain centers involved in performing a task over time and in healthy adult humans.

Directly measuring the activity of portions of the human brain is presumed to be better than
conscious self-reports, which are subject to personal biases of the participant and the scientist.
Perhaps brain scans are a means to find the “true cause” of human behavior. This was the
approach in using polygraph data in order to determine the honesty of an eyewitness (Bunn, 2012.)
Since the polygraph measures the physiological indicators of nervous excitement, a liar may not be
able to consciously control these indicators and thus the true state of affairs (lying) is measured by
bypassing the consciously controlled response. In a similar fashion, brain scans are assumed to
provide a picture of the underlying causes of behavior, when the participant is unwilling or unable
to report those causes.

The brain is said to be the final scientific frontier, and rightly so, in our view. Yet in many quarters
brain-based explanations appear to be granted a kind of inherent superiority over all the other
ways of accounting for human behavior. We call this assumption “neurocentrism”—the view that
human experience and behavior can be best explained from the predominant or even exclusive
perspective of the brain. From this popular vantage point, the study of the brain is somehow more
“scientific” than the study of human motives, thoughts, feelings, and actions. By making the hidden
visible, brain imaging has been a spectacular boon to neurocentrism. (Satel & Lilienfeld 2013, p.
xix).

Brain scanning techniques do have their limitations (Satel & Lilienfeld, 2013.) These techniques
provide correlational data, which then require more study to establish a cause-effect relationship
between brain activity and behavior. The claim that one portion of the brain is responsible for
performance of a particular task is an oversimplification. Most tasks are complex and attempts to
reduce them to simple components may be of limited value, if not incorrect. Many fMRI studies
have a small number of participants and the resulting brain picture is a heavily condensed and
altered composite of scans of the participants. Brain scan data may also be dependent on the
technique used. For example, different effects were obtained in a study scanning adolescents
depending on whether color or black-and-white photographs were used as stimuli (Dobbs, 2005.)

The advancement of fMRI techniques has caught the attention and imagination of the media and
the public. In a sense, these techniques have moved psychology more strongly into the realm of
“authentic science” in their eyes. Ikeda, Kitagami, Takahashi, Hattori, & Ito (2013) have found that
the inclusion of brain scan images in an article results in undergraduates’ perception of greater
credibility in comparison to the same article without the images. Beck (2016) suggested that such
images and references to the brain are indicative of the general public’s confidence in biological
data.
The growth of fields with the prefix “neuro-” is indicative of the wave of popularity (e.g., neuroscience, neurolaw, neuroeconomics, neuromarketing, neurohistory, etc.) However, as is the case with many new technologies, the claims and conclusions must be cautiously reviewed. Even though psychological science may ride the wave of popularity in the public’s eye, the actual science may, in fact, be relatively weak.

2. James “The Amazing” Randi

When the Fellows and the Scientific Consultants of the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP) were polled in 2000, James Randi was voted as the Outstanding Skeptic of the Twentieth Century. The Top 10 list included, in order, James Randi, Martin Gardner, Carl Sagan, Paul Kurtz, Ray Hyman, Isaac Asimov, Philip J. Klass, Bertrand Russell, Harry Houdini, and Albert Einstein. This eclectic group of distinguished authors has devoted a substantial portion of their careers to the education of the general public concerning science, and the value of recognizing pseudoscience and outright bunk (Skeptical Inquirer, 2000.)

CSICOP (presently named Committee for Skeptical Inquiry, CSI) was founded by Paul Kurtz in 1976 as a non-profit organization that “… promotes scientific inquiry, critical investigation, and the use of reason in examining controversial and extraordinary claims.” (Skeptical Inquirer, 2000.) Notable psychologists among the CSI Fellows include Susan Blackmore, Thomas Gilovich, Ray Hyman, Scott O. Lilienfeld, Elizabeth Loftus, Steven Pinker, Anthony Pratkanis, B. F. Skinner, Keith Stanovich, Carol Tavris, and Richard Wiseman. (B. F. Skinner was a founding member.)

CSI is headquartered in Amherst, New York. Along with its west coast twin organization, The Skeptic Society (founded by Michael Shermer in 1992), has the goal of communicating good science to the general public and resisting the spread of irrational beliefs. The target audience of all of their printed and electronic publications is the general public. But for some in the ivory towers of science, having this target audience, is denigrated and thought to reduce one’s value as a scientist. In discussing the problems that Carl Sagan had in being accepted into the National Academy of Sciences, Olson (2009) reported “Texas A&M University chemist referred to Sagan’s involvement in the popularization of science as ‘symptomatic of an inadequacy in doing science.’” (p. 153.)

Nonetheless, CSI and the Skeptic Society persist in providing scientific analyses of claims that regularly appear in the media. My own interest in skepticism was sparked by regular student questions concerning the paranormal and “scientific” evidence for extrasensory perception. Fortunately, these groups provide readily available information that is accessible to the public and thus are very helpful in composing rational responses.

James “The Amazing” Randi is a founding member of CSICOP, magician, skeptic, and de-bunker of claims of the paranormal. He is an author, founder of the James Randi Educational Fund, a 1986 MacArthur Fellow, and a showman who has appeared on the Johnny Carson Show multiple times.

He has followed in the tradition of Harry Houdini, the great escape artist, who had little patience with spiritualists who claimed to have special “powers,” especially the ability to talk to the deceased. Houdini, an accomplished escape artist and magician, had no patience with persons who claimed to have paranormal abilities and publicly exposed them as cheap tricksters.

Randi’s reputation was made in a similar manner, beginning with exposing Uri Geller, a self-proclaimed psychic. His specialty was bending spoons, supposedly with his mind, which Randi easily replicated. The culmination of the expose occurred on an episode of The Tonight Show. Johnny Carson was an amateur magician and consulted with Randi before Geller made an appearance. Under Randi’s guidance the Tonight show staff was able to configure the materials in a way that
would foil the usual methods of a stage magician. Geller was not “feeling strong” that evening and was unable to do his psychic tricks (Randi, 1974).

Since Randi was a professional magician, he was bound by the magician’s code that states a magician will *not* reveal the secret of any illusion to a non-magician. However, in many cases, Randi’s knowledge of how stage magic works is essential to his debunking efforts. So in several instances, he replicated the psychic tricks using stage magic techniques and explicitly stated that there was no psychic power involved. However, in some demonstrations, the illusions were so good that that observers still insisted that it involved paranormal ability that Randi did not know he had. One such believer was Senator Claiborne Pell (Gardner, 2000, p. 178.)

James Randi was a renegade, who did not avoid publicly embarrassing promoters of the paranormal. He trained two confederates, Steve Shaw and Michael Edwards, to infiltrate a research project (Project Alpha) at Washington University. The project was funded for $500,000 by paranormal sympathizer, James S. McDonnell, board chairman of McDonnell Douglas Corporation. After convincing the principal investigator, physics professor Peter R. Phillips, that they were the real thing, Shaw and Edwards developed variants of stage magic techniques to fool the experimenters. Furthermore, Randi had contacted the researchers during this time and suggested some procedures to ensure proper testing. Only after the protocols were instituted, the researchers claimed that the Shaw and Edwards had somehow lost their powers. The hoax was revealed by Randi in 1981.

If Project Alpha resulted in Parapsychologists (real parapsychologists!) awakening to the fact that they are able to be deceived, either by subjects or themselves, as a result of their convictions and their lack of expertise in the arts of deception, then it has served its purpose. Those who fell into the trap invited that fate; those who pulled back from the brink deserve our applause (Randi, 1983).

Randi was also at the center of another hoax, wherein he trained Jose Alvarez to channel a 2,000 year old spirit named “Carlos.” Alvarez was able to convince major news services in Australia of his abilities in 1988. “Even after it was all revealed on the Australian Sixty Minutes TV show, a week after the Opera House appearance, many continued to believe in "Carlos" and his uninspired messages.” (Carroll, 1994c).

For several years, beginning in 1964, Randi has offered a cash award to anyone who could prove, under proper scientific testing, they have paranormal powers (Carroll, 1994d; Higginbotham 2014.) The award grew to $1,000,000 and is still offered today, with some new conditions. (Apparently too much time had been spent testing some rather eccentric claims.) The applicant must have had some media recognition of their power and an endorsement of an academic nature. JREF has also made specific challenges to well-known psychics to be tested scientifically. No one has taken up the offer.

Many beliefs within folk psychology are paranormal, i.e., outside the realm of scientific testing. Some beliefs are dangerous, for example, the belief that vaccines cause autism. (See the website, [http://whatsteharm.net](http://whatsteharm.net) for examples of dangerous beliefs.) In testing the paranormal, even experienced scientists can be fooled and are subject to their own wishful worldview. As The Amazing Randi has shown, being a scientist is not enough, a magician’s skills in deception are an important tool in evaluating claims—especially claims of the paranormal.

There are other apparent dangers for a scientist to try to communicate good science to the general public. The cost to one’s reputation within the scientific community, the difficulty in communicating with the general public in clear terms, the intrusion of one’s own beliefs into the
evaluation of claims, and the lack of expertise in common deceptive practices (stage magic) make it difficult for a wide-open channel of communication to exist. Nonetheless, CSI and the Skeptic Society are bridging the gap.

3. The anti-vaccination movement

Few events have had the negative impact on the perception of medical, psychological, and public health science as the publication of Wakefield, Murch, Anthony, Linnell, Casson, Malik, Berelowitz, Dhillon, Thomson, Harvey, Valentine, Davies, & Walker-Smith (1998). The authors claimed to have found a link between the standard Measles-Mumps-Rubella (MMR) vaccine and autism. This article, along with the apparent increase in the incidence in the rate of autism, sparked a firestorm of an emotionally-driven controversy that included a rejection of scientific evidence concerning vaccines. It is unclear what the net effects of the these events will ultimately be, but, in some circles, it has lead to outright rejection of one of the most successful, science-based public health programs in history, i.e., vaccination of children against disease.

Even though the Wakefield et al (1998) was retracted by the Lancet and Wakefield’s data and ethics as a scientists have been discredited, the negative effects of the suggestions offered in the article has been long lasting. There is uniform support from professional scientists for the conclusion that vaccines are safe and not related to the incidence of autism in young children, but to no avail in much of the public’s opinion. There are several reasons for this outcome.

Lilienfeld & Arkowitz (2007) reported that there was a 657% increase in the nationwide rate of autism from 1993 to 2003. Indeed, that increase became a major concern for public health officials, who feared an epidemic that might be caused by environmental agents, such as “…antibiotics, viruses, allergies, enhanced opportunities for parents with mild autistic traits to meet and mate, and … elevated rates of television viewing in infants.” (Lilienfeld & Arkowitz, 2007, p. 82). One suspect for the source of the epidemic was the standard vaccination regimen (including the MMR vaccine) for infants, which usually preceded the onset of observable symptoms of autism. Additional circumstantial evidence was that the MMR vaccine included a preservative, thimerosal, which contains mercury.

The timing was right for the Wakefield et al. (1998) article. Other media events, such as the publication of the book, Evidence of Harm, by David Kirby (Kirby, 2005), fueled the fires of suspicion in the public’s eyes.

Measles infections there are at their highest since the disease was supposedly eradicated. The reason for this is that the number of people vaccinated against measles has been falling. More and more parents have been refusing to immunise their children. The influence of a loose group of fringe campaigners against immunisation - "anti-vaxxers", as they're known - has been spreading. And with it, disease. Right now in Seattle, Washington, in the United States, 80 to 88% of children are immunised for polio. But you need a 95% rate of polio immunisation to keep up herd immunity. (BBC.com, 2015)

It seems apparent that public opinion and the opinion of the scientific community can diverge wildly. Gernsbacher, Dawson, and Goldsmith (2005) observed:

Several national media have erroneously concluded that a set of data from “confirms the autism epidemic,” and the largest autism advocacy organization in world has expressed alarm over astronomical percentage increases in the number of autistic children served in the public schools since 1992. However, no sound scientific evidence indicates that the increase in the numbers of diagnosed cases of autism arises from anything other than intentionally broadened diagnostic
criteria, coupled with deliberately greater public awareness and conscientiously improved case finding. How did public perception become so misaligned from scientific evidence? (p. 55)

Gernsbacher et al. (2005) reviewed three errors stemming from the misinterpretation of changes in the scientific classification of autism and the resulting data. They described how the diagnostic criteria for autism changed from the 1980 DSM-III to the 1994 DSM-IV, from the six mandatory and strictly defined criteria to 16 more loosely defined criteria, only 8 of which need to be met. They also showed how evidence from the M.I.N.D. Institute (2202) did not support their conclusion that there was “no evidence that a loosening in the diagnostic criteria has contributed to the increased number of autism clients served by [California DDS] Regional Centers.” (p. 5) The unwarranted conclusions of the study made national headlines and continues to fan the flames of public opinion.

The third error derives from the mandated reporting (Individuals with Disabilities Education Act) by the schools of the number of children with disabilities served. These data have continued to show large increases in the number of students with autism. Gernsbacher et al. (2005) argued that it is usual to see a gradual increase in compliance with a federal mandate by state school systems. State departments of education have their own diagnostic criteria to determine eligibility for state services. States will gradually improve their reporting and it may take several years for the data to stabilize.

The Gernsbacher et al. (2005) arguments largely stem from a critique of data definition and data analysis, which require a degree of expertise in science to understand. But there are other reasons why the some of general public has accepted an anti-vaccination position. Achenbach (2015) suggested there is a general suspicion of science in general:

We live in an age when all manner of scientific knowledge – from the safety of fluoride and vaccines to the reality of climate change – faces organised and often furious opposition. Empowered by their own sources of information and their own interpretations of research, doubters have declared war on the consensus of experts.

Personal worldviews (e.g., natural products are better than “artificial” products, the “good old days” were better) may cause some of the public to perceive these science-based ideas as too progressive and threatening to the status quo—even when some ideas, such as vaccines, have been around for decades. The resistance to science can also be attributed to the attention-grabbing and heart-breaking stories of desperate parents of children who have become autistic after a vaccination had been administered. According to Olson (2009), it is difficult for a scientist’s cerebral approach to compete with stories that appeal to the heart and the gut.

According to Heidi Larson (BBC.com, 2015,) "Additionally there's all this focus on the public understanding the science. I think we're not focusing enough on scientists understanding the public. We can't keep finger pointing at the public and think they're the issue."

References


The Psychology of Close Relationships: A Brief but Industrious History
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I received my graduate training in the psychological study of close relationships after it emerged as a promising subfield. This fortuitous timing afforded me the opportunity to work with a number of researchers who were influential in shaping the development of this fascinating discipline. Writing this chapter reminds me that merely a few decades ago relationship science was a burgeoning area of research with considerably more questions than answers. The current state of unyielding momentum is the result of the pioneering efforts of researchers who bridged interdisciplinary interests to forge this new area of study. In this chapter I highlight many of the important developments within the history of close relationships research. I also draw attention to aspects of the current culture that promise to expand psychologists’ understanding of this captivating area of study.

As someone who dedicates her career to the shared interests of teaching and relationship science, it is my goal to summarize and to pay homage to the researchers, findings, and world events that transformed the psychological study of close relationships. Further, I hope to provide other educators with an approachable format for understanding and disseminating the brief but industrious history of this intriguing subfield.

Ancient History

Relationships are as old as time, even if the psychological study of them is not. In fact, archeological findings attest to the existence, if not importance, of romantic relationships to our prehistoric ancestors. These include cave drawings and carvings believed to date back tens of thousands of years (Morriss-Kay, 2010). Although not the first of its kind, the oldest known relationship artifact is an ancient fertility sculpture called “Venus of Hohle Fels” (Conrad, 2009). Carved from mammoth tusk, this figurine is believed to be nearly 40,000 years old and appears to celebrate the female form. Given its sexual symbolism, it is possible this statuette documents some of the earliest evidence of the relationship phenomena that would later come to direct modern day close relationships research.

Since that time, relationships remained prominently positioned within the hearts and minds of theorists, artists, and laypeople alike. For instance, in the fourth and fifth centuries BCE, philosophers such as Socrates, Plato, and Aristotle espoused the importance of relationships in shaping humanity. While Aristotle spoke of the romance inherent in relationships (i.e., “Love is composed of a single soul inhabiting two bodies.”) (Aristotle, trans. 1853, p. 118), Socrates is believed to have quipped more playfully about marriage. Although not among the formal writings of Plato or Xenophon, Socrates has been credited by some to have joked, “By all means, marry. If you get a good wife, you'll become happy; if you get a bad one, you'll become a philosopher.” The scientific study of interpersonal dynamics would not emerge for millennia, but these great thinkers were correct in identifying important areas of investigation (i.e., love and relationship satisfaction). And while philosophical perspectives on romance are subjective, their continued presence underscores the significance that relationships play in shaping the human condition. Moreover, philosophical theorizing illuminates the historical relevance of relationships by highlighting how romantic unions serve to shape (and in turn are shaped by) the cultures in which they take place.
Religious doctrines also serve as repositories of relationship theory, readily dispensing their best practices. For instance, the Judeo-Christian tale of Adam and Eve (Genesis 2-3, New Revised Standard Version) documents the centrality of romantic relationships to human life. Positioned at the center of the creation story, romantic unions help forge both personal identity and religious ideology. For individuals of this theological leaning, the formation (and fate) of humanity is inextricably linked to interpersonal dynamics. Further, the Ten Commandments house many tenets related to relationship success. As urged by Moses, people should honor their mother and father and refrain from adultery (Exodus 20:1-17, New Revised Standard Version). Although relationship science had yet to examine these dictates, modern research on the psychological study of close relationships reveals that they were quite prophetic. Indeed, close relationships fare better when partners respect one another and when trust is paramount (Larzelere & Huston, 1980; Reis, 2013; Rempel, Holmes, & Zanna, 1985; Simpson, 2007).

More recently, plays, poems, and music mirrored relationship life for audiences. Celebrated examples of this come from Shakespeare. As it has for centuries, his work challenges people to ruminate over relationship complexities, ranging from attraction to heartache. Here again, the advocated love lessons were merely speculative; however, Shakespeare’s commentary on relationship life remains surprisingly insightful. His skillful tale of Romeo and Juliet as star-crossed lovers urged audiences to heed the tempestuous and unpredictable nature of young love and beware the consequences of overbearing parents (Shakespeare & Durband, 1985). Modern psychological studies provide support for both of these recommendations (Driscoll, Davis, & Lipetz, 1972; Regan, 1998, 2004). Similarly, Shakespeare speaks to audiences about the impact of personal insecurities and relationship vulnerabilities through his depiction of Othello and Desdemona (Shakespeare & Sanders, 1984). Their portrayal as lovers torn apart by doubt and mistrust forecast the importance that emotional stability and attachment security play in relationship success. As recent research shows, even relationships with far less meddling by ne’er-do-well acquaintances can deteriorate under the pressures of self-imposed uncertainty and doubt (Hazan & Shaver, 1987; Mikulincer & Shaver, 2003, 2007).

Despite eons of stories, theories, and rules about relationships (of which I have only highlighted a few), it was not until recently that the study of close relationships began to emerge as an organized area of investigation.

**Modern History**

**Interdisciplinary Origins**

Given people’s inherent fascination with romantic relationships and the fact that they are critical to fostering human existence (Baumeister & Leary, 1995; Darwin, 1859, 1871; Fisher, 1995; Fletcher, Simpson, Campbell, & Overall, 2015; Reis & Collins, 2004; Reis, Collins, & Berscheid, 2000), it is hard to believe that the scientific study of close relationships is a relatively new area of investigation. Approximately a century and a half ago, researchers from a number of disciplines within the physical and social sciences began to discuss close relationships as central to the understanding of human behavior (Perlman & Duck, 2006). Although it would be decades before theses diverse works would solidify into a coherent area of study, I will draw attention to some of the early contributions. For instance, Darwin (1859) proposed that the evolution of a species takes place through generations of natural selection. For humans this process necessitates relationship behaviors, like pair bonding and mating. Nearly two decades later, he expanded his understanding of evolution to incorporate theories about the origin or human emotions (Darwin, 1872). These include the expression of inherently relational feelings, such as love and devotion. Even in
postulating theories of evolution, Darwin could not escape the significant role that close relationships play in human development. His theories serve as the foundation for modern day evolutionary psychology, which remains a driving force in relationship science. I will expound on this development later.

Perhaps the first psychologist to reflect on the importance of relationships was William James (1890). Deemed a functional psychologist, romantic relationships were not central to his theories. However, James discussed the role of close relationships in the experience of happiness as well as one’s understanding of the self. Not long after that, Freud placed relationships at the center of his research and touted the importance of close relationships to human functioning. His psychoanalytic theory postulated that the parent-child relationship played a critical role in the development and expression of personality (Freud, 1899). Freud believed that these dynamics set in motion characteristics that would operate throughout life. It was the way that people navigated their desires and vulnerabilities that predicted how they would fare in adult romantic relationships. For instance, Freud claimed that during the phallic stage of development children feel attraction towards their opposite-sex parent and romantic jealousy towards their same-sex parent (Freud, 1932). For him, a critical predictor of prosperous adult relationships was the successful resolution of this and other developmental crises. Freud also proposed that the unconscious mind was a storehouse for anxiety-provoking cognitions, many of which pertain to unsatisfactory relationship experiences. Although Freud’s theory is no longer a central driving force in the understanding of close relationships, this work inspired later empirical investigations on related topics, including the understanding of attachment theory, discussed later.

Another researcher early to answer the call of relationship research was the sexologist, Alfred Kinsey (Kinsey, 1953; Kinsey, Pomeroy, & Martin, 1948). His extensive and controversial investigations involved interviews and observations examining the sexual practices of American men and women. Although sexuality makes up only a small portion of the subfield of close relationships, Kinsey’s pivotal work paved the way to future understandings of sexuality and sexual orientation. This line of research also focused investigators on the role of physical intimacy in relationship satisfaction. Interestingly, in considering the multi-directional impact that research has on culture (and vice versa), it is likely that Kinsey’s work was not only impacted by the time period in which it was conducted, but also its publication forever changed society, possibly ushering in the American Sexual Revolution of the 1960s.

**Finding a Home within Social Psychology**

A number of disciplines, including anthropology, biology, communication, family studies, philosophy, psychology, and sociology, made important contributions to the collective of knowledge on romantic relationships. However, the study of close relationships ultimately found its home within the field of psychology. And despite Freud’s emphasis on interpersonal dynamics in shaping clinical and personality psychology and Kinsey’s focus on human sexuality as the impetus for relationship thoughts and behaviors, close relationships research planted its roots within the subfield of social psychology (Perlman & Duck, 2006; Reis, 2012).

Social psychology aims to understand the impact of a given situation on people’s thoughts, emotions, and behaviors. Reciprocally, it also investigates the influences people have on their social environments (McGarty & Haslam, 1997). Arguably, individuals are the most salient and influential aspects of any social situation. Therefore, attention quickly turned to understanding the nature of close relationships as these relationships impact cognitions, emotions, and behaviors. Within the subfield of social psychology, one of the first researchers to turn his attention to romantic relationships was Leon Festinger. In a now famous study examining the principle of
proximity on attraction, he and colleagues found that the closer individuals lived to each other, the more they liked one another (Festinger, Schachter, & Back, 1950). In this study, conducted in a married student housing complex at Massachusetts Institute of Technology, physical proximity was the single most important predictor of friendship. Participants reported that approximately two-thirds of their friends not only lived in the same dormitory but also on the same floor. And, the likelihood of establishing a relationship appeared to decrease as the physical distance between residences increased. Based on Festinger’s work, unraveling the mysteries of liking and attraction could rest significantly on one’s location at the time he/she seeks a partner. Proximity remains an important factor in the current study of attraction, leading to recent investigations examining the role of not just physical proximity, but also virtual proximity (i.e., the degree of closeness between individuals using communication technologies) in predicting attraction online (Levine, 2000; Moore & Craig, 2010).

Newcomb was another influential social psychologist who helped lay the groundwork for the study of close relationships. Much like Festinger, his work investigated initial attraction; however, Newcomb’s efforts focused on similarity rather than proximity. Through an investigation of roommates at the University of Michigan, he was able to show that attitude similarity predicted liking. His work revealed that friendships develop between individuals who have the most in common (Newcomb, 1956, 1961). Newcomb’s findings do not negate those of Festinger, but together they shed light on the complexity of liking and attraction. As I will discuss later, both proximity and similarity continue to reign as important predictors of attraction and partner selection even when examined with the more sophisticated research methodology afforded by modern science.

Coming Into Its Own As an Area of Investigation
By the 1960s, relationship science was on the rise, and researchers from different disciplines, as well as from different subfields of psychology, began to organize and share their findings on relationship phenomena. Building from the foundation provided by researchers such as Festinger and Newcomb, the study of interpersonal attraction took center stage. During this time one researcher who emerged preeminent was Byrne (Perlman & Duck, 2006). His work extended previous findings by showing that attraction resulted from rewards (Clore & Byrne, 1974), particularly those associated with similar others (Byrne 1961; Byrne, London, & Reeves, 1968; Byrne & Nelson, 1965). Across a number of investigations, his work revealed that participants reported greater liking for those they believed shared important similarities. Byrne’s work was also notable because it helped to usher in a new age of research built on the use of experimental manipulations and laboratory settings. His use of deception in the form of feedback about bogus interaction partners, coupled with the use of cost-effective self-report rating scales as assessments, set the stage for the many experimental studies testing relationship phenomena that would follow (Perlman & Duck, 2006; Reis, 2012).

Another important set of relationship researchers during the 1960s and 70s was the team of Berscheid and Walster (later known as Hatfield). This research duo investigated a number of factors linked to interpersonal attraction, including the role of physical attractiveness in liking. Long believed to be an important aspect of attraction, these researchers were some of the first to empirically demonstrate the power of physical appearance in shaping others’ perceptions. In a classic study looking specifically at partner selection, Walster and colleagues (Walster, Aronson, Abrahams, & Rottman, 1966) randomly paired potential romantic partners for a dance at the University of Minnesota. Their results revealed that physical attractiveness predicted liking and desire for future interaction. In an unexpected twist, factors initially anticipated to be important
for partner selection, including intelligence, personality, and similarity, did not appear to predict attraction. Their work revealed that people hold a host of positive beliefs about attractive individuals that lead them to behave preferentially toward “beautiful” others (Dion, Berscheid, & Walster, 1972). Interestingly, this “beauty bias” was demonstrated even in non-romantic situations. As if these scientific contributions were not enough, Berscheid and Walster (1974) are also responsible for psychologists’ understanding of passionate attraction. The pair hypothesized that passion is the result of physiological arousal coupled with the belief that another person is the cause of that arousal. This discovery informed the study of romantic love by providing a tangible and scientific explanation for passion, which is often attributed to more mystical and mysterious sources. Further, it helped answer the interesting question of why people may feel passionately towards attractive others with whom they have shared an arousing experience (i.e., misattribution of arousal) (Dutton & Aron, 1974).

Notably, Berscheid and Walster represented another trend emerging within the subfield of close relationships during the sixties and seventies: an increasing number of women investigators. This diversification of relationship scientists was no doubt linked to the American Feminist Movement that was occurring at that time. Bolstered by changing gender roles, which encouraged women to pursue their career ambitions, women flocked to the workforce. The field of relationship science was no exception, and this rise in women researchers ushered in new areas of investigation. Perhaps more than ever before, this period demonstrated the influence that culture imparted on the direction and development of close relationships research. It would not be the last time that societal changes would serve as the backdrop and transformative force for this growing subfield.

**The Heyday of Relationship Science**

By all accounts, the study of close relationships hit its stride around the start of the 1980s (Perlman & Duck, 2006; Reis, 2012). Atop the footing afforded by previous decades, there was rapid growth in the number as well as type of research investigations. At this time, studies began to shift away from initial attraction to the study of sustained unions, examining the entire spectrum of a relationship, from inception to dissolution.

An important extension of close relationships research during this time of expansion was Kelley and Thibaut’s (1978) Interdependence Theory. Building from earlier social exchange models (Thibaut & Kelley, 1959), this theory postulates that relationship partners should engage in a cost-benefit analysis, seeking unions that maximize desirable outcomes. This model hypothesizes that the extent to which individuals’ current relationship outcomes are better than their level of expectancy (i.e., Comparison Level, CL), they feel satisfied. However, when outcomes fail to meet or surpass expectations, individuals report dissatisfaction. Similarly, the model postulates that people’s dependence upon their union is a function of their perceived alternatives to that relationship (i.e., Comparison Level for Alternatives, CLalt). Importantly, the interdependence framework demonstrates how one’s own relationship outcomes are inextricably linked to that of their partner. This line of research stimulated numerous extensions, including those related to relationship commitment (Rusbult, 1980; Rusbult, Martz, & Agnew, 1998), which will be discussed shortly.

As noted earlier, attachment theory is a cornerstone within the study of close relationships. Its foundation lies in a number of areas of psychology, including Freud’s work in personality psychology (1932) and Bowlby’s work in developmental psychology (Bowlby, 1969, 1973, 1980). Hypothesized by Bowlby to be the mechanism by which individuals form social connections, attachment was originally studied in infant-caregiver relationships. Bowlby believed that the relationship a child had with his/her primary caregiver set in motion working models that would continue to guide social interactions throughout life. During the 1980s, Hazan and Shaver (1987)
expounded on this original theory by proposing that the parent-child attachment sets the stage for attachment to adult romantic partners. That is, securities and insecurities that emerge within the context of childhood relationships continue to persist via mental models and direct similar beliefs, behaviors, and relationship outcomes decades later in the context of romantic relationships. This pivotal and ground-breaking research generated a myriad of studies demonstrating that attachment security (in the form of perceptions of one’s self-worth and others’ trustworthiness) impacts almost all areas of relationship functioning (Cassidy & Shaver, 2008).

Another important contribution to close relationships research during this time came from evolutionary psychologists. These psychologists applied tenets of evolutionary biology to relationship phenomena (Barkow, Cosmides, & Tooby, 1992). Build on the belief that passing one’s genes to the next generation is a primary motivation in human life, these researchers focused on relationship strategies that facilitate genetic fitness. Championed by Buss (1985), studies within this domain examined sex differences in a number of relationship dynamics, including parenting and partner selection. For instance, given females’ larger investment in reproduction and childcare, researchers postulated that they should be more discriminating in sexual selection (Trivers, 1972). Building from this differential parental investment, evolutionary psychologists hypothesized gender specific partner selection strategies (Buss & Barnes, 1986; Kenrick & Trost, 1997). In particular, males should seek partners who are reproductively capable (i.e., those who show signs of health and youth). Females, on the other hand, should seek out partners who can provide for them and their offspring. Accordingly, females should prioritize characteristics such as wealth, status, and power. Although still somewhat controversial as an approach to partner selection, evolutionary psychology continues to excite and inspire relationship researchers. For instance, Baumeister and Leary’s (1995) postulation of a fundamental need to belong remains a preeminent explanation for why individuals seek out and participate in relationship life. These theorists believe that humans evolved a need for group membership and those with social connections ultimately fare better both physically and psychologically (Hawkley & Cacioppo, 2013; Kern, Della Porta, & Friedman, 2014; Leary & Miller, 2012).

**Contextual changes.** Perhaps one of the most influential contextual shifts for relationship science to emerge around the 1980s came in the form of improved opportunities for training and collaboration. Numerous graduate programs appeared throughout the nation specifically focused on the psychological study of close relationships. In this new context, researchers no longer had to study relationship dynamics as a research program that existed outside of their “real” area of investigation (Pearlman & Duck, 2006). In an effort to support this growing subarea and facilitate communication and collaboration amongst likeminded professionals, conferences and journals geared towards relationship scientists began to emerge. In 1982, the inaugural International Conference on Personal Relationships was held in Madison, Wisconsin, marking the first professional meeting of its kind (Pearlman & Duck, 2006). Then, in 1984 the International Society for the Study of Personal Relationships (ISSPR) was developed. This organization met annually, allowing relationship scholars to network and share discourse. Similarly, in 1987 the Iowa Network of Personal Relationships (INPR) emerged and held its own regular meetings. Eventually, these two influential organizations united, and in 2002, ISSPR and INPR merged to form the International Association for Relationship Research (IARR), which remains the preeminent meeting of relationship scientists from all disciplines. Mirroring the development of conferences, this time period saw the emergence of academic journals focused on disseminating research on relationship phenomena. In 1984, the first journal for the subfield, Journal of Social and Personal Relationships, appeared. A decade later a second journal with this shared focus called Personal Relationships
emerged. Both remain critical in publicizing important advances within close relationships research today.

Another trend of this time was the growing complexity of relationship research. Marked by rapid growth, this period saw the use of more advanced research methodologies and increasingly sophisticated statistical analyses. Both sets of new tools yielded more thorough and revealing findings about relationship phenomena. For instance, the increasingly accessible and available nature of technology (e.g., recording equipment) aided in data collection. This emerging technology led to the ability to record and re-watch participants’ interactions. As a result, researchers designed sophisticated coding to more thoroughly investigate behavioral tendencies. Recording technology also facilitated collaboration by research teams separated by time or location. Investigators enjoyed the newfound ability of having participants watch and evaluate recordings of themselves and their partners, which gave insight into cognitive processes used during their interactions. The resultant dyadic analyses allowed for investigations that examined the impacts of each partner on their relationship and each other. Many of the findings that resulted were pivotal, as they tackled previously unanswerable questions.

Another contextual element that impacted the development of close relationships research was the increasing prevalence of divorce within American culture (Orbuch & Hagan, 2009). The divorce rate reached an all-time high in the 1980s, and the resultant relationship landscape was fraught with the negative physical and psychological consequences of grief and loss (Lucas, 2005). Many researchers responded by examining factors associated with the breakdown of romantic relationships. These included dysfunctional cognitions about marriage (Amato, 2009), as well as predictors of divorce (Houston, 2009; Karney & Bradbury, 1995; Levinger, 1976). The 1980s also ushered in confusion and frustration associated with strained parent-child and co-parenting relationships. Many researchers responded to these changes by focusing their relationship studies on the consequences of divorce and how to cope with failed unions (Amato, 2010; Harman, Leder-Elder, Biringen, 2016; Lansford, 2009). These lines of investigation developed into active areas of research that continue to inform the current direction of this subfield.

Current State of Affairs

I attended graduate school in the 2000s, when many well-established research programs existed throughout the nation. In fact, when choosing a location for postgraduate work, it felt more like selecting a research family, as graduate students received training within what had by that time become specific research traditions. I highlight a handful of successful research labs that continue to generate innovative ideas as well as inspired relationship researchers who direct the current state of the subfield.

One of the most productive research laboratories during my formative, graduate school years was housed at the University of North Carolina at Chapel Hill, led by Caryl Rusbult. Rusbult built from Kelley and Thibaut’s (1978) Interdependence Theory and developed the Investment Model of Commitment (Rusbult, 1980, 1983). From her camp generations of researchers emerged that went on to tackle issues like romantic attraction (including a recent, in-depth investigation of the cultural phenomenon of speed-dating [Finkel, Eastwick, & Matthews, 2007]), narcissism (Campbell, Foster, & Finkel, 2002), and commitment processes (Arriaga, Reed, Goodfriend, & Agnew, 2006), such as accommodation (Finkel & Campbell, 2001; Rusbult, Bissonnette, Arriaga, & Cox, 1998), forgiveness (Finkel, Rusbult, Kumashiro, & Hannon, 2002), and the Michelangelo Phenomenon (Rusbult, Finkel, & Kumashiro, 2009), which holds that partners help shape each other in ways that promote growth towards each’s ideal self.
Another laboratory that remains prolific in its generation of relationship research is anchored by Harry Reis at the University of Rochester. His work informs psychologists’ understanding of interpersonal dynamics such as intimacy (Reis, Clark, & Holmes, 2004), attachment (Carmichael & Reis, 2005; Reis, 2006; Reis & Patrick, 1996), and relational outcomes on health and well-being (King & Reis, 2012; Reis & Franks, 1994; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). Like Rusbult, Reis inspired a number of investigators that continue to expand the field of relationship science. Such recent investigations explore appetitive and aversive processes (Gable & Reis, 2001, 2010; Gable, Reis, Impett, & Asher, 2004), emotional regulation (Algoe, Haidt, & Gable, 2008; Caprariello & Reis, 2011), and a recently revitalized interest in the role of familiarity in attraction (Finkel et al., 2015; Reis, Maniaci, Caprariello, Eastwick, & Finkel 2011).

Housed at the State University of New York at Stoney Brook is yet another pivotal research program. Under the direction of Art and Elaine Aron, this team’s instigations center on the cognitive overlap between the self and other in romantic relationships (Aron & Aron, 1986; Aron, Aron, & Smollan, 1992; Aron, Aron, Tudor, & Nelson, 1991). From this foundation, their research has forging an enduring legacy that includes advancing psychologists’ understanding of self-expansion (Aron, Lewandowski, Mashek, & Aron, 2013; Aron, Norman, & Aron, 1998; Fivecoat, Tomlinson, Aron, & Caprariello, 2015). Related studies build form this platform to demonstrate the beneficial role of shared participation in self-expanding (i.e., novel and arousing) activities on a number of indices, including relationship quality (Aron, Norman, Aron, & Lewandowski, 2002; Aron, Norman, Aron, McKenna, & Heyman, 2000).

At Yale University, Margaret Clark anchors a long-standing research program that examines interpersonal processes involved in supportive relationships. An important contribution stemming from her work is the distinction between communal and exchange relationships (Clark & Mills, 1979; Clark, 1984; Clark, Mills, & Corcoran, 1989), as well as the impact of such norms on relationship functioning (Clark, Lemay, Graham, Pataki, Finkel, 2010; Lamay & Clark, 2008; Lemay, Clark, Feeney, 2007). Understanding these governing norms has facilitated research on emotional expression (Clark, Fitness, & Brissette, 2001; Lemay, Overall, Clark, 2012) and furthered psychologists’ understanding of the impact of self-esteem on partners’ perceptions (Graham & Clark, 2006; Lemay & Clark, 2009).

The research by Benjamin Karney, now at the University of California at Los Angeles, examines how relationships change over time, focusing specifically on maintenance mechanisms that may facilitate relationship success (Karney & Bradbury, 1995, 2000; Karney & Coombs, 2000; McNulty & Karney, 2001; McNulty, O’Mara, & Karney, 2008). His longitudinal efforts, along with those of his former students, have furthered psychologists’ understanding of the ways relationships are impacted by environmental stressors, including work stress and poverty (Buck & Neff, 2012; Karney & Neff, 2013; Neff & Karney, 2004), as well as substance use/abuse (Shorey, Stuart, McNulty, & Moore, 2014).

Finally, outside of the United States, important contributions came from John Holmes at the University of Waterloo. His efforts focus on interpersonal trust (Holmes & Cavallo, 2007; Holmes & Rempel, 1989, 1992) and the influence of partners’ expectations on relationship functioning. Together with former students, this line of research shows that individuals who hold “positive illusions” about their relationship partners often fare better (Murray, Holmes, & Griffin, 1996). Relatedly, his collaborative efforts gave rise to the risk-regulation model that posits a delicate balance between seeking connection and minimizing rejection throughout relationship life (Murray, Derrick, Leder, & Holmes, 2008; Murray, Holmes, & Collins, 2006).
This list of relationship researchers is not meant to be exhaustive. It identifies merely a handful of the influential psychologists actively immersed in the field of close relationships. Many others have and will continue to make meaningful contributions to this booming area of investigation.

**Cultural Influences**
As discussed previously, contextual history has played a role in the development of close relationships research and continues to shape the current direction of this subfield. The past few decades brought about numerous technological advances and cultural changes that altered the focus of research investigations. It is noteworthy that many foundational tenets of relationship science remain the same, but there are now answers to previously unasked questions as romantic relationships (and close relationships research) adapt to accommodate the ever-changing world in which they occur.

**Technological advances.** The 1990s ushered in technology that left an indelible impact on humanity. During this time, computers became readily available, and people gained access to the newly developed World Wide Web. Similarly, cell phone technology and availability amplified exponentially. More recently, video chatting (e.g., Skype, FaceTime) and mobile apps became commonplace modes of relationship communication. Collectively, these changes transformed a number of interpersonal dynamics, giving social psychologists a veritable playground of topics to explore. Most researchers aimed to identify ways that online relationship dynamics are similar to or distinct from those that occur in person. Generally speaking, findings show that the nature of intimacy remains unaltered by technology (Finkel, Eastwick, Karney, Reis, Sprecher, 2010). However, it has impacted a number of specific relationship phenomena including communication and attraction. As it relates to interpersonal communication, technology (e.g., instant messaging, texting, Facebooking) can foster isolated environments that are devoid of typical social and/or nonverbal cues. This, in turn, increases both miscommunication (Suler, 2010) and the online disinhibition effect, where people disclose information (including words, pictures, and videos) more readily than in face-to-face interactions (Suler, 2004).

In terms of attraction, research is varied. For instance, investigations document that physical attractiveness and similarity remain important predictors of attraction, even in online environments (Jones, DeBruine, & Little, 2007; Taylor, Fiore, Mendelsohn, & Cheshire, 2011). However, research also identified a number of ways online dating and social networking may alter or undermine relationship success (Finkel, et al., 2012). This includes creating expectations that lead to disappointment when online partners ultimately meet in person, whether the result of flattering falsifications put forth by the potential partner (Hall, Park, Song, & Cody, 2010; Toma, Hancock, & Ellison, 2008) or from “filling in the blanks” with overly optimistic cognitions (Norton, Frost, & Ariely, 2007; Ramirez & Zhang, 2007). Further, the bevy of perceived alternative partners the internet makes salient can discourage critical consideration of potential partners (Chiou & Yang, 2010; Lenton & Stewart, 2008) and create negative outcomes within established relationships (Muise, Christofides, & Desmaras, 2009). Despite the cornucopia of complimentary and critical findings pertaining to the impact of technology on romantic relationships, data shows that partners who meet online report slightly more marital satisfaction as compared to those who meet in person. Further, relationships established through online dating are less likely to end in separation or divorce (Cacioppo, Cacioppo, Gonzaga, Ogburn, & VanderWeele, 2013). No doubt future research will continue to investigate and untangle the ways that these computer-mediated communication (CMC) tools (and other technologies yet to be discovered) impact romantic relationships.
Shifting perceptions of equality. Over the past few decades, the definition and expectation of equality between relationship partners has also shifted. One important change pertains to gender roles. As discussed previously, gender roles within American relationships have been in flux for quite some time. Recent decades evidenced a transition from predominantly traditional, male head-of-household arrangements to more egalitarian relationships between partners (Amato & Booth, 1995; Amato, Booth, Johnson, & Rogers, 2007). Perhaps never before have partners embraced as equal a balance in occupational, financial, and domestic responsibilities. Thankfully, studies show that couples in equitable relationships evidence greater relationship success marked by increased understanding and satisfaction (Helms, Proulx, Klute, McHale, & Crouter, 2006). In such a case, changing cultural norms may be facilitating positive relationship outcomes.

Another cultural shift of the past few decades that broadened close relationships research is the growing acceptance of and research interest in same-sex unions. With the Supreme Court ruling in Obergefell v. Hodges (2015), same-sex couples received the constitutional right to marry within all fifty of the United States. This recently expanded conception of marriage highlights the increased need for studies examining relationship dynamics within homosexual couples. To date, most research shows that relationships function similarly regardless of their gender make-up (Kurdek, 2004, 2005; Peplau, & Fingerhut, 2007). However, there are some areas in which heterosexual and homosexual relationship patterns appear to differ. For instance, same-sex relationships tend to show greater equity between partners (Kurdek, 1998), which, as discussed previously, tends to promote relationship satisfaction. Yet research has also revealed higher break-up rates for same-sex couples as compared to their heterosexual counterparts (Kalmijn, Loeve, & Manting, 2007; Kurdek, 1998). This elevated level of relationship dissolution stems from a number of individual, relational, and contextual factors, including lower levels of social support faced by same-sex couples (Khaddouma, Norona, & Whitton, 2015). Needless to say, this area of investigation will continue to grow in the future.

Conclusion

The psychological study of close relationships is a relatively new area; however, this brevity in time should not minimize the magnitude of the subfield. Over the past four or five decades, relationship science has grown into an important and productive avenue of psychology. Today the psychological subfield of close relationships remains energized, if not electric. There is a buzz of creativity that encourages exploration of classic concepts using new methodology. Yet at the same time there is enthusiasm about identifying novel areas of exploration.

For those who wonder why they should learn about the history of close relationships, the answer lies in its centrality to the human condition. To be human necessitates participation in relationships. An understanding of close relationships research will aid in the successful navigation of interpersonal life and facilitate overall well-being. The sheer number of disciplines that worked together to create this beguiling area of study is testament to the universal merit of the study of close relationships. In my experience, few will snub the opportunity to immerse themselves in the topic. Perhaps in teaching the material, instructors will find a handful of students who will follow their curiosity to graduate school and become the next pillars of this discipline. Indeed, more doctoral programs than ever are available for students who realize their passion for the subject area. Moreover, conferences and journals abound to facilitate research partnerships amongst those with a shared interest in relationship science.

I will not hazard to guess what the future of close relationships research will bring. I will only forecast that it will capture the curiosity of researchers and laypeople alike and will hopefully help
to continue unraveling the mysterious underpinnings of phenomena that are vitally important to us all. To put it succinctly, this is a fascinating time to be a close relationships researcher.

**Vignettes**

**1. Comparing Relationship Timelines**

In the past few decades, numerous technological advances emerged that impacted the way romantic partners communicate. Relationship phenomena such as intimacy and disclosure took different shapes as landlines transitioned to cell phones and calls shifted to text messages. In fact, research shows that these technological innovations changed interpersonal communication by altering people’s expectations of responsiveness, level of inhibition, and use of formal language (Baym, 2010; Nguyen, Bin, & Campbell, 2012; Ruppell, 2015; Suler, 2010). Because these changes happened over a fairly short period of time, our culture now reflects great diversity in comfort, experience, and proficiency with both technology and interpersonal communication.

The activity described herein highlights people’s differential histories with both relationships and technology. It creates a visual display of the age discrepancy in exposure to important relationship milestones and technological advances. A comparison of the resultant timelines should help students contextualize their own experiences and gain a broader understanding of how relationships and relationship-related communication function differently for different age cohorts. Further, this assignment should facilitate students’ awareness of historical changes in communication, helping them see beyond their own personal experience. This understanding should extrapolate to considerations of how romantic life and relationship research have been and will continue to be shaped by technology.

For this activity, I ask my students to draw a timeline of their own experiences with both technology and relationships. We start by identifying the age at which they first used technologies that foster interpersonal connection. For example, students may choose to identify their first experience with cell phones, text messages, the internet, social networking websites/apps, and video chatting. Then, I ask each student to indicate on his/her timeline the age at which pivotal relationship experiences occurred. Such events may include: first kiss, first date, first serious romantic relationship, and/or first long-distance relationship. At this point, students’ examine each other’s timelines and discuss similarities and differences. Generally, students note the similarity in timelines unless some participants were raised in different cultures or by different societal rules.

Next, I ask students to choose family members of varying ages to interview. I encourage them to reach out to their parents and grandparents. Students are asked to generate a separate timeline for each individual that they interview, noting the ages at which family members had their first experience with cell phones, text messages, etc. Similarly, they are asked to indicate the ages at which parents and grandparents went on their first date, had their first serious romantic relationship, etc. Reflection on these timelines leads to a discussion about what it must have been like to meet, date, marry, or potentially divorce in a time before cell phones and the internet.

Finally, I steer the discussion towards an examination of the discrepancy in how technology impacted their and their family members’ experiences with romantic relationships and interpersonal communication. For example, I highlight how students’ parents were likely proficient in relationships before advances in communication technology. Conversely, many traditional-age university students were proficient with technological tools before experiencing their first romantic relationships. Students compare and contrast their experiences with those of their relatives. A
fruitful discussion generally follows on the influence of contextual history (e.g., technological advances) on relationship experiences.

Instructors may choose to have students discuss how expectations about interpersonal communication, including formality, responsiveness, and level of disclosure, have been impacted by specific technological advances. To take the dialogue even further, instructors can also discuss technology trends from the past that created more subtle changes in communication. Recent examples include the advent of caller ID as well as cell phone plans with roaming charges and/or unlimited night and weekend calling. Distant examples include the availability of multiple landline phones within a household vs. one centralized home phone, as well as the role of the live operator in connecting calls until the 1960s. In past experience with this activity, lively discourse centered around questions such as:

• How is online communication similar to and different from face-to-face communication?
• How do changing expectations for timeliness and responsiveness in communication impact relationship satisfaction and/or commitment? Specifically, how long would you wait for a response from a loved one before becoming frustrated, confused, or upset? [Instructors can highlight how answers to this question may differ for people who lived during a time when partners could only communicate via letters or landline phones.]
• How has communication technology facilitated long distance relationships?
• How does the increased use of informal language in written communication (e.g., acronyms, abbreviations, emoticons) impact feelings of connection?
• What contextual elements make today’s communication environment more conducive for oversharing (or appropriately rapid disclosure)?
• What are the advantages and disadvantages of being constantly accessible for communication?
• What impact does increased online connectivity have on perceptions of social support?

2. Viewing Historical Romances through the Lens of Relationship Science

“Love is a many-splendored thing,” (Adler & King, 1955), and history is full of famous couples that demonstrate how transcendent this emotion can be. From Anthony and Cleopatra to Napoleon and Josephine, the past holds a bevy of love stories that capture our imagination. This activity capitalizes on people’s inherent fascination with the love lives of their favorite couples by asking students to apply current relationship research to romantic unions of the past.

For this activity, I ask students to identify their favorite couples throughout history. Students then apply course material in an effort to explain partners’ behaviors and ultimate relationship outcomes. There is generally a good deal of variability in selected couples. Some students pick actual relationships from years gone by, while others choose fictional unions from treasured books, plays, or movies. To demonstrate the diversity, couples could include Adam and Eve, Lancelot and Guinevere, Joe DiMaggio and Marilyn Monroe, Paris and Helen of Troy, Robin Hood and Maid Marian, Romeo and Juliet, Rhett Butler and Scarlett O’Hara, Samson and Delilah, and Spencer Tracy and Katharine Hepburn. Should the instructor prefer, students’ selections can be limited to a particular period in history (e.g., the 1900s) or to a specific kind of relationship (e.g., married).

In administering this assignment, instructors may choose to limit their focus to a particular section of material (e.g., love, interdependence, betrayal). Conversely, instructors could use this activity as a culminating assignment with a broader scope, allowing students the choice of relationship concepts that span from attraction to dissolution. In either case, each student must provide a historically sound account of a couple’s romantic relationship. Students must then hypothesize about how relationship dynamics played a role in that particular couple’s success or failure. Through investigation, students learn about the intimate and personal lives of their chosen couples.
This includes the historical, cultural, and/or familial pressures that shaped each union. Building from the basic format of this assignment, instructors may also task students with predicting how historical couples would fare in modern society. In such an extension, students innovatively build from their understanding of a particular couple as well as past and present relationship research to pose possible outcomes.

In my experience, the greatest challenge in teaching the psychology of close relationships lies in getting students to extend their thinking beyond personal experience. Because relationships are so familiar, anecdotal evidence can distract from critical thinking. Familiarity can also hinder students from accepting evidence about relationship phenomena that contradicts preexisting beliefs. To overcome this limitation, I urge students to find examples of course material that occur outside of the classroom and outside of their own lives. This activity accomplishes that goal by asking students to integrate and apply empirical findings in novel and creative ways. Students must postulate about relationship dynamics to answer questions that do not have straight-forward answers. Further, in completing this exercise students simultaneously draw from historical knowledge and peer-reviewed findings in an effort to tell a cohesive story. While approachable and interesting, this assignment challenges students to forge connections that bring relationship research to life in a way that is personally relevant, but distinct from the self.

Another benefit of this activity is its ability to bridge the disciplines of relationship science and history. Through this integrated lens, students can critically evaluate relationship phenomena, noting how expressions of relationship experiences and emotions are similar now to how they would have been before. Likewise, students can ponder how fundamental psychological processes have been expressed differently throughout the generations. For instance, an examination of biblical, philosophical, and even mythical stories attest to the enduring presence of romantic love. However, it is only in recent decades that love served as a prerequisite for marriage (Coontz, 2005). In other times the experience of love ranged from noble to forbidden, if not downright maddening (Miller, 2015). In identifying such parallels and discrepancies, students must grapple with the ways that relationships have and have not changed over time. Similarly, by restricting the parameters of this assignment to examine only married couples, instructors can engage students understanding of psychological, cultural, and legal factors, as throughout history marriage has often been restricted to only to certain types of couples (e.g., partners of similar ethnicity or heterosexual couples). Taken on as a whole, this assignment highlights the importance of culture in shaping relationship expression, and fosters a greater appreciation for historical figures and events.

3. Online Dating as a Class Activity
The rise of the internet ushered in a cultural shift in the way people meet romantic partners. Where once single individuals looked to friends or family to find romantic prospects, they now increasingly turn to online dating websites and social networking platforms to seek out connections. As relationships are a product of the cultures in which they take place, I designed this activity to help students understand the changing context of romantic attraction, relationship initiation, and partner selection.

When teaching about attraction, I now incorporate a lesson on online dating. As there are relatively few textbooks that provide current material on the topic, I employ a hands-on demonstration where I lead my students through the process of creating online dating profiles and together we critically evaluate potential partners found on various dating websites. At many points we stop and reflect on how online dating is similar to and distinct from face-to-face relationship initiation. We contemplate previous relationship research and hypothesize how it pertains to this new context. We also discuss the role of culture in shaping the definition of “acceptable”
relationship behaviors throughout America’s history. This includes a conversation about the shifting perception of online dating as a taboo or stigmatized behavior.

I begin this activity after we cover the course material on theories of attraction, specifically evolutionary theories and the role of similarity in attraction. Then, as a class, each student creates a profile on a dating website that provides access to both pictures and biographies of potential partners. In this activity, students identify examples of successful profiles (i.e., individuals who are likely to attract desirable partners with their pictures and personal descriptions), as well as unsuccessful profiles (i.e., individuals who are not likely to attract many/any potential partners). Students must then support their claims with course material. Often, they discuss gender differences and the role of physical appearance in partner selection. We build from this by discussing how conceptions of beauty have changed and/or stayed the same over time. And how the daters they identified would fare in person or in different dating contexts, including during the decades in which their parents or grandparents were young adults. Generally, a spirited discussion ensues.

I then ask students to repeat the assignment on a website where they must complete questionnaires about their personality in order to be paired with partners. In this case, students have fewer individuals to evaluate and are only provided with descriptions of potential partners (not pictures). Interestingly, this leads to a discussion about how physical attractiveness acts as a gate-keeping mechanism in face-to-face interactions or when pictures are available, diverting attention away from potential partners who do not meet a minimum threshold of attractiveness. It also forces students to use different criteria for identifying successful and unsuccessful daters. This portion of the activity draws from course material on similarity in attraction. We then discuss the role of shared interests in facilitating and maintaining romantic connections.

I find that students begin this activity with a very limited understanding of online dating. Accordingly, they broach the exercise with a mix of intrigue and trepidation. But after online dating, they are not only wiser about this growing relationship phenomenon and better able to understand the research pertaining to it, but they are also excited to share their experiences with others. Over the past few years I have collected Scholarship of Teaching and Learning (SoTL) data on this activity, which documents that it is both well-received and educational, in that it facilitates a better understanding of the different theories of attraction (Leder-Elder, 2014). To facilitate other professors’ use of this active learning demonstration, I offer a few words of caution. First, I believe that having a structured set of guidelines is critical to the successful implementation of this exercise. For instance, I have all students sign a contract prior to participating that outlines both goals and limits of this activity. These rules are designed to ensure my students’ anonymity during the process by prohibiting the sharing of actual names and email addresses with online dating websites. Also, to further protect the privacy of my students and of the online daters, we take the precaution of viewing dating profiles in a randomly selected and distant geographic region. I also spell out in the guidelines that this activity is not aimed at undermining students’ current romantic relationships and that they will not be asked to interact with any potential partners. I also offer the opportunity for students to work in pairs, should an individual feel uncomfortable about participating in this class activity alone. Additionally, I believe that in order to ensure student learning, the professor must frame the importance of this activity as a practice in the naturalistic observation of the online dating culture. This entails, among other things, showing respect for the integrity of the process as well as for the people on the websites who are legitimately seeking a connection. Finally, it is important that at the conclusion of the activity students inactivate their
fabricated online dating profiles and accounts so as to eliminate the possibility of students having future interaction with online partners.

In using this teaching demonstration as an example of the impact of historical developments and changing culture on the growth of relationship science, instructors may want to utilize discussion prompts that compare and contrast this vehicle of relationship initiation with more traditional ones. Further, the utility of this activity may be underscored by explicitly discussing with students the expansion of the field of relationship science by the growing availability of and familiarity with technology. Instructors can probe topics, including:

- How have previous findings on attraction principles, particularly those related to physical attractiveness and similarity, fared in light of online dating?
- How has online dating impacted other topics within close relationships research, including the importance of proximity in attraction?
- How might perceptions of romantic alternatives be impacted by online dating websites, where people generally have more romantic options readily available than they do in person?
- How might the number of potential partners available online impact the likelihood of infidelity?
- How might relationships function differently if they start online as compared to in person?

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The Historical Development of Community Psychology

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Community Psychology examines the ways individuals interact with others and how societal institutions affect people, social groups, organizations and the environment. The focus is on how individuals and communities can work together to promote social justice, influence public policy, reduce oppression, and enhance people’s well-being. Community Psychology differs from other sub-disciplines in its applied focus, areas of interest, research methods used, level of analysis employed, and the nature of the interventions that are developed. Research in community psychology explores such topics as aggression, homelessness, poverty, substance abuse, school failure, empowerment, diversity, and delinquency (Levine, Perkins, & Perkins, 2005).

In this chapter, we will chronicle early contributions to community psychology, the process that created the discipline as a full-fledged field, major contributors to the field, and a projection about the future of community psychology. Community psychology emerged in the United States during the mid-twentieth century, although there were earlier psychologists who promoted the use of social and behavioral sciences to enhance people’s well-being. Among those were Hugo Munsterberg, who contributed to industrial psychology, forensic psychology, and educational psychology (Chisholm, 1911); William James, who wrote on teaching and religion (Richardson, 2006); and G. Stanley Hall, whose research focused on child development and education (Pruette, 1926). The major impetuses for the field of community psychology included the Great Depression, World War II, and the Holocaust. These events served as catalysts by forcing people to confront racism, poverty, the effects of prolonged stress (e.g., battle fatigue), and the treatment of people who were minorities. In addition, several other societal events have influenced the development of community psychology over the years. Among these were social change movements such as the civil rights movement and feminism, a growing understanding of white privilege and implicit bias, a preventive perspective in addressing mental health issues that have led to reforms in mental health care, and action research from several social science disciplines on policy issues.

The Formal Launch of a New Field

The formal foundation of the field is usually dated from the 1963 Swampscott Conference, where the term community psychology was first used (Dalton, Elias, & Wandersman, 2001). At that conference, the role of the community psychologist was proposed as an alternative to the disease and treatment orientation of clinical psychologists. A popular story illustrates the difference.

Two men are picnicking alongside a river. After setting out their food and wine, one spots a drowning person floating by and jumps in, grabs the drowning person and pulls him to safety. He stops to catch his breath and drink a glass of wine when he sees that his friend has jumped in to save another drowning person. The flow of drowning people continues and increases as the two men continue pulling them out of the water. In fact, so many drowning people keep floating by that they can only rescue a few of them. Suddenly one of the men stops the rescue effort and takes off running up the river. His goal is to find out what is going on upstream to cause all of these people to fall into the river! (McKinlay, 1979). The goal of the community psychologist is to examine the personal and social factors that contribute to the difficulties experienced by our most vulnerable individuals that can overwhelm them.

After the Swampscott Conference, the American Psychological Association created a Division of Community Psychology (27), which is now called the Society for Community Research and Action.
The SCRA has promoted active participation of both practitioners and action-oriented researchers in both the United States and around the world. In their 2001 mission statement, they identify four broad principles that guide the work of community psychologists (http://www.scra27.org/who-we-are/). They are:

- Community research and action requires explicit attention to and respect for diversity among peoples and settings;
- Human competencies and problems are best understood by viewing people within their social, cultural, economic, geographic, and historical contexts;
- Community research and action is an active collaboration among researchers, practitioners, and community members that uses multiple methodologies;
- Change strategies are needed at multiple levels in order to foster settings that promote competence and well-being (SCRA, 2016, ¶ 4).

**Major Contributors to the Field**

One of the most influential early community psychology theorists was Kurt Lewin (1935). Lewin is generally credited with coining the term *action research*, which he defined as research on the conditions and effects of social action as well as research leading to social action. Action research involves a series of steps that begin with identifying an initial idea followed by fact-finding. This lays the groundwork for the planning stage which is followed by taking the first action step (e.g., an intervention), evaluating the effects of that action, amending the plan based on the results, and taking the next action step. Action research differs from more traditional approaches in promoting active collaboration between researchers, participants, and others who have a stake in the results of the research. For example, an early study by Lewin examined why a gang of Italian Catholics had disturbed Jewish Yom Kippur religious services. Lewin brought together Catholics, Jews, African-Americans, and Protestants. After putting the gang members into the custody of local priests, the action research team reached out to the local community to discuss improvements. Based on the discussions, Lewin, who himself was Jewish, decided that the problem was not one of anti-Semitism but of general hostility, based on several frustrations associated with community life. By addressing issues of housing, transportation, and recreation, members of different groups integrated and within a year, conditions had improved greatly (Marrow, 1969).

Another major contributor to the development of the field was Roger Barker’s (1968) ecological psychology, which views the relation between the individual and the environment as a two-way street, characterized by interdependence. Barker used the term *behavior setting* to describe naturally occurring social systems in which certain behaviors unfold, such as a baseball game. A particularly influential aspect of his theory examines *staffing*, which refers to the critical number of people needed to fill the necessary roles, in a given setting. A behavior setting is understaffed if the number of people is less than those needed to maintain a behavior — the maintenance minimum. Overstaffing occurs when the number of people involved exceeds the capacity of the behavior setting. An example of research based on staffing theory is the work of Wicker (1969) who found that members of small churches are more likely to be involved in more behavior settings within the church (e.g., committees, choir, religious education).

Another important contributor to the development of community psychology was Rudolph Moos. His contribution was the development of social climate scales, which allow researchers to assess what social settings mean to people, as a starting point for interventions (Moos, 1976). He examined social climate, which refers to the personality of a setting, and can be characterized according to three dimensions: personal development orientation, relationship orientation, and
system maintenance/change orientation. His scales have been used in a variety of ways, one of which is to examine the distinction between ideal and real climates. Another use of the scales is to identify what outcomes are associated with different social climates. For example, Moos (1976) found that climates in which the relationship orientation is high foster greater personal satisfaction, heightened self-esteem, and lower irritability.

From the beginning, there has been an on-going debate about the relation between community psychology and clinical psychology. During the 1970's, the field of community psychology began to diverge from the field of community mental health to address a broader range of issues. This divergence came about as a result of a difference in perspective that reflected a number of issues. The first issue was a debate as to whether the field should address ways to improve the mental health of individuals or change the social conditions that affect individual's mental health. The importance of this distinction was pointed out by Thomas Szasz (1970), who noted that the efforts to make individuals conform to normative expectations can be traced all the way back to the inquisition (Rappaport, 1977).

In the early development of community psychology, white men made most of the contributions to the field. During the 1970's, women and persons of color began to move the field to include an examination of the role of race and gender. By the 1980's, community psychology had become an international field (Reich, Riemer, Prilleltensky, & Montero, 2007. For example, in Latin America, community social psychology emerged, with a focus on social change. The issues of empowerment and liberation were added to the concerns being addressed and the process of collaborative, participatory research methods began to be employed (Rudkin, 2003).

The conservative sociopolitical climate of the 1980's led to an understanding of how social issues are defined in politically progressive and conservative contexts. Levine and Levine (1992) pointed out that in human services work there is a correlation between the social ethos of the times and the form of help offered. They proposed the following hypothesis: In progressive times, environmental explanations of social problems would be favored, which encourage intervention programs designed to change the community. In conservative times, individualistic explanations would be favored, which encourage intervention programs designed to change individuals. For community psychology, conservative times provide both opportunities and challenges. The opportunities include support for the implementation of programs that are designed to change individuals, for example, Headstart. The challenge is that in conservative times, it is hard to convince people that social ills are not simply due to “problem people” but often stem from systemic factors (Miller, 2008). Fortunately, the two points of view have some shared beliefs including skepticism about top-down programs, a preference for grass-roots decision-making, and the recognition that some community programs have long-term economic benefits that can offset short-term costs.

Another important contribution to community psychology was Urie Bronfenbrenner's (1977) ecological systems model. His model proposed that individuals exist in four nested social systems. They are the microsystem: which is the setting that includes the actual person, such as the family or workplace; mesosystem, which consists of interactions between microsystems, for example the relation between a family and the neighborhood school; and the exosystem, which is the formal and informal social structure that affects individuals. For example, a mom’s workplace would be an exosystem for her children. The fourth level is the macrosystem, which is the overarching pattern of the society or culture. The macrosystem includes the legal, economic, political, and other social systems that influence the other systems. Bronfenbrenner's theory has been useful in helping us consider the many levels of analysis that are relevant for community psychologists’ understanding.
of human behavior. Also, Bronfenbrenner helped community psychologists understand that “. . .
interpersonal relationships, even [at] the smallest level of the parent-child relationship, did not
exist in a social vacuum but were embedded in the larger social structures of community, society,
economics and politics” (http://articles.latimes.com/2005/sep/27/local/me-bronfen27Woo, 2005,
¶ 5).

Unlike many other branches of psychology, community psychology makes no pretense of being
value-free. Community psychologists reflect on their personal values, bring their values to the
forefront of their work, and acknowledge the effect their values have on what they do (Canning,
2011). Community psychologists understand that values can influence how we frame research
questions. More importantly, values are important determinants of human action. The importance
of values to community psychology researchers is that values not only guide actions but also are
trans-situational, having effects across time and contexts. In recognizing the importance of values,
community psychologists have been careful to be explicit about their own values. Some of the core
values that guide community psychology are: holistic models of health and wellness, social justice,
self-determination, accountability, respect for diversity, basing action on empirical research, and
support for community structures that encourage commitment, caring and compassion.

The Future of Community Psychology

Where is community psychology going in the 21st Century? There are several important issues
facing community psychologists. For example, as the growing population of the United States
continues to place a strain on finite environmental resources, the question inevitably arises: Are we
decreasing the ability of the Earth to sustain life? Factories pollute our air and water. We are
rapidly depleting our supply of seafood. People litter even though we all know that someone must
come and clean up the mess. These kinds of behaviors are characteristic of the commons dilemma,
in which short-term personal gain conflicts with long-term societal needs (Hardin, 1968). Taking a
shower may be good for you, but if water is scarce it will be harmful to the rest of the people
needing water. These situations create a type of social trap. One of the most common social traps
is the individual good-collective bad trap, which occurs when a destructive behavior by one person
is of little consequence but when repeated by many, the result can be disastrous for the larger
community. Overgrazing, overfishing, and excessive water consumption are examples of this social
trap (Miller, 2017).

One of the challenges of community psychology in the twenty-first century is to address the
question: How can the commons dilemma be avoided? There are already some promising
approaches to this problem. One way to overcome the commons dilemma is to change the
consequences of the behavior to the individuals involved by punishing what was previously
reinforced and rewarding what was previously punished. For example, many cities have created
carpool lanes on highways, which allow faster movement for those who share their automobiles. A
second technique is to change the structure of the commons by dividing previously shared
resources into privately owned parcels. Fish farms are an example of this approach. Unfortunately,
many of our common resources such as air and water cannot be privatized (Martichuski & Bell,
1991). A third technique is to provide feedback mechanisms so that individuals are aware when
they are wasting precious resources (Jorgenson & Papciak, 1981).

Each of these techniques has its own costs, benefits, and ease of application. The least costly
intervention is probably environmental education, but it may be one of the least effective as well.
Reinforcement and punishment can have strong short-term effects but many of these effects can
dissipate over time when the reinforcement strategy is discontinued. Perhaps the most promising
techniques have to do with increasing communication, promoting group identity, and encouraging individual commitment to solving the tragedy of the commons.

Another area of growing concern is the plight of those who are marginalized and stigmatized by their communities. There are several new trends in community psychology that are bringing invigorating advocacy for social justice and social change. Recently, Conway, Evans, and Prilleltensky (2003) created an organization called PsyACT, which stands for Psychologists Acting with Conscience Together. This network brings together advocates for social justice to who use media contacts and education to raise awareness about the effects of poverty.

Another fairly recent trend is the growth in collaborative, participatory research and action, which led Wandersman (2003) to propose the term Community Science for an interdisciplinary field designed to incorporate empirical research, program development, and everyday community practices. His focus is mostly on prevention and promotion but also includes policy advocacy and social change.

As we examine the work of community psychologists, we should consider the type of communities in which we want to live, work and raise families, and consider the words often attributed to Helen Keller, “Until the great mass of the people shall be filled with the sense of responsibility for each other’s welfare, social justice can never be attained....I am only one, but still I am one. I cannot do everything, but still I can do something; and because I cannot do everything, I will not refuse to do something that I can do” (Grover, 1916, p. 172).

Vignettes

1. James Gordon Kelly: Founding Father of Community Psychology
James Gordon Kelly is Professor Emeritus at the University of Illinois at Chicago and a founder of the field of community psychology. In the 2005 tribute published in the American Journal of Community Psychology (Hays, et al., 2005), his students and colleagues characterized Jim as theoretically sophisticated, humble, appreciative of others’ contributions, closely connected to his students, and a great listener. They also applauded his influence in bringing the process of empirical investigation to what was then a practice field.

While his contributions are many and varied, his focus has been on the development of ecological principles that can enhance the design of community-based research and practice. The development of these principles was based on empirical research as well as Kelly’s lifelong involvement in practical community problems and issues. The four principles outlined in his ecological analogy form the basis for understanding how human communities operate (see Kelly, 2006, for a summary of his work from 1968 to 2006).

**Principle 1: Adaptation**
This principle describes a reciprocal process. Individuals adapt to environmental constraints, restrictions and other aspects of the environment, including environmental quality. In turn the environment changes as a result of individual and community action (see Trickett, 1972). For example, a new factory opening in a small town changes the job opportunities for local residents and the local residents, with their unique set of skills, interests, and attitudes influence the factory to modify its policies and procedures related to the work environment as well as potentially
effecting the social environment through networking and activities sponsored by the workers and/or management.

**Principle 2: Succession**
All social/environmental settings have a history. Families, organizations, and communities provide members with normative expectations, attitudes about issues the effect the setting and are affected by the setting, and in many cases policies, procedures or precedents on how one is to act and interact within the setting. Thus, any intervention designed to address issues within a setting must take into account the history of the setting, its structure, and its informal processes. As change agents, psychologists must be able to address the current structures within a setting in order to gain cooperation from the members and to make suggestions that resonate with the members’ understanding of their setting.

**Principle 3: Cycling of Resources**
In order to promote effective change, it is important to consider the resources available to the setting in which change is to occur. In addition, opportunities for the acquisition of new resources need to be considered. Resources can include the potential contributions of individuals (e.g., personal resources such as talent and skills), groups and institutions, local, state, and national government, and social resources including values, beliefs and attitudes of the individuals to be involved in the change effort. Effective change relies on creating a plan that builds on the existing resources and the likely incorporation of new resources.

**Principle 4: Interdependence**
This principle acknowledges that settings do not stand-alone but are part of a set of bigger setting. As a result, changes made to one aspect of a setting are likely to spread to other settings. Thus, change agents need to consider what intended and perhaps unintended consequences may occur. For example, think about how a few women in the neighborhood having children could change the need for recreational facilities, schools, day care, and all of the other agencies that support children.

A second major contribution of Jim Kelly was to identify seven important qualities that community psychologists should possess. They are:
1. Clearly identified competence in an area relevant to community psychology, for example therapeutic skills or research skills that address complex social problems.
2. Creating an eco-identity. Good community psychologists do not approach the members of a setting in the role of an outsider. They must identify with the people with whom they work.
3. Tolerance and appreciation of diversity. Community psychologists involved in social change work with a variety of stakeholders, often with conflicting interests. Community psychologists need to not only appreciate diversity but must also understand some of the underlying causes of differences among stakeholders.
4. Coping effectively with varied resources. Understanding that resources are never unlimited, community psychologists must be able to assess and mobilize the resources available as well as identifying sources of additional resources.
5. Commitment to risk taking. To create change involves taking a risk. Most social change involves not only an initial risk but also the possibilities of additional or different risks down the road. For example, President Bill Clinton’s 1994 crime bill was intended to reduce violence in black communities by removing dangerous individuals. However, it ultimately became a process of locking up many less than dangerous drug users and has been charged with decimating black America (Alexander, 2015).
6. Metabolic balance of patience and zeal. Community psychologists walk a tightrope between wanting things to change now as a response to pressing urgency and understanding the sources of resistance and bureaucratic hassles that may take time to overcome.

7. Giving away the byline. Community psychologists recognize that much can be accomplished if we don’t care who gets the credit. In 1858 Darwin received a manuscript, posted from Malaysia, from Alfred Russell Wallace in which he laid out a theory of natural selection. Wallace asked Darwin to present it to other scientists. Darwin, who had been laboring for years on his own manuscript, was much taken aback and unsure of what to do. In a letter to Charles Lyell, he wrote “I would far rather burn my whole book than that Wallace or any other should think that I behaved in a paltry spirit” (Darwin, 1887, p. 85) As it was, Wallace also showed generosity, allowing Darwin to complete his own work and to present them both together at a meeting of Linnaean Society. Wallace later wrote that the one great result which I claim for myself is that I compelled Darwin to complete and publish his Origin of the Species without further delay” (Smith, 1903, p. 78)

Jim Kelly has the reputation with friends, colleagues and students as a man with a generous spirit. He continues to contribute to the field and is currently engaged in writing autobiographical studies of community psychologists, ecological analyses of community leadership, and stories of collaborative research expeditions.

2. How Social Media has Changed Our Sense of Community

“The internet is the first thing that humanity has built that humanity doesn’t understand, the largest experiment in anarchy we’ve ever had” (Taylor, 2010, p. 24). This haunting quote from Google’s former CEO, Eric Schmidt, highlights the ambiguous nature of our lives online. Schmidt may be overstating the point when he suggests that the internet is the first thing that humans have built that they don’t fully understand. For centuries humans have socially, physically, and consciously constructed communities that promote communication among its members (Anderson, 2006). Robin Williams once argued that if one wished to see the birthplace of the internet they should look to Pompeii (Aitkenhead, 2010). The scribbled graffiti chronicling the lives of locals, played out much like a coarse Facebook post (Benefiel, 2010). However, online networks cannot be considered only in terms of its placid use as a tool for gossip or an experiment in anarchy. Social media has become a battleground for ideas, a new opiate of the masses, and a defining characteristic of a new generation. More tacitly it has reformed our understanding of what it means to be in a community. This vignette will briefly cover four aspects of social media and its connection to community behavior: its roots, its use by non-profit organizations, its use as a predictive tool, and its effect on how we form and maintain friendships.

Roots

Like community, social media is dynamic. Ellison (2007) defines it as a virtual network that lets people create a semi-public to public account within a limited system. This space connects individuals with a list of other people’s profiles who share a common interest and allows them to connect with others inside the network. However, the nature or purpose can differ from network to network (Ellison, 2007). The first significant social media site is credited to Sixdegrees.com. It was based on the concept that all living things can be linked within six degrees of separation. Six Degrees was founded in 1997 and allowed users to list friends, family, and acquaintances in order to find users who linked with them in some fashion. Users could invite others, post on bulletins, chat with others who fell within their six degrees, and surf the site to find other connections (Ellison, 2007).
Since the late 1990s, hundreds of sites dedicated to connecting like-minded people have been generated. Currently, the five most popular social networking sites are Facebook, Instagram, Twitter, WhatsApp, and WeChat. According to a recent study conducted by Smart Insights, Chaffey (2016) found that over 1.5 billion people actively use Facebook. The fastest growing demographic utilizing these sites are individuals between the ages of 50 and 63 (Chaffey, 2016). The dynamic and increasing importance of social media is quickly redefining how we define our communities. With internet use increasing globally, it is no wonder that psychologists and social scientists alike have been paying much closer attention to these sites than before.

**Social Media and Organizations**

One use of the internet is to help nonprofit organizations organize. Lovejoy and Saxton (2012) found that of the largest 100 nonprofit in the United States, the three main purposes they used social media was to spread information, create a larger sense of community among its members, and call people to action. With a widespread space for communication that is virtually always connected, nonprofits have been able to create communities that are dispersed yet more in touch than ever before (Lovejoy & Saxton, 2012). This raises the question of whether it actually works. According to Asur and Huberman (2010), chatter found on Twitter has been able to predict market demand for box office films better than tradition market-outcome predictors. Furthermore, individuals’ interaction and behavior on social media has been linked to growing obesity rates among a subset of society as they interact with similar others. Recent evidence has found that individuals’ interactions online correlate with offline behavior, including the likelihood that those posting or linked to posts about political action will join protests (Christakis & Fowler, 2009).

Social media is not only an effective tool for predicting individual behaviors, it has been found to be an important tool for predicting collective behavior as well. For example, companies that monitor the online interactions of a particular group can advertise in ways that target the interests of that particular group, which in turn affects sales (Gallaugher & Sansbotham, 2010). Similarly, Tufekci and Wilson (2012) found that the magnitude of a particular protest in Cairo’s Tahrir Square could be linked to its proliferation on social media websites. Shirky (2011) found a correlation between the likelihood of joining a political protest and its social media presence.

**Friends in All Places**

Social media also provides a mechanism for promoting and maintaining friendships. The normative expectations for online friends is different from that for face-to-face friends. The rules are more relaxed, and the connections are made in novel and different ways (Henderson & Gilding, 2004). Social media has changed the ways we interact. First, Kaplan and Haenlein (2010) found that the process is hyperpersonalized, and increasingly self-divulging, so that our friendships are more public than private. Second, individuals interact in ways that seem to be more tolerant of diversity. Communication is less likely to be top-down, or filtered vertically from a single source. Rather it is dispersed horizontally across many mediums and people (Henderson & Gilding, 2004). It is more likely to be intimate, and more likely to include a larger group of folks who regularly keep in touch with one another. Thus, social media tends to break down the traditional models of friendship that were based on physical proximity, allowing individuals to connect globally with others (O’Keeffe & Clarke-Pearson, 2011). In addition, social media provides a strong predictor for who we choose for our romantic partners (Christakis & Fowler, 2009).

Social media can build community, relay information, promote friendships, and incite action on a scale that is unprecedented. As social scientists we must consider social media’s effects as a new, yet important, aspect of our current understanding of community behavior. It is dynamic,
informative, and a consistently growing part of our lives. The muddled mess that is social media may seem like anarchy to some, but as social scientists we cannot ignore the facets of a network that is so public, so predictive, and so powerful as social media.

3. The Zeitgeist that Gave Birth to Community Psychology
Enter the 1960s. The sixties was a time of social upheaval, a strong negative reaction to conformity, big business, the military-industrial complex, restrictive gender norms and expectations, censorship (e.g., when the stand-up comedian Lenny Bruce was jailed for obscenity), governmental policies, and the war in Vietnam. Demands for change took the form of speeches (e.g., Martin Luther King’s reporting from the mountaintop), protests (e.g., Democratic convention in Chicago), and riots (when 18,000 national guardsmen converged on the Watts housing project). It was a time to stand up to “the man.” At the same time, it was a time of incredible optimism and excitement that there could be significant social change. Neil Armstrong landed on the moon, schools began implementing Supreme Court ordered school integration mandated by the landmark Brown vs. Board of Education (1954) case, and President Kennedy asked us to “ask not what your country can do for you – ask what you can do for your country.” He created the Peace Corps and signed the Community Mental Health Centers Act. After Kennedy’s assassination, President Johnson signed the Civil Rights bill, the voting rights bill, and initiated government programs to address issues of poverty. To paraphrase Bob Dylan, “The times they were a’ changin.”

In 1965, in the midst of events with tremendous social impact (e.g., Watts riots, the assassination of Malcolm X, the arrest of anti-war protestors, and the march on Selma, Alabama), a group of forty-one clinical psychologists (including one woman but no one who identified as a racial minority) met in a Boston suburb to participate in what came to be called the Swampscot Conference. Consistent with the world around them, the participants put forth a challenge to the status quo in which mental illness was conceptualized as an individual problem derived mostly from pathogens of a physical nature. The proposed reconceptualization was that mental illness could occur as a result of social, cultural, environmental, and psychological pressures and the interaction among those factors (Strother, 1987, p. 522). The thought was that the way to improve the mental health of the nation was to address those pressures before individuals succumbed to them. It was at this conference that the community psychology movement began in earnest.

The conference was intended to delineate the education of psychologists for roles in community mental health (Rickel, 1987, p. 511). Part of the problem was that at that time, many psychologists were ill equipped to deal with people who were minorities or working class. At the conference, the group discussed the problem of the growing need for mental health professionals and how to best train psychologists to confront the problems created by the social upheavals of the 1960s. The major reconceptualization was from the individual treatment of patients with psychiatric disorders to the role of problem solver, a role that Forrest Tyler called “participant conceptualizers” (Kelly, 1987, p. 515). The participants agreed that their job was to (a) become proponents of the role of “community” in community mental health, (b) to advocate for the country’s most vulnerable, and (c) to actively contribute to social and political life.

Several issues addressed at the conference have come to characterize community psychology, including:
• A focus on the prevention of mental health problems rather than their treatment (Heller, 1984).
• Active intervention to solve social problems by intervening at root causes (Murrell, 1973).
• Empowerment of the individuals who are seeking help to participate in the problem solving process by providing the tools so that individuals can take charge of their own lives and communities (Rappaport, 1987)
• An appreciation of the importance of the environment and the social context in understanding the attitudes and behavior of people (Barker, 1968)
• A multi-disciplinary approach to solving social problems, including social work, sociology, political science, public health, etc. (Albee, 1980).

The Swampscott Conference proved to be a watershed event. The decision to not categorize community psychology as a separate field but rather as a perspective that could pervade theory, research, and practice across the larger field was important at that time, as was the decision to not seek accreditation for community psychology programs. The decision to distance themselves from the medical model was also valuable, and finally the goal to seek recognition within the American Psychological Association was timely (Kaufman & Ward, 2005). The final report of the conference contained a series of recommendations that emphasized ecological levels of analysis; the importance of the social context; a recognition that cultural diversity makes a difference; a call for community psychologists to gain different areas of competence; a focus on prevention rather than cure, and the importance of self-help and empowerment.

References


A History of Environmental Psychology

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Setting the Stage

Psychology is the science of behavior; we seek to understand our species and ourselves. We are in the spotlight as we act alone or together, predictably or strangely. What are we doing? Why are we doing it? What should we do? To answer these questions modern psychology acknowledges the role of biological processes, cognitive processes, and the social context of culture and people around us. We also apply psychological knowledge to human problems in order to improve lives through avenues as varied as clinical treatments, educational initiatives, and programs to improve organizational effectiveness. In these applied settings, the actor is still the focus, but the psychologist becomes more a practitioner than a scholar.

But where are we behaving? Although philosophers might quibble, there are pragmatic reasons to believe that each of us interacts with a tangible, physical world. We can function in many places and even triumph over discomfort, but the environments we inhabit relentlessly shape us. In turn, we leave traces. These traces may be physical archives of improved spaces in which humans prosper, but we have also created a record of degraded natural systems that can imperil thousands of species, including our own. On a more positive note, however, we are also capable of saving endangered species, preserving natural beauty and ecosystems through national parks and preserves, and promoting a mutually beneficial ecosystem for the betterment of humans and nonhumans alike. Environmental psychology has its roots in the idea that things outside the individual influence thinking and behavior. We are heavily influenced by other people (i.e., the social environment) and by components of the physical setting. How our behavior and thinking interact with the physical environment is our subject matter.

A Working Definition

The inspiration of a scenic vista, the distraction of a noisy study space, the embarrassment of blundering into someone’s private territory, and the psychological devastation of natural disasters are selected examples of topics that have intrigued environmental psychologists. There are more complex formal definitions, but Gifford’s workable summary asserts that “environmental psychology is the study of transactions between individuals and their physical setting” (Gifford, 2014b, p. 2). Gifford’s definition allows a “loose fit.” The “physical setting” may be enveloping or as small as an object. It can be a building or a wilderness, as concrete as an aircraft cockpit, or as abstract as the sense of spiritual connectedness that exemplifies personally significant places. Our interest in locations may be academic, but we also care about making improvements or addressing emerging problems. “Transactions” is the deceptively nuanced term on which Gifford’s definition hinges. It acknowledges that we both shape and are shaped by the setting. In a deeper sense, transactions imply not just interactions but also a complex co-evolution of behaviors and settings. It should be clear that environmental psychology is about the context of behavior. This “context” is physical, but here our focus is the social-historical context of this sub-discipline in psychology.
Environmental Psychology: Foundation or Edge?

Humans are remarkable in modifying environments to make them habitable and supportive. There is a satisfying symmetry to the notion that physical settings form a fourth key foundation for understanding behavior, along with biological predispositions and activity, internal mental processes such as leaning and cognition, and the human and social context (Gifford, 2014a). Indeed, the first great American psychologist, William James, proposed that a key instigator of behavior was the need to survive and prosper in complex environments (Heft, 2001; Goodwin, 1999; Viney & Mullen, in press). Intriguing as it is to propose such a prominent place in the discipline, mainstream psychology has never assigned a central role to settings (Gifford, 2014a), and as an identifiable discipline, environmental psychology evolved relatively recently; it is a product of the 1960s.

We will review the direct antecedents of modern environmental psychology, but first let us consider that it might have emerged decades sooner. In the late 1800s psychology was a new approach among a small number of pioneers, and William James was one of the most important. He was an impatient scholar. First trained in chemistry and biology, James then earned a medical degree, published classic texts in psychology in 1881 and 1882, and then spent the last years of his life focused on spirituality and philosophy. Inspired by Darwin’s evolutionary theory, James also believed that psychology needed to understand the role of behavior in adapting to or functioning in changing environments (Goodwin, 1999). Thus, he embraced functional or evolutionary explanations for behavior, an important notion that emerged as an important force in modern environmental psychology.

A Near Miss

At the time of James’ death industry was prospering, organizations were becoming more complex, and technology seemed to be outgrowing human control. Importantly, his applied focus and recognition of the role of the physical environment also set the stage for what we now call “engineering psychology” or the related engineering fields of human factors and ergonomics. One of its most interesting practitioners was Lillian Gilbreth.

Gilbreth could easily have become the “first” environmental psychologist. It was a near miss. Instead, in 1917, she was the first person to receive a Ph.D. in industrial/organizational psychology, and she and her husband Frank played key roles in the integration of science and management (see Collette & Miller, 2016, in this volume). For decades after his death she continued to work as a practitioner and teacher, increasingly devoting effort to improving the efficiency of kitchens and homes. She was the friend of presidents, received honorary degrees and medals from engineering societies, was pictured on a US postage stamp, and gave birth to 12 children (Lancaster, 2004). Among her inventions were foot-operated trashcans and storage bins on refrigerator doors. Her life and career was inspiring, but she appears in this review to demonstrate some things environmental psychology is not.

In their human factors text, Wickens, Lee, Liu, and Gordon-Becker (2003), characterize human factors and engineering psychology as the analysis of the interactive process by which humans interact with complex systems, often machines or workplaces (in Gilbreth’s case, including the home). The goals of engineering psychology are to avoid system failures, to enhance productivity, to increase safety, and to improve user satisfaction. Conceptually, individual humans are just one part of a functioning system — one prone to errors at that. Gilbreth and her contemporaries were practitioners who employed standardized systems repeatedly, usually for industry clients and often
in competition with other consultants. Modern engineering psychologists continue to collaborate primarily with businesses and engineers, and theirs is a deterministic model that focuses on isolating and repairing failures, often restricted to a small number of targets like procedures, tools, or displays. As we will see, environmental psychology has been steadfastly anti-deterministic, person- rather than system-centered, based primarily in academe rather than industry, and molar or holistic rather than focused on simple cause-effect relationships. Both fields are applied, and both interact with the physical setting, but engineering psychologists usually define the setting more narrowly.

Foundations
The thread in history that includes Lillian Gilbreth and modern human factors specialists remains unbroken. Their field is growing as humans confront more and more challenges from living with modern technology. Like environmental psychology, it straddles the physical and the cognitive, but the worldviews are different. The direct precursors of environmental psychology did not emerge until the 1950s. Then, accelerating scholarly activity that followed the second world war, the excitement of the cognitive revolution, advancements in related fields, and some inspiring thinkers created the intellectual mix from which our field emerged. Two of the most important theorists who directly influenced the establishment of environmental psychology remain relevant. Egon Brunswik and J. J. Gibson were both interested in real-world perception, and both inherited William James’s pragmatic functionalism. Their theories differ significantly, especially concerning the role of cognition and decision-making, but both contributed significantly to what became environmental psychology.

Egon Brunswik (1952) was a brilliant statistician and psychologist who worried about the artificiality of laboratory studies. He understood that laboratory researchers wished to control environmental variables systematically so that causality could be assigned to particular treatment effects, but he worried that the results were artificial and ungeneralizable. Brunswik agreed that researchers could generalize their results to other participants in the same laboratory, but he questioned whether they could hope to predict how participants might behave in places other than the original laboratory setting (Cooksey, 1996). Brunswik’s prescription for psychology was not to relax our attention to careful sampling of participants; instead, he insisted that we be just as meticulous in sampling from all of the environments to which we would like to generalize results. He called this “representative design,” a concept which is closely related to external validity, or the degree to which the results of a study conducted in one situation can predict those in other circumstances. Perhaps we are left with two unpalatable choices: precisely defining statistical relationships between variables measured in controlled, but artificial laboratory situations (internal validity), or maximizing external validity by seeking to account for the overwhelming complexity of real-world situations. No careful psychologist would want to sacrifice either definition of validity, but application and generalizability lie at the core of environmental psychology. Somebody has to emphasize generalizability and external validity. For some this is a central part of any definition of environmental psychology.

Brunswick’s world may be more realistic and generalizable, but it is also more complex. An array of cues bombard the perceiver and help him or her understand and make decisions about the environment. It would be surprising if a single cue led to a perfectly reliable and complete understanding, so Bruswik said that each piece of information had a particular probability of being accurate. His probabilistic functionalism, says that environmental circumstances do not determine behavior, but can only make some behaviors more probable. We would be foolish to underestimate the influence of a hot classroom on a long lecture, a bright spring day on a gloomy
mood, or the well-learned prohibition against singing in libraries. Determinism certainly fits with the paths of influence assumed by standard experimental design in which independent variables unidirectionally cause changes in dependent behavior. However, much as we — architects, managers, or psychologists — might like to assume we wield such power, humans are not passive leaves tossed by the zephyrs of the environment. Thus, we might join Brunswik (1952) in understanding the role of environments as making certain behaviors more probable rather than determining them.

**J.J. Gibson: Function and Affordances**

Conventional approaches to perception assume that a stimulus activates nervous system receptors and that sensory stimulation across many receptors creates patterns. The patterns are then compared to memories of experiences in order to make perceptual judgments. According to this convention, we need a cognitive step to construct meaning by interpreting the stimuli that impinge on our sensory system. Controversially, Gibson (1979) said that perception of the environment requires almost no interpretation: meaning exists in evolved interrelationships between organisms and the environment, and the world conveys information quite directly without elaborate processing by higher brain centers. Through a process of direct perception we perceive the relevance or usefulness of an object, properties Gibson termed **affordances**.

As we move through the world, we experience surfaces, textures, edges, and angles from a variety of perspectives. With no real thought we extract their potential functionality. For example, if an object is solid, inclined toward the ground at an angle of other than 90 degrees, and if at least part of it is higher than the organism, the object is automatically recognized as **affording** shelter. What affords shelter for a human does not necessarily function the same way for a fish, so affordances are species-specific. Presumably, animals and their affordances have evolved together to create a harmony between species and environments.

Gibson’s concepts of affordances and direct perception are controversial because they are at odds with the reductionist leanings of much of modern experimental psychology (see Heft, 2001 for a more complete discussion). Some have adopted an intermediate position that only broadly accepts the idea that humans and other animals perceive environments through a functional-evolutionary filter. These theorists say that we are attracted to environments that afford survival and efficient functioning and that we are likely to feel comfortable and experience lessened stress when in their presence. Thus, the process of identifying affordances may be less automatic and more cognitively mediated. Gibson’s theory, especially the more generic use of the term “affordance,” remains current along with “biophilia,” or love of nature, which is similarly automatic, but more generic (Kellert, Heerwagen, & Mador, 2008).

**Putting Things Together**

Bell et al. (2001) assert that the single most important characteristic of environmental psychology is its emphasis on studying environment-behavior relationships as units rather than separating them into distinct components. This view is very similar to that proposed by the Gestalt psychologists whose critical insight is often paraphrased as “the whole is different than the sum of its parts.” The Gestalt psychologists saw variables as intertwined, mutually influential, and synergistic. One word for this perspective is **holism**, and holism is the antithesis of **reductionism**, which says that we understand phenomena by breaking them into smaller and smaller parts for analysis.
An Example: Roger Barker’s Ecological Psychology

In the middle of the 20th Century Roger Barker began constructing an “ecological psychology.” His decades-long research program has not been particularly influential on mainstream psychology, but it does serve as one accessible illustration of many of the issues that underlie environmental psychology. He acknowledged a number of inspirations (Barker, 1990). Importantly, he spent his post-doctoral years in Iowa working with the renowned Gestalt-oriented social psychologist Kurt Lewin. Lewin (1951) had conceptualized the environment as a key determinant of behavior, even though his emphasis was primarily on the social environment. Barker maintained a life-long commitment to holistic analysis of behavior, a fundamental tenant of the Gestalt view. Barker also acknowledged the influence of Egon Brunswik and the importance of the real-world ecology and representative design. Perhaps as influential on Barker, however, was Louise, his eventual spouse. A marine biologist, Louise had always perceived the ocean, not as a laboratory, but as the ideal place to study sea life. Barker (1990) reported being amazed that there was so little evidence for a similar position in psychology.

By the end of World War II Barker was already well known for his laboratory demonstration of frustration-aggression in children co-authored with Tamara Dembo and Lewin (1941), but he became committed to creating a psychological field station analogous to the ocean laboratory in which Louise worked. In 1947 he and his associates established the Midwest Field Station in a small Kansas town. For more than two decades they carefully recorded the rich patterns of behavior, mostly by children, in places like the Sunshine Café, and high school basketball games.

Eventually, the influence of different settings became apparent (Barker & Wright, 1954). As a child moved from one setting to another, his or her behavior also changed. Across a number of different children, certain localities were commonly associated with certain behaviors. Barker called these locations behavior settings and recognized them as the physical source of environmental influence. At a time when most of psychology was trying to eliminate the influence of settings through experimental control, Barker was documenting their powerful effects. Indeed, Barker and Wright (1950) concluded that the immediate environments of children were more important in determining their behavior than were individual characteristics such as personality. That is, two children in the same place behaved more similarly than did one child in two different places! There were exceptions, but “loud” children were generally quiet in church and “quiet” children were generally noisy on the playground. Behavior settings occur naturally, and they usually maintain their existence in spite of variations in individual occupants (Heft, 2001). Seldom is there an official “script,” but taken collectively, people perform according to predictable patterns in each specific physical setting. In sum, behavior settings reflect the mutual influence of the physical milieu and standing patterns of behavior. In healthy behavior settings, milieu and behavior evolve together and are mutually supportive.

Barker’s work anticipated what we now know as environmental psychology and eventually became identified with the field. Like Brunswik and Gibson, and unlike many of his contemporaries, Barker emphasized the role of complex, holistic environments in shaping and constraining behavior. His theory encompasses both the physical environment and its mental representation. He also emphasized mutual evolution of the relationship between behaviors and settings, making his theory one of the very best examples of a transactional approach. His research is inherently both theoretical and applied, and it shares both the strengths and weaknesses that result from a focus on external validity. He was more likely to describe himself as an “ecobehavioral scientist” than as an environmental psychologist, but during the later part of his career Barker contributed to journals and books in the young field.
Converging Paths: Environmental Psychology Emerges

Barker’s efforts were part of a three-decade surge of multidisciplinary research that became the seedbed for emergence of environmental psychology. For instance, Anthropologist E. T. Hall (1959, 1966) wrote provocatively about the way humans modulate personal space, and ethologist John B. Calhoun (1962, 1964) reported the disturbing results of studies of many rats and mice in a common lab enclosure that he thought extrapolated to humans in crowded cities. At about the same time Kevin Lynch (1960) invigorated both planning and cognitive psychology with the publication of The Image of the City, an influential account of the way people remember and find their way around environments. Indeed, the term “environmental psychology” originated in studies in the 1960’s that showed how modifications to the arrangement of a Canadian psychiatric facility could bring about more favorable treatment outcomes (Osmond, 1957).

By the mid-1970s, a few psychology departments offered formal programs of study in environmental psychology, and many more departments began to offer courses with that title. Journals were established and professional organizations such as the Environmental Design Research Association (EDRA) and Division 34 of APA, the Society for Environmental, Population, and Conservation Psychology, arose and gave the field legitimacy. In support, textbooks also began to appear. At first these were edited readers (e.g., Proshansky, Ittleson & Rivlin, 1970), but in 1978 Bell, Fisher, and Loomis (1978) published a traditional textbook that organized and defined most of the enduring themes of the field (Knowles, 1979).

There is no shortage of problems to address or research opportunities to explore, but since the mid-1970s environmental has remained at the edge of psychology, never achieving the centrality in college curricula enjoyed by topics such as cognitive, learning, physiological, or social psychology (Gifford, 2014a). Occasionally this has been a source of frustration; we know that surroundings do affect people, and while acknowledging these effects, it is not clear that mainstream psychology has embraced their importance (Gifford, 2014b). Elsewhere, Gifford observes that most psychology departments do not have a single faculty member trained in the field (2014a).

Occupying a disciplinary edge (as opposed to centrality) does not necessarily imply exclusion. An “edge” seen differently implies a location on the boundary of neighboring disciplines. Boundaries can be challenging, but they are also the sources of creativity and insight. Environmental psychology has acted as a liaison, exporting psychological principles and applications from the core of psychology to new settings and problems, while adopting ideas and techniques from other fields (Bell et al., 2001; Gifford, 2014b; Steg et al., 2013). For example, environmental perception, with its holistic emphasis, is relevant to the work of landscape architects, urban planners, builders, and managers of natural areas. The study of the effects of the physical environment (e.g., noise, heat, and space) on behavior is relevant to the interests of industrialists, lawyers, and architects.

To our benefit, innovations from our academic siblings have also had important influence. Like most data-driven fields, environmental psychology has benefited immensely from the explosion of computer access and power. Embracing holistic, molar approaches, environmental psychology tilted toward multivariate analysis — measuring relationships between multiple, often uncontrolled variables. These approaches often result in greater computational burdens. Egon Brunswik’s quest for representative designs might have been more influential in the present era of desktop computers and large data sets. Geographic Information Systems (GIS), a computerized mapping approach from geography, allows researchers to record a galaxy of spatially-based phenomena, including behaviorally-based variables such as participants’ areas of perceived pleasantness, wildness, or danger.
Recent findings from neuroscience illustrate a particularly powerful new result with unfolding implications. As we mentioned, for many years environmental psychology served as a liaison between disciplines who shared an interest in the role of memory, images, and so-called cognitive maps. Urban planners, designers, and others sought to understand and improve the way people organized and found their way around (primarily) urban environments. Meanwhile, academic cognitive psychologists were interested in the processing of images, and the actual nature and location of memory for spatial facts. Recent studies by neuroscientists demonstrate a result that would have been very surprising two decades ago: Certain areas in the brain seem to support spatially distributed neural maps that roughly correspond to surrounding environments (e.g., Fyhn et al., 2008). John O’Keffe, May-Britt Moser, and Edvard I. Moser received the 2014 Nobel Prize in Physiology for this work.

A Small Fish in the Current

A limited number of timely topics or research opportunities may have a disproportionate effect on a field so small. At different times in the past five decades one might have concluded that environmental psychology was especially about architecture, privacy and territoriality, ambient stressors such as crowding, temperature, or noise, or appreciation for natural environments—it remains all of these, and some threads, once established, have persisted over decades. For instance, the availability of funding from U.S. government land management agencies such as the Forest Service, part of the United States Department of Agriculture, has nurtured research programs in landscape aesthetics, visitor management strategies, and investigations of societal and individual benefits of contact with nature and leisure.

More recently, sense of place or place attachment have become prominent research topics. These are both highly evocative and tantalizing in their imprecision (Hidalgo & Hernandez, 2001; Low & Altman, 1992; Scannell & Gifford, 2010). To illustrate the connotative power of the term “place,” consider the difference between “house” and “home.” Fluid, subjective, idiosyncratic, and often elusive, the concept of place has an uneasy fit with science, and yet places clearly are important to understanding human perception and behavior. Methodologically, place assessments are likely to be more descriptive, subjective, and holistic than traditional measures typically discussed in psychology classes. Finding a way to examine places in ways that are both meaningful and objective is difficult and yet important. Place research also demonstrates many of the characteristics of environmental psychology: dedication to holistic analysis, suspicion of simple unidirectional cause-effect relationships, an emphasis on real-world environments, and unwillingness to abandon important behavioral questions just because they are vexing.

Above all others, however, emerging issues of environmental degradation and sustainability have become both prominent and imperative research topics. The surge in sustainability research has been the source of energy, growth, and some challenge. There is no doubt about its importance, but the sheer volume of published sustainability research diminishes the apparent prominence of traditional topics such as architectural psychology or perception and spatial cognition. According to Gifford (2014a), research in other topics such as architectural psychology, sense of place, and spatial behavior has continued to progress, but sustainability research has blossomed. Although issues of sustainability have dominated the two primary journals, some research seems to have moved back to the disciplinary borders where those who identify as environmental psychologists are still finding many opportunities for scholarship and publication on topics such as the influence of building design on occupants, noise impact on learning and productivity, and consequences of crowding, ambient temperature, or views of nature. The situation may be more complex, however.
We have always recognized that the direction of influence between humans and environments can go either way: Environments affect human behavior, and human behavior changes environments. However, the unique contribution of environmental psychology has been to investigate environments as components of behavioral interrelationships rather than as mere settings or targets for them. Not inevitably, but usually, sustainability efforts have involved changing behaviors rather than environments. Some wonder if environmental psychology has become a “test bed” for applied social psychological research that matches the content, but not the theoretical position of environmental psychology (Gärling, 2014a). Despite content similarities, we saw that environmental psychology has remained separate from engineering and human factors psychology. Many sustainability issues have always been part of our field; many should contribute their energy to a perspective that we believe is underappreciated. However, it is unclear whether we will assert a similar distinction from content that is clearly “environmental” but that does not bear allegiance to the world view of its founding.

Trends since the Inception of Environmental Psychology

Following the initial use of the term “environmental psychology,” numerous researchers began applying the term to other types of interactions between humans (as well as other species) and their built and natural environments. As with the early psychiatric hospital environment studies (Osmond, 1957), the goal of the research was rather applied: Could better outcomes be achieved by changing elements of the setting; i.e., could modifying the environment improve the outcome? We list below some of the more well-studied topics and findings examined by subsequent environmental psychologists.

- What is the impact of noise in the home, work setting, school, or neighborhood?
  - Noise is higher in homes, schools, and neighborhoods close to freeways and airport runways and impairs hearing, reading scores, and work performance (Cohen, Glass, & Singer, 1973; Glass & Singer, 1972; Evans, Hygge, & Bullinger, 1995).

- What is the impact of crowding and high population density?
  - Crowding is often associated with higher rates of crime and disease, but higher populations may provide more cultural and educational opportunities such as larger museums, parks, and arts settings as well as specialized medical care (Altman, 1975; Baum & Paulus, 1987; Hall, 1988; Kostof, 1987).

- What is the impact of high outdoor or indoor temperatures on people?
  - High temperatures can be associated with poorer work performance and increased crime and violence (Anderson, 1989; Sundstrom, 1986).

- What can be done to encourage more responsible use of natural resources and reduced waste production?
  - Environmental psychologists regularly test community programs to reduce natural resource consumption, encourage recycling, and promote sustainability (Stern, 2000; Stern & Oskamp, 1987).

- Are there human benefits to interacting with natural settings?
  - Green spaces in the city and visits to national parks and wilderness settings are associated with numerous physical and psychological benefits (Driver, 1996; Hall, 1995).
Parallel to the above questions and interventions spawned by environmental psychologists and other investigators, scientists have become more and more concerned that human activity is having disastrous effects on the natural environment (e.g., Rachael Carson’s *Silent Spring* and other scientists’ work detailed evidence that industrial chemicals, particularly pesticides and herbicides, were harming beneficial species), and thus was spawned the “sustainability” movement. Today, much of what one sees in environmental psychology journals is how behavioral and persuasive interventions can contribute to sustainability solutions. We recommend that interested readers examine recent issues of journals such as *Journal of Environmental Psychology* and *Environment and Behavior* to read more examples of where the field of environmental psychology is headed today.

**Vignettes**

1. **How Important Is the View from a Hospital Window?**
   
   A major thrust in environmental psychology has been to look at natural versus built environments. As we have noted, the origin of the field has been with built environments (how does arrangement of furniture affect therapeutic outcome in a psychiatric facility?). Numerous studies have examined classroom layout (e.g., rows of desks vs. desks in a circle vs. clusters of desks and tables), offices (e.g., private office vs. 2 or 3 workers to a space vs. dozens of workers in a large room), homes (e.g., 1 or 2 rooms vs. 6 vs. 12 rooms), residence halls (e.g., corridor style with a common bathroom vs. 2 or 3 students in a unit with its own bathroom), museums (e.g., a large room with dozens of display cases & small print vs. interactive displays in a sequence along a specific path with audio explanation), and so on. One continually examined setting is hospitals: Are there differences in patient outcomes if one has a private room vs. a two-patient room with a curtain divider vs. a ward with 6 or 12 patients in it? Another issue is whether bringing natural elements into the room or lounge area has a therapeutic benefit: Do potted plants, an aquarium, or even pets improve medical outcomes?

   One widely cited study from the prestigious journal Science in 1984 has been particularly influential. Psychologist Roger Ulrich examined outcomes of surgery patients who after surgery were assigned to a room that looked out only on a brick wall, versus patients whose room had a view of a natural green space. Those who had the view of nature spent fewer post-operative days in the hospital and used fewer doses of painkillers. In another study, Verderber (1986) found that hospital patients expressed a clear preference for rooms with a natural view.

   Baird and Bell (1995) describe an anecdotal report that confirms the pull of a window in a hospital room. Carol Baird was a popular, young psychology graduate student and Intro Psych instructor who was diagnosed with leukemia at the end of the semester. She went through numerous rounds of chemotherapy and eventually a bone marrow transplant before succumbing to the disease at age 26. Every time she was hospitalized she requested a specific room. She was familiar with Ulrich’s research, and the view out the window of her preferred room had a number of unique aspects. For one, it did indeed have a nice view of nature—trees and shrubs and green grass and flowers at some times of the year. On the horizon she could see the trees that marked the neighborhood where she grew up and her childhood home where she would return after each discharge from the hospital. Yet it also had a view of the largest cemetery in the Western U.S., and she still preferred that view. When the medical staff finally determined that she would not survive the disease, she chose her final resting spot in that cemetery, in line with her childhood home and her favorite hospital window. When informed of this story, Professor Ulrich commented that
centuries ago in Europe it was common for cemeteries to be placed around hospitals and that many of them are there today (personal communication, April, 1998).

If you visit a modern hospital today, you will likely see much incorporation of nature within and outside the facility. Such design features are not frivolous or the whim of the architect or the staff but are guided at least in part by the proliferation of research showing therapeutic benefits of encounters with nature and potential cost savings in patient care. Visit your local health facilities and see for yourself—their designers likely believe that incorporating nature makes a difference.

2. Dealing with an Environmental Conflict of Cultures: Noise and Aircraft Overflights in National Parks

The mission of the U.S. National Park Service (and those of other nations) is twofold: to preserve parks and wilderness areas including their native plants and wildlife and to provide for the enjoyment and inspiration of human visitors. These dual mandates were developed in the early 20th century before the widespread development of ground and air transportation that depends on burning fossil fuels in an engine. Today, transportation noise—although necessary to get most of the millions of visitors to and around parks—is a major source of complaints from visitors and of concern for park management due to its impact on wildlife (e.g., human-produced sounds can interfere with reproduction and reduce some wildlife populations) and humans alike. The entire issue Winter 2009-2010 issue of Park Science is devoted to methods of protecting the park natural soundscape and dealing with extraneous noise (US National Park Service, 2009-2010, Winter).

One study (Miller, 2008) showed how the flight paths of 2,000 jet departures in one hour would overlay almost all of the U.S. Backcountry hikers in the Western U.S. are there in part for solitude, but jet sounds and contrails are common throughout the day—so common, in fact, that the absence of jet sounds and contrails made those hikers realize something was very, very wrong on September 11, 2001 (Bell, Mace, & Benfield, 2009-2010).

As Bell et al noted, there are many complicated issues associated with any attempt to regulate overflights in national parks. One is simply economics. Grand Canyon Airport is the third busiest in Arizona (after Phoenix and Tucson), due to the volume of tourist aircraft. In addition to typical airline flights, Grand Canyon and other parks are spectacular from the air, and tourist flights out of Grand Canyon Airport and from private helicopter pads are very popular. Visitors with mobility disabilities can see far more from an aircraft. Yet, these tourist flights produce far more noise on the ground than commercial jets flying 30,000 feet above (Miller, 2008). Many aircraft tours of Grand Canyon originate from Las Vegas; one 1996 study indicated that Grand Canyon air tours from Las Vegas contributed half a billion dollars per year to the southern Nevada economy (Schwer et al., 2000).

Finding a mutually agreeable solution to the noise from aircraft overflights is not easy. Let’s look at another twist on the problem, this one cultural. For this we fly from Arizona almost 24 hours to Uluru-Kata Tjuta National Park in central Australia, land at the adjacent airport outside Yulara Resort, and visit the geological formation known as Uluru (formerly known as Ayers Rock). If you look at an aerial photo of the area on the Internet, and zoom in on the Uluru formation, you will see the unmistakable traces of a landing strip almost up against the mountain. For many decades before the new airport was constructed, bush pilots would fly tourists very close to Uluru and land at the old airstrip. At the request of the local Anangu people, the airstrip and adjacent lodging were removed from the base of Uluru and relocated about 20 kilometers away to the Yulara area, which can handle larger jet aircraft and more tourists. Tourists are bused to Uluru where they receive cultural information talks, purchase crafts, and view the sunrise and sunset. They can also
climb to the top of Uluṟu, which many natives and tourists have done over the years. Yet at the Visitor Center in the Yulara Resort, there is a sign suggesting that tourists not climb Uluṟu out of respect for its spiritual significance in the Aṉangu culture, and instead fly around and over it in a tourist helicopter, despite the noise caused by these flights.

You might try some experiments yourself to see what sorts of variation you can find in how disturbing or pleasing various sounds in parks and recreation areas are perceived by different types of people. Sound recordings are available at http://www.nature.nps.gov/naturalsounds/ and you can check the various Mace et al. references below for rating scales and potential sources of sounds (nonhumans, human adults, human children, vehicles, and so on).

3. The Crossroads Sitting Stones

By any measure, the Crossroads Sitting Stones project was a very modest initiative. Nevertheless, what began as an illustrative class project demonstrates a direct application of the principles of environmental psychology to an everyday opportunity. The story began when our university razed an unsightly old building, filled the foundation hole, and tossed grass seed at the void; a new quadrangle emerged. Five years later, there were still no formal plans for the space. This was particularly surprising because it is a crossroads that connects the student center, the largest dining hall, a new science building, and the campus bookstore. It is the only transition between the intentionally unkempt sustainable swale of native trees and wildflowers at the entrance to the science building and large concrete and stone plazas outside the student center. The open space was used because a few times a year organizations erected large tents for concerts and other events. Furthermore, each spring the university cleverly dispersed wooden Adirondack chairs and picnic tables around campus, and some of these inevitably migrated to the new quad.

Nevertheless, the space needed an anchor. For three semesters, students in an environmental psychology course proposed ideas to energize the quadrangle, but nothing much came of their plans for artificial waterfalls, barbeque pits, outdoor classrooms, or vegetable gardens. Things changed when the President announced that he was seeking applicants for “campus innovation grants.” Four of us, two students from the class, the professor, and the Assistant Director for Grounds, decided it was time for action.

Our first inspiration, and the reason we chose to work with stone, was J. J. Gibson’s (1979) idea of affordances. As noted in the chapter, Gibson argued that we humans are attracted to places that help us function. For instance, a solid surface at an appropriate height affords sitability. It calls to us: “sit here.” We wanted flexible spaces that would facilitate conversations, but we also wanted individuals to be able to find comfortable spaces on the periphery. This begged for the application of another theory we have highlighted: insights from the early studies of the mental health facility in Saskatchewan (Osmond, 1957). That research demonstrated that chairs can modulate the sociability of spaces, and we sought the same result with immovable stone by allowing people to sit facing any direction at several heights on stacked rock. Heeding the advice of the environmental psychology classes, we proposed to tuck the stone groupings under a grove of small trees for shade and to take advantage of a small hill to facilitate views and people watching. As we finished our proposal two big constraints surfaced: the tents were an established tradition, so we could not encroach on spaces reserved for them, and the grant budget was tiny.

We got the grant, but we still had work to do. How tall should the seats be? One of the involved students found this and other answers in A Pattern Language, the masterwork of the architect Christopher Alexander, an important advocate of user participation in planning (Alexander, Ishikawa, & Silverstein, 1977). Would the student leadership, those who represent users, support a project on the outdoor space at the entrance to the student center? The second involved student
was a member of student government, and he helped reassure his cohort that our plan would be an asset. How could we possibly pull off a complete version of the project on a tiny budget? Our grounds manager carefully assembled resources, made deals with contractors, and assigned workers with free hours to the project. Then, on the appointed day, giant trucks dumped stones in the center of campus. The sound was like a slow explosion. The ground shook, and people craned their heads out of nearby buildings to see the source of the noise and dust. In that moment we might have had second thoughts. The project was very public, and it is hard to retreat from mistakes made with 48 tons of limestone!

The resulting design created a variety of spaces. One stone chair is suitable for an individual and another serves three, but most central to the plan are three islands of stone that allow small groups to congregate. One, two, or three of the “islands” can also combine into a larger space for a performance or class. Informality and freedom were central themes. People can watch activity spilling out from the student center below or sit on another side to enjoy a relatively remote experience in a shady grove of trees.

Did it work? Anecdotally, yes. We finished the project in early October of 2016. In the remaining warm days of fall it was easy to find people reading, eating, or talking among the stones. Gibson was right: there were no instructions, but the stones afforded sitability. Seminars used it; a few weeks later someone sponsored a pumpkin carving session. As the weather chilled, leaves fell from the grove’s tree canopy, releasing the expected burst of warming sun. That wasn’t enough—chilled rocks are not an easy place to lounge. Soon, however, groups of the wooden chairs that the university intentionally leaves strewn across campus began to migrate to the stones. Footrests or shelves rather than seats, the rocks still served as a setting for lunches, chats, and people watching. Finally, even the wooden chairs were stored for the winter. Nearly abandoned for now, we think the stones still punctuate an otherwise dull space. We will soon find out. After about 18 months, when memories of the old space fade and familiarity replaces the “newness”, another environmental psychology class will assess the space as part of a Post Occupancy Evaluation.

We have found what Roger Barker would have predicted, a behavior setting is evolving. Groups adopt the space for classes and special events, and individuals figure out the most comfortable spots. People may amend it, adapt it, or adapt to it, and all of this behavior will be choreographed by the ebb and flow of seasons and the academic calendar. We don’t yet know how the stones fit the ongoing patterns of behavior, but they illustrate just the sort of human environment transactions Barker and environmental psychology highlight.

References


¹ Authors’ Note: Dr. Carol Lynne Baird received her Ph.D. posthumously in 1994 from Colorado State University, and a scholarship endowment she and her family and friends established supports the dissertation research of other graduate students.


A Short History of Industrial/Organizational Psychology

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Industrial/Organizational psychology, occupational psychology, business or work psychology: regardless of what we call it, I/O psychology has brought a wealth of knowledge to economics, psychology, human factors engineering, and management theory and practice. I/O focuses on the behavior of individuals in the workplace and employs psychological principles and theories to help explain, predict, promote and reduce behaviors. Early I/O psychologists sought to improve performance, quantify job placement, promote better management, influence employee motivation, and define the power of advertising. These aims have continued up to the present and have been honed and adapted over time to flourish into a unique and important field of study (Hergenhahn, 1992).

The history of I/O psychology as a science is really a story of the last century. As a science it is quite young, but has produced some very fascinating works in its short lifetime. Hugo Münsterberg began his pivotal book *Psychology and Industrial Efficiency* by stating “Our aim is to sketch the outlines of a new science, which is to intermediate between the modern laboratory psychology and the problem of economics” (Münsterberg, 1913, p. 1). It was clear early on that I/O psychology would serve to maximize efficiency in all aspects of the workplace by using the theoretical frameworks of psychology. The onset of the industrial revolution fueled the primary growth of I/O psychology. As large scale factories began to pop up, it became more and more important to business owners to take full advantage of machines that improved manufacturing efficacy and also to manage factors that improved employee performance (Hergenhahn, 1992). However, the first I/O psychologists were not particularly interested in employees’ subjective well-being. Rather the focus was on how to modernize jobs and match employees to the most suitable job, given their individual skill set. In this respect I/O psychologists worked to make sure that the organization functioned as efficiently as possible by plugging employees into positions where they could best perform. Efficiency was the name of the game, and early I/O psychologists were the orchestrators (Hergenhahn, 1992).

The Early History

The earliest I/O studies can be traced back to Bryan and Harter (1899). In their original study they measured the performance of telegraphers who were sent concise messages using Morse code and then deciphered the code into words (Bryan & Harter, 1899). They found that all of their participants went through periods of growth in performance as well as plateaus in which they showed no improvement. Bryan and Harter interpreted these periods of no growth as changes in the process of learning. Although this concept has been widely debated (Kjerstad, 1919; Viviani & Terzuolo, 1982; Robertson & Glines, 1985), the concept of automaticity, or motor expertise, has persisted in the science well beyond this initial work. Bryan and Harter legitimized the study of the motor processing of skilled labor in addition to studying how individuals incorporated automatic processing into their skillset. Their work highlighted the variability of performance outcomes, and stirred a theoretical debate on performance improvement (Lee & Swinnen, 1993).

Another early pioneer in I/O psychology was Frederick Winslow Taylor. Taylor was an engineer who observed the productivity of steel mill workers with whom he worked. In particular he observed some inefficient practices that many of them used. He focused on the waste of movement many workers used to complete particular aspects of their job. Taylor then studied how the individual movements of laborers performing different jobs resulted in the least amount of wasted...
In the early part of the 20th century, Taylor used his new scientific management system to find ways to more efficiently conduct manual labor jobs. He also stressed the importance of selecting the right person for a job and training him or her precisely to best perform a given task (Drucker, 1974). Although Bryan and Harpers’ (1899) work predates that of Taylor, he is widely known as the first person to study human behaviors in an organizational setting.

A person who is recognized as one of the founding fathers of industrial-organizational psychology was Hugo Münsterberg. An admirer of Taylor, Münsterberg worked on honing many of the early concepts that were first introduced by Taylor (Hergenhahn, 1992). Münsterberg proposed that psychology could be utilized in many different industrial settings including management, employee motivation, job performance, and advertising. Münsterberg’s books Vocation and Learning (1912) and then Psychology and Industrial Efficiency (1913) are considered to be the foundation of what would come to be known as industrial-organizational psychology. Münsterberg’s books covered many topics, including hiring employees who had mental capacities and personalities most appropriate to particular types of jobs, as well as restructuring work environments to promote efficiency. For example, one study found a negative correlation between worker efficiency and talking on the job (Münsterberg, 1913). In response to these findings Münsterberg designed an optimal work environment that inhibited the ability of employees to converse (Münsterberg, 1913). Münsterberg This was considered the best way to increase performance, motivation, and retention. These methods served to increase worker efficiency and promote a stable, manageable, business environment (Landy, 1989). Münsterberg outlined three pivotal questions in his 1913 work that stated the core questions for efficiency. First, “how can we find the men whose mental qualities make them best fitted for the work which they have to do?” Second, “under what psychological conditions [can we] secure the greatest and most satisfactory output of work from every man?” Lastly, “how [can we] produce most completely the influences on human minds which are desired in the interest of business?” More plainly, how can we find the best person who will produce the best work in the best interest of the employer (Münsterberg, 1913, p. 23-24)?

For Münsterberg, the most important question was the first one. The difficulty in assigning the proper individuals to proper vocations was not lost on Münsterberg. In fact, he outlines many reasons why this process is so difficult. He noted that particular characteristics of an individual cannot be considered alone to determine whether or not a person is suitable for a position. For example, education, skills or technical abilities, training, recommendations, or first impressions alone cannot be considered exclusively or as independent factors for predicting success in a position (Landy, 1989). Rather, Münsterberg argued that these factors may serve to blind employers to the full potential strengths and weaknesses of employees. In reality, “the mental dispositions which may still be quite undeveloped and which may unfold only under the influence of special conditions in the surroundings” (Münsterberg, 1913, p. 28). In other words, other factors must be considered to best determine if a specific individual is right for a particular position.

Over time it may be found that an individual would never be a good fit for the job he or she was given, even if his or her credentials suggested otherwise. It is at this point Münsterberg saw the greatest challenge. Once a person has become invested in a position for which he or she is not suited, it is much more difficult to train him or her effectively for a position that does fit his or her skills (1913). According to Münsterberg, this is because young people are not very adept at introspection. They pick vocations based on personal interest or preconceived notions. They are given very little time to find out their true strengths and weaknesses, and the education system does not serve these functions. Once they do find their strengths and weaknesses, it is often too
late to make life-altering decisions to change vocations (Hergenhahn, 1992). Münsterberg’s influence was far reaching and still influences I/O psychology.

In response to the applied works of people such as Münsterberg, Bryan, and Harter, James McKeen Cattell founded the Psychological Corporation in 1921. One of Cattell’s aims was to have psychology seen as a science on the same level with the physical sciences like biology and chemistry. Cattell received his Ph. D from Leipzig University while studying under Wilhelm Wundt. On his return to the United States, Cattell worked for a few years at the University of Pennsylvania, after which he spent the next quarter century at Columbia University. There he commissioned his “mental tests” that were intended to gauge the potential success of incoming freshman (Cattell, 1890). Later, a student of Cattell found his tests to be unreliable and replaced them with Alfred Binet’s intelligence tests. At this point, Cattell’s focus shifted to work on administrative functions, science editing, and the creation of a method for ranking employees based on merit (Cattell, 1904). In 1917 he and a fellow Columbia professor Henry Wadsworth Longfellow Dana were fired for speaking out against United States conscription policies (Wheeler, 1917), although some claim it was for continuously challenging and belittling his colleagues and the president of Columbia University (Landy, 1997). Cattell later won a settlement in court for this action. This settlement provided the funding for founding the Psychological Corporation that used applied psychology in businesses to promote efficiency. While he owned the Psychological Corporation, most of the profits were returned to psychologists to conduct further research in the area of applied psychology (Hothersall, 1995). Although Cattell did not reach the level of success he had dreamed for the Psychological Corporation, the company, once sold, did find success under more experienced applied psychologists. Cattell taught such notable students as Edward Thorndike, Walter V. Bingham (who later served as director of the Psychological Corporation), F. L. Wells, who went on to help construct the Army Alpha Intelligence Test, and Margaret Washburn, who was the first influential female experimental psychologist, although the extent of Cattell’s mentorship was limited since women could not register at Columbia. Washburn was allowed to attend lectures but could not earn credit. After a year, Cattell encouraged her to transfer to Cornell University to work with Edward Titchener and it is from Cornell that she earned her degree. (Schultz & Schultz, 2008).

Another of Wundt’s students, Walter Dill Scott, also played an important role in the early history of I/O psychology. In 1900, Scott received his Ph.D. from Leipzig University. After he returned to the United States, he took a position at Northwestern University ultimately becoming president of the university (Schultz & Schultz, 2008). Alongside Walter Bingham, Scott worked extensively at the onset of World War I to develop quick and effective tests to determine new recruits’ mental capacities and optimal military assignments. Although Scott’s vision was not initially accepted by military generals, his efforts were eventually determined to be a valuable asset, and he was awarded the army’s Distinguished Service Medal (Hothersall, 1995). Although Scott’s contribution to intelligence testing is notable, his work on the psychology of advertising is often seen as his most important contribution to I/O psychology and reverberates in business practices today.

Soon after taking his position at Northwestern, Scott, at the request of some advertising executives, began work on ways to incorporate psychology to more precisely direct their advertisements. Scott’s book, _The Theory and Practice of Advertising_ was the first book on the subject of applying psychology to advertising techniques (Schultz & Schultz, 2008). Scott argued against the idea that people were rational consumers. From his perspective, there was a what he called the law of suggestibility that served as a vital mechanism in advertising (Scott, 1916). According to Scott (1916), consumers could be easily influenced by three factors of suggestibility: emotion, sympathy, and sentimentality. These three factors work to persuade consumers and lead
them to make less than rational purchasing decisions. Advertising in this sense is principally a persuasive device rather than a conduit to transmit information about a product. However, for Scott’s persuasive message to work it was necessary for the suggestions to be available to consumers in a variety of conditions (Schultz & Schultz, 2008). Although Scott’s theoretical framework seemed to follow a more peripheral route to persuasion, he in fact argued for what he called “direct commands.” These commands required a precise and direct connection between the consumer and the utility of the product. He also suggested the use of return coupons to ensure customers would come back in the future. His influence in advertising has been adapted and honed throughout time, and is an important foundation for advertising today.

In 1915 a student of Cattell, Walter V. Bingham founded the first Applied Psychology program at the Carnegie Institute of Technology. Bingham’s work on intelligence led him to consider three core principles that made intelligence measurable: the level of difficulty of problems one can solve, the range of problems a person can solve at a particular difficulty level, and how quickly the individual can solve those questions (Bingham, 1937). Bingham believed that heredity was the most predictive factor in terms of intellectual development. Furthermore, he believed that the power of the situation, or one’s environment, only modified existing intellectual potential within an individual (Bingham, 1937). For example, an individual might be innately intelligent, but fostered in a cognitively unstimulating environment. Although Bingham was a supporter of eugenics his focus on environmental factors set him apart from intelligence researchers such as Goddard or Yerkes. In terms of measuring intelligence, he took a practical tactic. In his own words,

A person planning his educational or occupational future is looking forward, not back. “How intelligent is he now?” That is the first question. Then, what does that fact indicate as to his probable intelligence in the future? In other words, what is his ability to learn the things he will need to learn in order to enter this occupation or that, and what will be his ability to conduct himself intelligently and make progress once he has begun (Bingham, 1937, p. 40).

Bingham often criticized theorists like Henry H. Goddard, who claimed to be able to judge individuals’ intelligence by simply looking at them. In fact, he warned against this sort of short-sighted judgment, citing external factors such as poor eyesight, demeanor, or poor nutrition at the times of visual, or even written, assessments (Vitales, 1974). For example, a person could quite confidently conclude that a “stupid looking” person with a speech impediment is actually very intelligent if she had in fact graduated with honors from a good institution and had published various articles for which she had been paid (Bingham, 1937). Bingham’s role in applied psychology brought a practical and multifaceted view to the subject of intelligence. Not only did he dissuade others from what he considered ineffective science, he provided more functional methods for assessing intelligence scientifically.

Australian-born psychologist and organizational theorist Elton Mayo brought a slightly different perspective to the study of I/O psychology by introducing the concept of human relations. Mayo received his Bachelor of Arts degree from the University of Adelaide in 1910 while working under Sir William Mitchell, and in 1911 he became a foundation lecturer in mental and moral philosophy, a post he held until 1922 (Bourke, 1982). In 1923 he made his way to the University of Pennsylvania’s Wharton School of Business with the help of a Rockefeller grant. There he was able to conduct one of his most pivotal studies of human relations. This effort included observations of workers at a textile mill in Philadelphia. For some time, the mill had suffered high turnover rates, and Mayo was convinced that the mechanical, repetitive work promoted mental abnormalities in the workers. Through the insightfully simple technique of rest periods, turnover in the mill was
significantly reduced (Bourke, 1982). It was this study that helped Mayo gain recognition in the United States, and helped lead to some of his most important works, often labeled the Hawthorne studies, discussed subsequently.

Mayo’s work led others to engage in human relations research. This research stressed three key features. First, he recognized the power in natural groups, in which social aspects take precedent over the functions of the organization. Second, he promoted awareness of the need for reciprocal communication, where communication flows seamlessly from employee to leadership and back, and third, he emphasized the high quality leadership needed to communicate the goals and ensure decision making is effective and reasonable. An interdependent mentality in this case would promote effective communication leading to overall business success (Bourke, 1982). Elton’s work signified a distinct shift from the mechanical, classical organizational mentalities that emphasized the productivity of the organization to the neoclassical notions of today where human capital is not just gauged in terms of productivity, but also in employee subjective wellbeing.

Women have been underrepresented in the history of I/O psychology although they began to make contributions to the field from the beginning. For example, Franziska Baumgarten-Tramer, who earned her Ph.D. from the University of Berlin in 1917, conducted research on job satisfaction and personnel selection. Her book on character traits set the stage for the Big Five Personality dimensions. Similarly, Lillian Moller Gilbreth, received a PhD in Industrial Psychology from Brown University in 1915. She is known for her time and motion studies, kitchen design, and the creation of kitchen appliances such as the ubiquitous foot-pedal trash can. While working as a consultant to the Institute of Rehabilitation Medicine at New York University Medical Center, she designed a kitchen to serve individuals with movement disabilities which became a major training center. (Sicherman & Green 1980). For more about her amazing career as an I/O psychologist, see the Vignette included in this chapter.

I/O and the World at War: Part One

Robert Mearns Yerkes was arguably the most influential person in getting psychology involved in the First World War. In 1897, with financial help from a close Uncle, Yerkes pursued a medical education at Ursinus University. After graduation, he was offered an opportunity to conduct biological research at Harvard University. Yerkes debated whether to continue his pursuit of a medical degree or work towards a newly found passion in comparative psychology, Yerkes took the opportunity to conduct research at Harvard. After graduation, he took a faculty position at Harvard and worked part time at nearby Radcliffe University (Hergenhahn, 1992). Later, as president of APA, Yerkes urged fellow psychologists to get more involved with the war, which lead to the development of several programs dedicated to the war effort. During this time he chaired the committee for the Psychological Examination of Recruits. At this time, Yerkes along with W. V. Bingham, G. M. Whipple, Henry H. Goddard, F. L. Wells, T. H. Haines, and Lewis Terman developed the Army Alpha and Beta intelligence tests that were administered to over a million new recruits. The test measured intellectual and emotional functioning of soldiers, all of whom were men. The tests were used to determine a new recruit’s capabilities including his ability to serve, the position in which he would be most efficient, and whether or not he should be considered for leadership positions (Schultz & Schultz, 2008). Soldiers who could not read or who spoke a language other than English were given the Army Beta Test; a nonverbal form of the test. Some of the measurement issues with the Army Alpha and Beta were highlighted by C.R. Atwell who argued, “The number of errors made by a subject on a test should be indicative of his approach to the test, whether he works hurriedly and rashly or slowly and cautiously. Considered alone, however, the
number of errors is a relatively meaningless figure, since more errors would be expected with lower scores. If for a given score wide deviations occur in the number of errors, the error score of a subject should be of value in giving additional information about him” (Atwell, 1937, p. 451). Extensive concerns exist about these early tests; for example, a successful recruit must demonstrate cultural knowledge to be rated highly, including the uses of Crisco and identification of popular sports heroes (Gould, 1995). Yerkes, along with his colleague Clarence Yoakum, expressed their concerns throughout the early years administering the test. They were skeptical of the reliability of the test, and warned that a man’s value to the military could not be assessed on the intelligence variable alone (Yoakum & Yerkes, 1920).

While I/O psychology contributed significantly to America’s war effort, in Europe, psychology’s involvement was mixed. In Britain, the military was essentially unaware of what psychology might offer, with the exception of General J. F. C. “Boney” Fuller, who tried to apply Gustav Le Bon’s crowd theories to soldiers’ behavior. Psychologists were primarily involved in providing clinical treatment for shell-shock rather than scholarship or professional support for the war (Shephard, 2015). In Germany, however, psychologists were much more actively involved in the war effort. Eminent psychologists like Carl Stumpf marveled at the military’s interest in involving I/O psychologists to work on a variety of tasks, including pioneering aptitude testing for military specialties, developing methods for reducing worker fatigue in munitions factors, and helping civilians adjust to eating less than appetizing foods due to rationing (Rabinbach, 1990). Max Wertheimer developed a directional listening device designed to locate enemy artillery at long distances. Carl Stumpf organized phonograph recordings of native songs familiar to prisoners of war (Ash, 1995). Walter Ludwig studies combat motivation by asking 200 wounded officers and enlisted men to write on what they thought about when subjected to serious dangers (Watson, 2008). These works by psychologists helped make the German war effort more scientific and rational, although in the end they were not able to stop the collapse in morale that characterized the final year of the war (Strachan, 1996).

**Between the Wars**

After WWI, psychologists like Scott and Bingham focused on rehabilitation and training programs for returning veterans (Schultz & Schultz, 2008). However, not long after soldiers began returning home a new variable entered the fray. With the onset of the Great Depression, widespread unemployment and Roosevelt’s New Deal brought a different perspective to the study of organizational behavior. The focus shifted away from intelligence and aptitude testing. Instead psychologists like Mayo and Roethlisberger began to move the I/O perspective towards an emphases on the human condition.

The Hawthorne studies, conducted by Mayo between 1924 and 1932, highlighted the importance of interpersonal relations and the attitudes of employees in the workplace. This framework allowed for the perspective of the worker to play a more significant role in organizational decisions and workplace issues (Fagan & VandenBos, 1993). The studies initially focused on whether employees were more or less productive when working in particular environmental conditions. Furthermore, they were interested in how these environmental factors contributed to worker job efficiency. However, the more surprising findings were those that demonstrated how social factors affected worker productivity. These studies led to the inclusion of human relations as an important part of running a business effectively. Managers who cared about their employees and showed a sincere interest in their work seemed to be more effective than other environmental factors believed to
motivated employees. For Roethlisberger, it was clear that while capital motives were important, interpersonal factors were just as important for a productive organization (Olson et. al., 2004).

By 1939 there were roughly 100 people in the United States who referred to themselves as industrial and organizational psychologists. At this point we saw a growth of doctoral programs in universities with an emphasis on industrial and organizational psychology. In fact it was during this decade that the Dictionary of Occupational Titles first published I/O psychologists as an occupation (Stead, 1938). Furthermore, the American Association for Applied Psychology also saw its birth during this time period. It was clear that I/O psychology was not only here to stay but was an important, growing, subset in the field (Katzell & Austin, 1992)

**I/O and the World at War: Part Two**

The onset of World War II brought about new and unique problems that led to the continuing development of industrial and organizational psychology. The war brought back the interests that fueled psychological research into intelligence and aptitude testing. However, the new emphasis was on both intelligence and human factors for determining where to accurately place new recruits (Plucker, 2003). In 1940, prior to the attacks on Pearl Harbor, the Personnel Research Section of the Adjutant General's Office in the War Department had developed the Army General Classification Test and the Navy General Classification Tests to replace the Army Alpha and Beta tests administered in World War I (Harrell, 1992). Eugenicists like Cattell and Bingham who had argued that the collective intelligence of the U.S. population was declining generation to generation were challenged during this time by data collected by the Personnel Research Section near the end of World War II (Tuddenham, 1948). This data showed that, at least for a random selection of the population who were drafted or who had volunteered for military service, general ability and verbal intelligence scores, significantly increased from World War I to World War II. This would suggest that the population was not declining in intelligence, but quite the opposite. Tuddenham (1948) suggested that a marked increase in education produced marked increases in intelligence. Therefore for Tuddenham, intelligence measuring was directly connected to the educational attainment of soldiers.

Human relations research made its way into military aptitude testing in the form of testing under situational stresses. During the early years of the war, the U.S. Office of Strategic Services, or OSS, which later became the CIA, used variations of the AGCT while incorporating an innovative assessment method. The test assessed individuals on their abilities to navigate social dilemmas, and gauged individuals’ potential effectiveness as OSS agents. The tests formed the basis for similar assessment techniques used today. Following the war, Kurt Lewin founded the Research Center for Group Dynamics at MIT to conduct experiments on collective behavior. In 1948 the center was moved to the University of Michigan, eventually becoming the Institute for Social Research. In 1946, I/O psychologists formed Division 14 of the American Psychological Association. By 1996, Division 14, now called the Society for Industrial and Organization Psychology, had grown to over 2500 members. I/O psychology had truly solidified as a field of study, and had highlighted the importance of human factors.

**Societal Pressures on I/O**

Increasingly, pressure from the business sector promoted the growth of I/O psychology, which included considerable growth of new masters and doctoral programs. Many of the graduates from these programs found work in corporate America, fueling the pressure to produce new and
innovative ways to manage human capital. By the 1960’s around 750 individuals considered themselves to be I/O psychologists in the U.S.

The 1960’s brought its own challenges for I/O psychologists. With increasing diversity in the workplace, the civil rights movement, incredible advances in technology, the Vietnam War, and an increasingly globalized economy, I/O psychologists found themselves in untested waters. The industrial revolution was giving way to the Information revolution, and with it came its own set of organizational issues. Furthermore, while Tuddenham (1948) had highlighted the beneficial effects of education a decade earlier, I/O psychologists became increasingly aware of flaws within the education system, particularly in terms of properly training individuals for the jobs they would eventually obtain (Dunnette & Hough, 1992). However, it was not just these post-World War II home front issues that gave I/O psychologists a new lens on human factors. Other conflicts raised new issues. During the war in Vietnam, fragging, where lower ranked soldiers killed officers who were perceived to be ineffective leaders, became an issue. Much of the effort of I/O psychologists was focused on providing soldiers in leadership positions with proper human relations training to improve relations in general and to counteract these events in specific (Moskos, 1975).

In the U.S., the 1970’s brought rapidly developing technologies, a shift in industrial production largely away from manufacturing to service, and the workplace becoming increasingly diverse. The range in topics that psychologists could focus had grown since the days of Münsterberg, and new techniques were being developed in response to this growth. Job specific analysis became an important part of the I/O psychologists skill set in the business environment. The Position Analysis Questionnaire developed by McCormick, Jeanneret, and Mecheame (1969) involved a variety of questions that allowed for many different analytic reports. Around the same time, the development of behaviorally anchored rating scales, or BARS, became more prevalent. These scales added anchors to traditional rating scales in order to facilitate a more accurate representation of an individual’s performance or behavior (Schwab, Heneman, & DeCotiis, 1975). Test fairness and validation became an important and vital consideration for I/O psychologists since some psychologists found themselves required to defend their tests in anti-discrimination lawsuits. Meta-analysis and test validations were responses to these new challenges (Vitales, 1974).

**Recent Trends**

During the early part of I/O psychology the dominant theoretical framework was classical organizational theory. A theory that assumed that there is a single “best” way to design an organization, and focused on how “proper,” effective, mechanical variables work to maximize efficiency. For example, Taylor’s work on altering employees’ daily movements to maximize performance provides a prominent example of these perspectives. A marked shift with psychologists like Elton, Likert, and McGregor saw the I/O perspective change to a more human focused mentality, but this shift did not happen overnight.

With Elton’s human relations work, the need to shift to a work environment that was more sensitive to human needs became evident and an important predictor of worker efficiency. Neoclassical organizational theory promoted by McGregor, Likert, and Argyris argued for approaches to organization that focused not only on the industrial goals but also employee satisfaction (Greenberg & Baron 2003). In particular Likert felt that performance within an organization cannot be enhanced by strict control of people’s actions. Rather, promoting an individual’s feeling of self-worth and importance would foster efficient workers (Likert & Likert 1976).
As I/O psychology made this shift, ideas such as transformational leadership became an important aspect of organizational behavior. This type of leadership varied from the traditional transactional leadership style that took more of an order-obey stance. Transformational leadership on the other hand identified a needed change, created a means or idea to guide and inspire this change, and organized leadership to execute this change fluidly (Judge & Piccolo, 2004). The focus here is on ways to enhance the morale, motivation, performance of employees through a sense of identity and belonging. At the same time leaders are taught to become a role model for other employees. A greater sense of ownership of one's work is instilled to provide an individuated sense of accomplishment at one's task (Judge & Piccolo, 2004). Google, Facebook, Valve, and many others have begun to adopt this model of leadership to great success. I/O psychology has presented a fast growing, productive, and inspiring body of research over the last millennium. With the exponentially changing nature of our world today, there is no doubt that organizational and industrial psychology will play a vital role in the 21st century.

**Vignettes**

1. Bryan and Harter (1897, 1899): Their Contribution and Legacy

The history of industrial and organizational (I/O) psychology usually begins with the contributions of Hugo Munsterberg for his applications of psychology to forensics and industrial efficiency, James McKeen Cattell for his work on mental testing, and Walter Dill Scott along with Walter Bingham who applied psychology to problems of government and industry. However, before any of these pioneers published works that could be considered I/O psychology, there was the work of William Lowe Bryan and Noble Harter (Landy, 1997).

Bryan and Harter were among some of the first researchers to study the acquisition of complex skills. Their research began in 1893 when Mr. Harter was a graduate student working at the Psychological Laboratory at Indiana University under the direction of Professor Bryan. Harter decided to study problems sending and receiving Morse code. Harter, who had worked as a railroad telegrapher for many years, began his research by interviewing 37 telegraph operators employed by the Wabash Railroad and Western Union. In 1894, based on the results of his interviews, he initiated an experimental study of individual differences in telegraphic writing that evaluated improvements in sending and receiving by observing the speed and accuracy of telegraphers who received telegraphic messages and then translated the code into words and sentences (Bryan & Harter, 1897).

In their research, participants were tested each week on how fast they were in receiving letters not making words, letters that made words, and letters that made sentences. Performance gains were documented for each of the conditions, and the results indicated that translating letters, words, and sentences all showed improvement but not equally. The transition between translating letters and words was smooth but the transition between words and sentences showed a plateau in which no gain occurred. This was later followed by new gains that were dependent upon the acquisition of new skills. The chart below shows the learning curve.
The slowest main line rate refers to the plateau while the receiving connected discourse shows the new gains.

Harter and Bryan were intrigued that learning curves for receiving, but not sending, had plateaus in which periods of improvement were followed by plateaus, in which there were no improvements, and in turn these were followed by periods of improvement again. Bryan and Harter’s explanation for this phenomenon was that improvement of a complex skill like Morse code could not be due to a sudden increase in knowing one’s language but rather involved the acquisition of higher language skills (Adams, 1987).

Bryan and Harter (1899) proposed a hierarchy of higher language habits, for example auditory pattern recognition. In this hierarchy, letters are learned first, followed by letter sequences that form syllables and words, followed by phrases and sentences. Plateaus were thought to occur because the skills learned previously did not allow for advances to the next level in the hierarchy without the acquisition of new skills. In other words, individuals learned control structures for successively larger units of behavior by relying on more elementary routines to build skills. Thus, a telegrapher would begin by memorizing code for each letter in the alphabet, but as his or her skill grew, they would begin recognize frequently occurring combinations of letters. For a musical analogy, the student learns how to play a single note, then a series of notes, and finally an entire piece of music (Rosenbaum, Cohen, Jax, Weiss & van der Wel, 2007).

Bryan and Harter’s legacy revolves around three principles: variability, automaticity, and changes in skilled performance. Variability refers to inconsistencies in performance outcomes. However, the reasons for variability are numerous, and the measures used to document performance are quite varied, including, for example, distinct measures of maximal performance, typical performance, and performance variability. These measures have been the focus of many theoretical discussions (see Overstreet, 2012).

The most contentious issue that emerged from Bryan and Harter’s work was the existence of plateaus. In their study, all of the participants showed periods of time where no improvement in receiving was noted. These plateaus were considered as evidence of qualitative changes in the process of learning. While plateaus were also observed by Book (1925) in his study of typing skills, the existence of plateaus in performance curves has been difficult to replicate (Keller, 1958), and so it is unclear what they may suggest about the learning process.

Bryan and Harter’s most important and lasting concept was that of automaticity, the ability to perform tasks without focused mental attention. Automaticity occurs through repetition and practice. Studies have found automaticity to be present in many activities, and this principle has remained a consistent theme in motor learning theory (Wyer, 2014).

In summary, the early studies by Bryan and Harter provided recognition and legitimacy to the study of the perceptual and motor processes of skilled behavior and how those skills are acquired as well as an understanding that skill acquisition revolves both qualitative as well as quantitative changes in behavior.

2. Lillian Gilbreth: The First Lady of Industrial/Organizational Psychology
Lillian Moller Gilbreth was a distinguished psychologist, industrial engineer, inventor, author, mother of 12, and early pioneer in I/O psychology. She was one of the first female engineers to hold a Ph.D. and, along with her husband Frank Gilbreth, made significant contributions to principles of scientific management, time and motion studies, and human factors research. She employed her considerable insight into human behavior and empathy to focus on the human
element in the workplace. In combining the perspectives of an engineer, a psychologist, a wife, and a mother, she brought the importance of the psychological factors in the workplace to the attention of engineers, business people, the military, and industrialists (Koppes, 1999).

Lillie was born in 1878, in Oakland, California to well-do-do parents of German descent. Because her parents had lost their first child, they tended to be overprotective. Lilly was introverted and very shy, so shy that she refused to go to school until the age of nine. She was evidently very bright, and her parents actively home-schooled her until they finally convinced her to enter first grade, after which she was rapidly promoted through the grades (Lancaster, 2004). In high school, Lillie blossomed and was elected Vice President of her Senior class. More importantly, she was mentored by one of her teachers who convinced her that she could pursue both marriage and a career, which appealed to Lilly since she thought of herself as plain and not likely to attract a husband (Lancaster, 2004). With that in mind, Lilly enrolled in a teacher education program at the close-to-home University of California-Berkeley. She graduated in 1900 with a degree in literature and was the first woman to give a commencement address at Berkeley (Lancaster, 2004).

After graduation, Lilly hoped to attend Columbia in New York City to continue her studies in education with Brander Matthews, a well-known professor of dramatic literature. However, she found out that he would not allow women to take his classes. Fortunately, she discovered that Edward L. Thorndike had no such rule, which is how she came to psychology. Her study with Thorndike was short lived as illness forced her to return home. On recovering she went back to Berkeley and obtained an M.A. in English literature in 1902, after which she began her doctoral studies with a minor in psychology. Taking a break from her studies, Lillian embarked on a summer trip to Europe with a group of women friends, a trip that in 1903 required a chaperone for a group of unmarried women. While stopping over in Boston, the group’s chaperone introduced Lillian to the chaperone’s cousin, Frank Gilbreth, and there was an instant connection. On her return to California, Frank travelled out to meet the family, and he and Lillian became engaged (Held, 2010).

Their marriage in 1904 wasn’t just a love match, it was also became a highly productive business pairing. Frank owned a very successful construction business that utilized time and motion studies to streamline production. In the early years of their marriage, Lilly and Frank lived with his mother and aunt, who took care of domestic arrangements, while Lilly went back to school and worked with Frank on organizing their business. They also began to build a family and between 1905 and 1922 she gave birth to their planned full dozen children. Lillian also changed her educational goals to combine engineering and psychology, and she received a doctorate in psychology from Brown University in 1915 (Stevens & Gardner, 1982).

Together, Lillian and Frank formed an amazing business team. Based on his construction management experience, Frank was interested in the technical aspects of worker efficiency while Lillian brought in the human element with questions on worker motivation and work styles. Her contributions were on how to increase worker productivity. Lillian wrote books and articles and raised the children while Frank worked directly with clients whose companies desired to use time and motion studies to increase productivity.

Lillian had grown up as the oldest of nine children and, because her mother was often ill, she assumed many of the child-rearing responsibilities. That experience worked well for her with raising her eleven surviving children, each of who was given specific responsibilities for managing the home and also served as “guinea pigs” for testing their parents’ theories (Lange, 2012). During WWI Frank and Lillian helped women enter the workforce in the absence of men and as men
returned from the war with injuries, they assisted them in re-learning their jobs in light of their new physical limitations (Yost, 1949).

In 1924, right before his 56th birthday, Frank suddenly died of a heart attack. As a single mother of a large family and an expert in her field, Lillian worked to maintain the consulting business that she and Frank had created. However, some of their long-term clients refused to do business with a woman, and she was also restricted from joining some professional organizations because of her gender. However, early in their business, she and Frank had offered training workshops from their home and she decided to resume this activity which also allowed her to also care for the children. Eventually, potential clients overcame their reluctance to learn from a woman, and the consulting business began to attract major clients, including Johnson and Johnson and Macy’s (Graham, 1998).

Building on this success, she also began to provide training at colleges and universities. In 1935, she became a visiting professor of industrial engineering at Purdue University, an engineering powerhouse, and in 1940 was the first woman promoted to full professor in engineering. She stayed at Purdue, with joint appointments in the departments of industrial engineering, industrial psychology and home economics until her retirement in 1948 at the age of seventy. The President of Purdue once said that in hiring Lillian Gilbreth and Amelia Earhart, he hoped to inspire women students to go beyond traditional gender roles. During the great depression, President Hoover appointed Gilbreth to committees to help women organize, and create public service campaigns, including the successful “Share the Work” program. During WWII, she worked with the War Manpower Commission, with the Office of War Information, with the U.S Navy to promote the WACS and WAVES (enabling women to serve more directly in the war effort), and with industry to help bring women into the workforce to replace the men called up for military service (Graham, 1998).

Her contributions in the area of industrial/organizational psychology were many and varied. While working for General Electric, she interviewed over 400 women to improve kitchen design based on the “work triangle.” This work established the standard height for kitchen counters, stoves, and sinks. She is also credited with creating the door shelves in our refrigerators, including the butter tray and egg keeper, as well as the foot pedal trash can. Lillian received several patents, including one for the waste water hose for washers and another for an improved electric can opener (Giges, 2012).

During her long and illustrious career, Lillian Gilbreth received numerous awards and honors, including twenty-three honorary degrees from such schools as Princeton, Brown and Michigan. She was the first woman to be granted membership Society of Industrial Engineers in 1921, and the second woman to become a member of the American Society or Mechanical Engineers in 1926, which later awarded her and Frank (posthumously) the Henry Laurence Gantt Medal in 1944 for their contributions to industrial engineering. Lillian was the first woman elected to the National Academy of Engineering (1965), and the next year she was the first woman to receive the Hoover Medal for distinguished public service by an engineer, based on her contributions to motion studies, management engineering, and human relations. Finally, Lillian was first female psychologist to have a United States postage stamp issued in her honor. She died at the age of 93 in 1972 (Held, 2010). Her portrait hangs in the National Portrait Gallery, and she and Frank have a permanent collection on display at the Smithsonian National Museum of American History (Lancaster, 2004).
3. The Role of I/O Psychology in the Great War

The fledgling field of industrial/organizational psychology was forever changed when the United States entered World War I. Given the need to select and train thousands of military recruits, Robert M. Yerkes, then president of the American Psychological Association, took the lead in developing assessment instruments to assist the Army in screening volunteers and assigning soldiers to specific jobs. Yerkes believed that the war provided an opportunity to demonstrate the value of psychology to a wide audience (Lynch, 1968).

Other major contributors to the war effort, including Walter Dill Scott and Walter Bingham, had fewer extrinsic motives for offering to help with the war effort. Yerkes and Scott did not get along well, and, with the help of Bingham as mediator, they agreed to divide the tasks. Yerkes focused on recruit selection and classification while Scott dealt with recruit placement. At first, Yerkes’ believed that the best approach would be to test each military recruit individually. However, given the enormity of the task to organize and deploy military units as quickly as possible, particularly as a virulent wave of influenza swept through U. S. military bases (Barry, 2004), he decided that what the Army needed was a test that could be administered to large groups of men by unskilled proctors (Shephard, 2015).

To create such a test, Yerkes organized a team of psychologists at Henry Goddard’s Training School in Vineland, New Jersey, including Lewis Terman, Walter Bingham, and Henry Goddard. The group called itself the Committee on the Examination of Recruits, and they were responsible for creating the Army Alpha and Army Beta intelligence tests. These tests were quick and easy to administer and designed to assist the Army in determining the type and level of training each recruit required (McGuire, 1994).

The Alpha test emphasized verbal ability and was created for those who could read and write in English (Dahlstrom, 1985). The eight Alpha subtests included analogies, missing number sequences, and sentences to unscramble. The Alpha test results were scaled from “A” to “E.” Those earning an “A” were trained as officers, and those earning an “E” received no training but were instead either discharged or assigned to a developmental battalion, where they were prepared for limited duty assignments. The Beta test was designed for recruits who were not literate in English. The Beta
subtests included mazes, memory tasks, matching, picture completion, and geometric construction (Yoakum & Yerkes, 1920). Recruits who failed the Beta test were given an individual examination that utilized a version of the Binet scales. By the end of the war almost two million men had been tested using the Army Alpha and Beta tests (Larson, 1994).

Another major contributor to the war effort was Walter Dill Scott. When the United States entered the war, our nation of farmers, miners, and small businessmen had to be prepared to go to war. Moreover, they needed to be employed in a job for which they showed the greatest aptitude. Scott developed a rating scale to test army recruits that was based on a scale he had previously used with business leaders (Schultz & Schultz, 2008). His rating scale was designed to predict the success of linguists, officers, and servicemen. His proposal to use the scale to provide a personnel selection process was of interest to the Secretary of War as well as the U. S. Army Adjutant General. However, when Scott went to Fort Myers to conduct a test of his scale, the senior military leaders there were highly skeptical. After hours of criticism and debate, they finally agreed to let Scott perform a practical test. Scott gave his scale to officers who were known to be highly effective and the scale was quite accurate in its “predictive” assessment. As a result of the test, the Army recommended use of the scale at all of its camps.

To further refine the selection process, Scott enlisted and rose to the rank of Colonel, becoming head of the U. S. Army Personnel System. This group was tasked to do three things: determine what abilities the army needed, match the abilities of enlisted men with the jobs that required those abilities, and create a system where officers were promoted based on performance indicators. In addition to its use in screening officer candidates, the instrument was also valuable in selecting specialists and technicians. The use of scientific personal selection methods was extraordinarily successful and “prevented such heartbreaking inefficiencies as occurred in the great British volunteer army, where accomplished linguists served as cooks, electricians peeled potatoes, and skilled shipbuilders curried mules” (Northwestern’s Number One Alumnus, 1939, Chpt 3).

At the end of the war, two million soldiers were stranded in France waiting for transportation home. The Army decided to use this opportunity to provide training that would help soldiers return to civilian life. To respond to this need, Scott organized vocational training programs. In recognition of his contributions, Walter Dill Scott was awarded the Distinguished Service Medal. The citation read: “For especially meritorious and conspicuous service in originating, organizing, and putting into operation the system of classification of enlisted personnel now used in the United States Army” (Northwestern’s Number One Alumnus, 1939, Chpt. 3).

These efforts by pioneering psychologists occurred at a pivotal moment in the history of I/O psychology for several reasons. First, the Alpha and Beta intelligence tests were the first to separately assess intelligence for those who could read and write in a language and those who could not, and it provided psychometric models for creating group intelligence tests. Second, the implementation of these tests created a public awareness of the value of psychological testing, and third, the process unfortunately provided data that fueled the controversy over racial differences in intelligence for many years to come (Fancher, 1985).

References


The Rich and Interactive History of Psychology and the Law

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In this concise, illustrative chapter, I examine the history of psychology and the law. This chapter opens with definitions that help narrow the focus of the chapter. I then review some early historical incursions of psychological inquiry into legal areas. Next, to provide context for the emergence of psychology into the legal system, I turn to a concise history of the emergence of civilian policing in the United States and the context in which early psychology and law research emerged. Then I examine some selected early interactions of psychology with the legal system, including prominent early cases involving psychologists or the findings from psychological science. The chapter concludes with a concise review of some recent developments. The three attached vignettes present additional concise psychology and law teaching materials about William Marston and Wonder Woman, Elizabeth Loftus’s initial decision to investigate eyewitness memory, and the Hoffman Report.

Definitions

Psychology and law incorporates basic and applied research across many diverse content areas, and therefore widely accepted definitions of the field present important difficulties. Ogloff and Finkelman (1999) defined psychology and law as “the scientific study of the effect the law has on people and the effect people have on the law” (p. 3). This broad definition extends to include the scientific study of eyewitness testimony, interrogation and confession, and jury decision making as well as evaluation and treatment of people with psychological disorders in legal settings. Despite opening with this inclusive definition, in this chapter I narrow the topic further to emphasize research in psychology and law rather than clinical psychological practice in the law. Clinical forensic psychologists most often work in legal settings to answer applied questions about specific individuals. For example, a clinical forensic psychologist may assess a defendant’s competence to stand trial or evaluate a child to provide a recommendation about whether a judge or district attorney should seek to transfer a child defendant from juvenile court to adult court (e.g., Witt, 2003). In contrast, a scholar in psychology and law may conduct experimental or other research to evaluate jurors’ perceptions of and decisions about juvenile defendants transferred to adult court (e.g., Greene & Evelo, 2013; Walker & Woody, 2011). Bail (in preparation) addresses the clinical forensic aspects of this field elsewhere in this volume, and in this chapter I focus on research in psychology in the law (see also Woody & Coloroso, 2015).

Early Psychological Questions in the Law

Humans have long recognized that psychological issues could influence legal proceedings. Plato’s (1961) classical Socratic dialogue The Euthyphro involves Socrates questioning Euthyphro about the rightness of the legal charges that Euthyphro plans to bring against members of his own family. Centuries later, Francis Bacon (1625/1857) raises important psychological questions about human motivations when he argues that revenge is “a kind of wild justice” that the law should exclude from all proceedings (p. 46). The first formal excursion of clinical psychological questions into a trial involved the 1843 case of Daniel M’Naughton, in which nine medical professionals addressed the court about M’Naughton’s psychological state, leading to the first insanity defense (Rychlak & Rychlak, 1990). In this chapter, I focus on interactions of psychological research and the legal system. Early incursions of psychological scholarship into the law occurred in the early 1900s in the context of politically oriented civilian policing.
Early Psychological Context and the Emergence of Civilian Policing

In the early 1900s, when Münsterberg (1908), Arnold (1906), and other scholars stepped into psychological questions in the legal system (Bornstein & Meissner, 2008; Bornstein & Penrod, 2008), civilian policing remained a relatively new phenomenon in the United States. To understand early psychologists’ questions, we need to examine the historical and legal contexts in which they worked.

At this time, civilian policing remained new, and political and other biases pervaded the activities of law enforcement. In most cities in the United States, local political leaders hired police officers, who answered only to politicians rather than citizens, courts, or journalists (Kelling & Moore, 1988). Police provided social services directly to citizens in their areas, including food and housing assistance as well as law enforcement, and the political nature of the hiring and retention processes prevented the establishment of law enforcement as a career. Election of a new mayor could lead to turnover with mass firing and hiring of officers, who would retain their positions until the next mayor reorganized the local police force (Kelling & Moore, 1988). In these contexts, officers often engaged in intimidation and harassment of citizens to promote the political goals of elected leaders. Additionally, police engaged in explicitly racially-biased policing to maintain racial segregation within communities in the Southern United States (Reichel, 1988; Turner, Giacopassi & Vandiver, 2006) and to enforce whites-only sundown towns in the Northern United States (Loewen, 2005; Wilkerson, 2010; Williams & Murphy, 1990).

Under these conditions, citizens generally viewed police with distrust. Policing remained rife with political bias, corruption, and brutality (Oliver, 2006), and, as noted by Bettman (1974), a slang phrase from the early 1900s was “our last prop is the cop” (p. 93). Reforms came from both inside and outside police departments (Leo, 1992). Much internal pressure for reform came from J. Edgar Hoover (Frank & Frank, 1957; Leo, 2004), Berkeley California Police Chief August Vollmer (Parker, 1972), and other law enforcement figures who advocated for formal police academies, developed improved investigation methods, and promoted policing as a career independent from political patronage. External pressures came from courts, journalists, and the U.S. government, as discussed subsequently (see Bunn, 2007; Leo, 1992). How did these characteristics of policing affect the emergence of early psychology and the law?

One example of the degree to which early 20th century law enforcement differed from today’s policing in the United States comes from early writings of Hugo Münsterberg. With limited oversight from courts, journalists, or the public, police interrogation remained largely unregulated, and physical coercion (i.e., torture) remained a common interrogation tactic into the middle of the 20th century (Bunn, 2007; Chafee, Pollak & Sterns, 1969; Leo, 1992). In Münsterberg’s classic work, *On the witness stand* (1908), he described a confession case from 1906 in which he believed the suspect confessed falsely. The suspect, described as a young man with a cognitive disability, denied involvement in the crime, suddenly changed his claims and confessed during the interrogation, and then attempted to recant his confession. Münsterberg’s analysis of the sudden confession hinged on “the flash” that the young man saw just before he changed his story and confessed. Münsterberg speculated that the flash induced “autohypnotisation” (p. 160) and a state of extreme suggestiveness in which the suspect then internalized the accusations of the police. Interestingly,

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1 Not until *Brown v. Mississippi* (1936) did the United States Supreme Court reject a confession generated by torture. Despite this ruling, physical coercion continued in U.S. police departments (Leo, 1992; Chafee et al., 1969), and authors of police interrogation manuals continued explicitly to warn officers against torture for the next decades (e.g., Arter & Caputo, 1959; Reid & Inbau, 1967; Kidd, 1940, see also Barksdale, 2012).
even contemporary reviewers of these events emphasize the flash and evaluate Münsterberg’s autohypnosis hypothesis (e.g., Dalby, 2014; Kassin et al., 2010; Kassin & Gudjonsson, 2004; Starr, 2015). Not a single observer I could find, even anyone writing with the benefit of a century of hindsight, raised questions about the source of the flash as a possible cause for a false confession. Rather than a complex, difficult to verify hypothesis about autohypnotisation, observers could have considered the source of the flash: the light reflecting from the loaded handgun that the detective used to threaten the suspect’s life until the suspect confessed. Can we imagine that courts, journalists, and scholars of interrogation would ignore a terrifying and explicit threat of death in a current case involving a disputed confession? Observers did not ask these questions in 1906.

Although the U. S. Supreme Court had rejected confessions generated by explicit threats and promises almost a decade before this case (Bram v. United States, 1897), police continued to use these tactics with little or no oversight or condemnation from courts, journalists, the U.S. government, or the public. The great reduction of physical coercion by police interrogators required decades and started with the U.S. government-sponsored Wickersham report (i.e., the “Report on Lawlessness in Law Enforcement,” National Commission on Law Observance and Enforcement, 1931), a resulting journalistic outcry (e.g., Hopkins, 1931), and legal changes established by courts (see Bunn, 2007; Leo, 1992; Woody, Forrest & Stewart, 2011, for reviews).

In these times and contexts, psychological research faced substantial challenges to acceptance by courts and the public. Münsterberg himself provided inspiration for other scholars and the field even as he prompted further resistance to the incursion of psychology into the legal system. Münsterberg’s enthusiasm and success as a teacher and scholar brought increased popularity and greater numbers of students into psychology and law (Sporer, 2006), and Münsterberg also pushed courts to consider research by psychologists (Bornstein & Meissner, 2008). This scholarly inspiration extended to his experiential teaching and convention demonstrations.

Inspired by Franz von Liszt, a German criminologist with interests in eyewitness testimony, Münsterberg recreated von Liszt’s classroom eyewitness testimony demonstration at a scholarly convention. Von Liszt had pushed university and other boundaries a century ago by doing an eyewitness testimony demonstration that included an actual gunshot (with a blank) fired inside his classroom (see Münsterberg, 1908). Much like similar (yet, very importantly, ethical and appropriate) demonstrations today (e.g., Charlton, 1999; Gee & Dyck, 1998), the students involved could not reliably recall details. Münsterberg recreated a similar event at a psychology convention attended by “jurists, psychologists, and physicians, all, therefore, men well trained in careful observation” (1908, p. 51). Münsterberg arranged a highly unusual incident; a European-American man in a clown suit charged into the meeting with an African-American man running behind him. This event was particularly unusual at that time; the attendees were all men, and they were all European-American.¹ The two intruders struggled, there was a gunshot, and they fled. Predictably, the attendees could not provide reliable or valid descriptions of the actors. These demonstrations as well as Münsterberg’s early scholarship raised important legal and psychological questions about eyewitness testimony (Memon, Mastroberardino, & Fraser, 2008).

Münsterberg’s professional and life history negatively affected his influence on psychology and the law as well as his larger legacy in psychology, however. As the fledgling field of psychology and law continued to grow, Münsterberg involved himself in public debates about World War I. He strongly and publicly opposed U.S. entry into the war, and even after World War I he continued to emphasize his German heritage, praised Germany for its actions in WWI and between the wars.

¹ The first African-American person to earn a Ph.D. in psychology was Francis Sumner in 1920 (Guthrie, 2003).
and refused to become a U.S. citizen (Spillman & Spillman, 1993). The rejection of his political ideas affected the acceptance of his psychological ideas, and his influence, along with the field of psychology and law as a whole, faded until later in the 20th century. His graduate students dwindled, and at the end of his career, he did not have students to continue his work and legacy, although his student William Marston continued Münsterberg’s program of popularizing psychology (Bunn, 1997), as discussed subsequently and in Vignette #1. Additional challenges to Münsterberg emerged in legal settings. The prominent attorney John Henry Wigmore (1909) rejected Münsterberg’s work and parodied his psychological research with an April Fool’s Day satire. At the end of a satirical trial, the fictitious court found Münsterberg and “Mr. X. Perry Ment” liable for damages to the legal profession and assessed damages of $1 (Sporer, 2006). These and other events limited Münsterberg’s legacy as well as the perceptions of the early research in psychology and law. Beyond the activities of and responses to Münsterberg, how did psychology interact with the legal system?

**Formative Interactions of Psychology and the Legal System**

**The First Brandeis Brief.** In 1908, almost a decade before he became a Justice on the United States Supreme Court, Louis D. Brandeis included social science in a legal brief in an employment case (Monahan & Walker, 1994). Oregon, along with many other states, differentiated between regulations for men and women workers, and the state sued a laundry operator for requiring 10 or more hours of work per day for women employees. Brandeis presented a brief with limited legal argument but extensive data from social scientists regarding the consequences of long work hours on women. Although this brief supported gender bias in employment law (i.e., the arguments rested on the physical and psychological inferiority of women) and although observers today would likely view the social science included in the brief as poor scholarship (Monahan & Walker, 1994), this case marked the first incursion of social research into court decisions. Today, the phrase “Brandeis Brief” describes any collection of scientific or other materials to support the claims of one side in a trial, and through this initial foray, Brandeis opened the door to increasing involvement of social science in the law.

**Brown v. Board of Education (1954).** In “the best-known use of social science in any area of law” (Monahan & Walker, 1994, p. 148), Kenneth B. Clark, Mamie Clark, and Isidor Chein, among others, led thirty-five psychological scholars as they assembled a Brandeis Brief to argue that racial segregation in education caused significant and preventable harm to children (Brigham & Grisso, 2003). Their testimony did not remain uncontested; Henry Garrett, a prominent proponent of inherent racial differences (as well as Mamie Clark’s dissertation advisor and a doctoral committee member for both Kenneth B. Clark and Isidor Chein) testified in favor of ongoing racial segregation in one of the four cases that led to the U. S. Supreme Court examination of *Brown* (Jackson, 2000)\(^1\). *Brown* brought the first citation of explicitly psychological data by the U. S. Supreme Court, even if the American Psychological Association did not promote or even recognize this momentous event in official paperwork or in the *American Psychologist* (Benjamin & Crouse, 2002). The involvement of the psychological scholarship and, perhaps more importantly, the leadership of Kenneth B. Clark in the Court’s justification of the decision to strike down the notion of separate but equal as established by *Plessy v. Ferguson* (1894) raised the profile of psychology in the legal system and

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\(^1\) As an important testament to Garrett’s acceptance of the intelligence testing literature of the time (and the racism interwoven through this body of scholarship, see Gould, 1996; Winston, 2003), in his classic *Great experiments in psychology* (1930), four of the 14 research papers he included address intelligence testing in specific and six address learning in general.
opened the door to greater consideration of psychological data by courts (Benjamin & Crouse, 2002; Clark, 1950; Clark, Chein, & Cook, 1952/2004; Clark & Clark, 1947; Keppel, 2002).

**Early deception detection.** Lie detection or deception detection has long intrigued scholars, legal practitioners, and others. The events of 1 Kings 3 (New International Version) provides an early example of deception detection. In these famous events, King Solomon must adjudicate between two women, both of whom claim to be the mother of the same infant. Solomon proposes to cut the child in half and to present each woman with half of the child. When one woman then relinquishes her claim to the child rather than accept this solution, Solomon declares her the mother and presents her with the child. Today, in a time that differs radically from the context depicted in these verses, readers may ask important questions about the woman to whom this solution was acceptable as well as about the apparent willingness to take the life of an infant to resolve the question of deception.

An early attempt at deception detection emerged separately from the scholarship of both Max Wertheim and Carl Jung. At almost exactly the same time, these scholars independently developed free association tasks to separate liars from truth-tellers; Jung published first but Wertheimer submitted his manuscript first (Wertheimer, King, Peckler & Raney, 1992). In both proposed methods, the suspect engaged in a free association task that included relevant terms (e.g., in a theft cases these may include “theft,” “opportunity,” and “getaway”) mixed with irrelevant words. Both Wertheimer and Jung argued that latency of response and the free associate produced by the suspect provided information that could allow an examiner to identify deceivers (Wertheimer et al., 1992). Although these strategies have practical limitations (e.g., the need to train officers in the subtleties of applied free association, among other challenges) and although they remain largely absent from current attempts to detect deception, some scholars report that, in demonstrations with fully informed and fully consenting volunteers, these methods have led to largely accurate categorization of liars and truth tellers (Wayne Viney, personal communication, May, 1999).

Another early attempt at deception detection came from a student of Hugo Münsterberg. William Marsten developed a tool to assess physiological changes related to stress (see Vignette #1 for additional detail about Marsten, the polygraph, and his other best-known creation: Wonder Woman). Marsten started with the assumption that deception causes increased stress and that accurate measurement of arousal (i.e., initially by Marsten through measurement of systolic blood pressure and later expanded by others to include heart rate, breathing rate, skin conductance, and other variables) could identify suspects who experienced stress in response to relevant questions and whom the examiner would then identify as deceptive.

Scholars have systematically studied, promoted, and criticized the polygraph for decades (e.g., Honts, 2014; Reid & Inbau, 1977; Lykken, 1998, respectively). The polygraph shaped public consciousness through the 20th century and into the present, particularly in popular media, and observers have too frequently overstated the abilities of examiners to detect deception with the polygraph (Bunn, 2007). For these and other reasons, courts typically exclude polygraph evidence; the most common uses of polygraph examinations in courts occur when defendants seek to introduce polygraph examinations as evidence of innocence (Honts, 2015).

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1 See Diamond (2013) for a concise discussion of the high prevalence of infanticide in traditional cultures and the ways that these common practices now appear disturbing to contemporary observers.

2 Can today’s readers readily imagine that someone claiming to be the parent of a child would agree to the death of the child as a solution to this dispute (i.e, 1 Kings 3:26 New International Version, “But the other said, “Neither I nor you shall have him. Cut him in two!”)? It remains difficult to separate our present perspectives from our views of history (King, Woody & Viney, 2013).
Beyond the primary questions of the accuracy of polygraph examinations, additional concerns exist regarding polygraph testing during police interrogation. Scholars have long recognized the potential for polygraph examinations to induce false confession (see Meerlo, 1956; Sargant, 1957/1997). According to Leo (2008), the most common use of polygraphs during police interrogation is not to assess a suspect’s truthfulness but to inspire suspects to confess. Police may even legally deceive a suspect about the outcome of polygraph testing by telling a suspect that the machine has revealed that the suspect lied, regardless of the actual results. A legitimate authority, such as a police officer, who deceptively informs a suspect that a scientific, completely accurate machine demonstrated that the suspect lied can powerfully impact the suspect. The suspect may believe that conviction is inevitable and that confession, even false confession, is the best choice, or, more controversially, polygraph evidence may lead the innocent confessor to believe that he or she is factually guilty (Leo, 2008; Meerlo, 1956; Sargant, 1957/1997). In several high-profile cases, polygraph examinations (including those that identified the suspect as truthful just before police falsely told the suspect that the polygraph showed evidence of deception) induced false confessions that led to subsequent miscarriages of justice. Police have used these tactics with several documented false confessors, including John Kogut (Innocence Project, 2015a), Jeff Deskovic (Bandler, 2014a, 2014b; Innocence Project, 2015b), and some members of the Norfolk Four (Wells & Leo, 2008).

Many other tools exist to detect deception, including computerized tools such as voice stress analyzers, which typically perform at chance (see e.g., Horvath, 1979; Damphousse, Pointon, Upchurch & Moore, 2007). Additionally, much debate has focused on behavioral deception detection, the ability to identify liars by their physical behaviors, word choices, speaking styles, and other factors. For this question in particular, textbooks and other sources present a wide and conflicting variety of behaviors believed to identify deception (King & Dunn, 2010), and scholars in criminal justice and psychology disagree strongly about the accuracy of these approaches, with estimates of accuracy varying from as high as 98% in a single study (Levine et al., 2014) to 54% (50% is chance) across a series of meta-analyses (Bond & DePaulo, 2006, 2008; Vrij, 2008). Additionally, scholars in psychology and criminal justice typically (even if strangely) cite literature in only their own fields (see King & Dunn, 2010, for a review and Blair, Levine, Reimer, & McCluskey, 2012, for a reply). In addition to these specific disagreements, the field is already huge, well-established, and growing substantially. According to Vrij (2010), scholars publish approximately 150 peer-reviewed papers each year on deception detection. These debates appear likely to continue.

The Resurgence of Psychology and Law

The field of psychology and law regained traction in the late 1960s, when Eric Dreikurs and Jay Ziskin launched the American Psychology-Law Society with a membership that included researchers, practitioners, and expert witnesses (Pickren & Fowler, 2003). Since that time, psychology and law has become one of the fastest growing areas of psychology, with larger numbers of psychologists testifying in court and consulting with attorneys and courts continuing to increase their citation of psychological science to justify legal decisions (Ogloff & Finkelman, 1999).

Eyewitness testimony. Similar to the fate of other cognitive and experiential topics (King, Woody & Viney, 2013), questions of eyewitness testimony and related topics faded into the background of behaviorist America until a “renaissance” in the late 1960s and 1970s (Sporer, 2006, p. i). In the

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1 Although estimates of the accuracy of the polygraph vary widely, scholars agree that they are not 100% accurate, and this claim is therefore inherently deceptive.
early 1970s, Elizabeth F. Loftus sought to conduct more applied research at the nexus of memory and language, and, with undergraduate student John Palmer (1974), she launched a study of the misinformation effect (i.e., errors in memory due to misleading information; Loftus, & Hoffman, 1989) in eyewitness testimony and opened the door to researchers to consider a wide range of applied questions in memory in general and eyewitness testimony specifically. I examine her decisions to enter this field in Vignette #2.

In the 1970s, Loftus launched her series of experimental studies of eyewitness testimony and the misinformation effect, and her pioneering work *Eyewitness Testimony* (1979/1996) described the state of the field, suggested additional testable hypotheses, and, as perhaps its most important consequence, inspired scholars. As she reported in her autobiography, “there were many interesting questions to ask about the misinformation effect, and scores of researchers began to try to answer them” (2007, p. 207). Since the 1970s, the study of eyewitness testimony has grown to become one of the most prominent and well-developed areas in psychology and law (Wells, Memon & Penrod, 2006), incorporating both basic and applied approaches (e.g., studies of the neuroscience of human facial recognition and the efficacy of simultaneous or sequential lineups, see Wilmer et al., 2010; Steblay, Dysart, Fulero, & Lindsay, 2001, respectively). Excitingly, scholars in these fields have substantially improved law enforcement practices related to eyewitness interviews across the United States (e.g., United States Department of Justice, 1999).

**DNA evidence and perceptions of psychology.** The incorporation of reliable DNA evidence into legal proceedings formed an important development that has further inspired the study of psychology and law. Prior to DNA exonerations, substantial doubt existed that erroneous eyewitnesses could cause miscarriages of justice. In recent decades, however, the Innocence Project (2015c), which relies exclusively on DNA exonerations, and the National Registry of Exonerations, which includes DNA and other exonerations in which courts have “cleared defendants of all charges based on new evidence of innocence” (National Registry of Exonerations, 2015a, ¶1), have reported mistaken eyewitness testimony in the conviction of substantial portions of their exonerated defendants. These consistent findings from outside of psychology provided substantial support for findings of scholars in psychology and law, particularly those who have long asked questions about mistaken eyewitness testimony and, more recently, those who have raised important questions about false confessions and resultant miscarriages of justice (Kassin et al., 2010; Wells, 2012).

**Explosion of topics.** Psychology and law incorporates several consistent topic areas as well as a diverse array of related topics. For example, well-developed bodies of scholarship exist for eyewitness testimony as well as some other areas such as pretrial publicity (Steblay, Besirevic, Fulero, & Jiminez-Lorente, 1999) and jury decision-making (Devine, 2012). Other areas of scholarship have gained credibility and legal influence in recent years, even if courts and other observers do not yet consistently recognize these developments. For example, the study of interrogation and confession has led to strong agreement among scholars about factors that increase the likelihood of false confession (see e.g., Kassin et al., 2010; Leo, 2008; Woody, et al., 2011), but courts remain highly divided regarding the admission of expert testimony in trials with disputed confessions (see Fulero, 2010; Perez, 2012). In addition to well-established and growing research areas, some scholars have raised important but narrow research questions, such as

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1 The Innocence Project (2015c) reports mistaken eyewitnesses contributed to 72% of exonerees, and the National Exoneration Registry (2015b) reports that 32% of exonerees faced mistaken eyewitnesses; when relevant, both organizations list multiple causes of mistaken convictions, and therefore mistaken eyewitness testimony often co-exists with other causes.
whether the severity of the alleged crime affects jurors’ biases against juvenile defendants (Ghetti & Redlich, 2001; Walker & Woody, 2011), whether the apparent race of the suspect affects observers’ perceptions of the voluntariness and truthfulness of his confession (Pickel, Warner, Miller & Barnes, 2013), or whether observers can reliably smell contraband inside a vehicle (Doty, Wudarski, & Marshall, 2004).

**Conclusion**

Throughout the 20th century and into the new millennium, psychology and law has grown in uneven steps to become one of the fastest developing areas in psychology. Many students, teachers, and researchers enjoy the interesting and exciting blend of basic and applied scholarship and the connections of psychology to practical outcomes (e.g., Loftus, 2007). Although relationships between psychology and the law (i.e., law enforcement, attorneys, courts, etc.) continue to range from rocky to supportive, these relationships continue to change quickly, and many of us recommend increased cross-talk between scholars in psychology and practitioners in the law (Meissner, Hartwig, & Russano, 2010; Woody et al., 2011). The future remains open for new scholars, new data, and, perhaps most importantly, new questions.

**Vignettes**

1. **Deception Detection, the Popularization of Psychology, and Wonder Woman**

   In the early 1900s, psychological scholars brought basic and applied research to questions in the law, including the ancient question of deception detection. One of the more famous attempts is that of William Marston’s development of an early lie detection machine before he transitioned from his primarily academic life to a role in which more students may know his work: the creator of the superhero Wonder Woman along with her magic lasso that makes people tell the truth (Bunn, 1997).

   Marston completed his bachelor’s degree in psychology at Harvard in 1915 and then entered Harvard law school. He had initially developed his test of deception based on systolic blood pressure as an undergraduate (Marston, 1917), and, as a student in the law program, he began to invest time in the psychology laboratory to evaluate his theories about stress and lie detection (Bunn, 1997). At this time, Hugo Münsterberg ran the psychology laboratory, and, as discussed in the chapter, Münsterberg’s political and national perspectives interacted with his psychological perspectives to limit his legacy in psychology. This prompted some to say that Münsterberg “left no legitimate intellectual heir” (Spillman & Spillman, 1993, p. 334), but, as argued by Bunn (1997), Marston could be Münsterberg’s “illegitimate heir” (p. 93) whose lasting impact extended Münsterberg’s efforts to popularize psychology rather than Münsterberg’s more rigorous experimental work.

   As early as 1921, a Boston newspaper promoted Marston as the inventor of the lie detector, a claim reiterated by Marston throughout his life (Bunn, 1997). Marston invested decades in his transition from mainstream academia to popularizer of psychology (a goal that some scholars derided as “yellow psychology,” a play on words related to yellow journalism, Spillman & Spillman, 1993, p. 329). In the 1920s, he conducted academic research on the physiology of emotion (a topic intertwined with both his interests in deception detection and his later creation of Wonder Woman), he taught psychology at several universities, and he engaged in philosophical discourse about psychological questions (Bunn, 1997). In the 1930s, his scholarly interests had shifted into the public sphere. He moved from articles in scholarly journals to promoting psychology in publications such as *Ladies Home Journal* and *Esquire*, joining many other early 20th century
psychologists who wrote for popular audiences, including John B. Watson and William James. At this time, he also pursued his psychological interests in popular settings. For example, in 1928, he booked the Embassy Theatre in New York City and showed erotic and other emotional images to women whom he evaluated with his lie detector. He then publicized differences in emotional responses to stimuli between blondes, brunettes, and red-heads, and for at least the next decade he continued to promote the notion that hair color predicted emotional traits (Bunn, 1997). Today, cultural biases the 1920s remain glaringly obvious (see Loewen, 2005); Marston tested only European-American women, and observers did not appear to raise questions about the omission of so much of the planet’s population.

By the 1930s, he served as the resident psychologist at Family Circle magazine, and across his academic scholarship, his popular activities, and his later comic book development, a consistent theme emerged: “a tireless mission to nurture the psychic well-being of his various audiences” (Bunn, 1997, p. 93). With these goals, he developed Wonder Woman in 1941, using the pseudonym Charles Moulton.

Wonder Woman reflected Marston’s larger view of emotions and society. In the 1920s, early in his transition from academic to popular psychology, Marston proposed that psychologists should study emotions as responses to stimuli and that the four primary emotional responses included dominance, compliance, submission, and inducement (Marston, 1927). Although Marston reported that men typically showed dominance as women engaged in submission, he did not view these as essential properties of men and women, and he encouraged men and women to reverse these roles in their personal, romantic, and sexual lives (Bunn, 1997). He promoted these goals with Wonder Woman, a Princess of the matriarchal Amazons on Paradise Island (DC Comics, 2015), who often faced adversaries attempting to dominate her and who would dominate her enemies as well as others (Bunn, 1997). After observing early 20th century cultural changes regarding gender (e.g., more women entering higher education, earning doctoral degrees in psychology, gaining the right to vote), Marston believed that women would continue to gain freedom and opportunity in U.S. society, that women would soon challenge men and that women would eventually have prominent leadership roles, perhaps centuries in the future (Bunn, 1997). He sought to promote women’s freedom and liberation in many ways, including both psychology books and Wonder Woman. As Bunn (1997, p. 95) stated, “Wonder Woman was not only a response to some of the social changes effected by the disruptions of the Second World War, but she was also the embodiment of a philosophy of liberation developed during a 20-year career in academic and popular psychology.” Across a long career in academic and popular psychology, Marston’s most indelible mark may have involved a fictitious Amazon Princess who challenged the deep-seated gender roles of his time.

2. Memory, History, and Inspiration

In this concise vignette, I present two alternate or concurrent historical explanations for Elizabeth F. Loftus’s decision in the early 1970s to move from basic research on language and memory to the practical study of eyewitness testimony. The first explanation comes from Loftus’s (2007) autobiographical chapter. In her chapter, she notes that toward the end of her graduate program she had been studying semantic memory and cognitive storage of general knowledge but sought findings with greater potential for application. She continued to wrestle with these academic questions as she and her husband struggled to find academic positions in the same location. After extensive personal and academic consideration, she decided to leave her faculty position at the New School for Social Research to join her husband in the state of Washington. She states, “before arriving in Washington, I had been thinking about wanting to do research that had more obvious
practical applications” (p. 206). She was curious in particular about how the questions asked of witnesses by police officers may influence the witnesses’ memories. For her practical stimuli in this novel research program, she moved past the nonsense syllables, sentences, and simple photographs used by other researchers, and she began to employ video recordings of traffic accidents as stimuli.

As is well-known, Loftus observed powerful effects with her new approach. Notably, although all participants observed the same video recorded traffic accident, participants who responded to “about how fast were the cars going when they smashed into each other?” provided mean times that were substantially faster than participants who responded to “about how fast were the cars going when they hit each other?” (Loftus & Palmer, 1974, p. 586). Additionally, the participants who responded to “smashed into” remained more than twice as likely to report broken glass on the pavement, even though no broken glass existed in any condition (Loftus & Palmer, 1974). This program of research set the stage for “scores of researchers” to follow (Loftus, 2007, p. 207).

An alternative explanation exists for Loftus’s career decisions. Stanley Coren (personal communication, April 17, 2015) recently related his own role in the re-emergence of the study of eyewitness testimony. He stated that in the early 1970s, he had studied with Carl Rogers and learned how to reflect ideas and emotions back to clients and others. Coren reported that he engaged in this activity with students and junior colleagues, including Elizabeth F. Loftus, then a new faculty member working with Coren at the New School for Social Research. When Loftus approached Coren for recommendations on topics of study, Coren stated that rather than encourage Loftus toward a particular goal of his own choosing, he reflected her own interests back to her, including her interests in applied research on eyewitness testimony. He recalled that this conversation occurred immediately before Loftus and Palmer (1974) conducted their iconic study of eyewitness testimony.

I seized the opportunity to ask Loftus directly about these explanations, particularly the conversation related by Coren. She referred me to her autobiographical chapter (Loftus, 2007), and she stated that she had “no memory of” the conversation with Coren but noted that the conversation could have occurred during the time their careers overlapped at The New School for Social Research before they both independently headed to the West Coast for their subsequent academic positions. Applying a lifetime of her own scholarship to this question, particularly with regard to memory failures and the potential for new information or misinformation to shape memory, Loftus noted that both explanations could be true and that both series of events “could have happened” (personal communication, December 14, 2015).

This and other similar events provide further cautions about interpretations of history. Even when all of the relevant parties have spoken directly and definitively about a relatively simple event to a single source (i.e., the author of this vignette), memory difficulties, lack of external evidence, and our own biasing self-perceptions present substantial difficulties in determining the ground truth through historical scholarship.

3. The Hoffman Report
This vignette relates only indirectly to psychology and law, largely through the scholarly debates about the theory and practice of military interrogation. But, the Hoffman Report (Hoffman et al., 2015) shines light onto some of the darkest events in the history of the American Psychological Association [APA], and we, as psychologists, future psychologists, and scholars, teachers, and students in related fields, should examine these events as well as the present and future implications for psychology. The depth and breadth of the questions about psychologists’
participation in torture preclude any exhaustive treatment in a short vignette, and these issues strike the core of our identity as a field and our identities as individual psychologists. For example, my colleague is not alone when she reported her experiences of traveling internationally in 2015. Not only strangers but friends, relatives, and, perhaps most poignantly, faculty who are her long term professional collaborators raised questions about her own ethics as well as her professional standing in the APA; she described a tangible loss of professional credibility and status as well as deep personal embarrassment (personal communication, Anonymous, April 17, 2015).

For a very brief history, in the early 2000s reports emerged of psychologists participating in what some euphemistically called “enhanced interrogation techniques” [EITs] at the Department of Defense [DoD] facility at Guantanamo Bay as well as at other undisclosed locations (see e.g., Bloche, 2011; Risen, 2014 for reviews). EITs included constant exposure to cold environments, requiring detainees to sit or stand in stressful positions (see Lech, 2011, for examples of these techniques applied to U.S. Service members in North Korean POW camps in the early 1950s and the perceptions of these tactics as torture), waterboarding, sleep deprivation, and other tactics. Psychologists working with the DoD refined these techniques and employed them with detainees. How could these actions possibly fit into the APA (2002) ethics code?

The summary of the primary conclusion of the Hoffman Report provides clarity about how this process occurred and the motivations for these events (Hoffman et al., 2015, p. 24).

Our investigation determined that key APA officials, principally the APA Ethics Director joined and supported at times by other APA officials, colluded with important DoD officials to have APA issue loose, high-level ethical guidelines that did not constrain DoD in any greater fashion than existing DoD interrogation guidelines. We concluded that APA’s principal motive in doing so was to align APA and curry favor with DoD. There were two other important motives: to create a good public-relations response, and to keep the growth of psychology unrestrained in this area.

Additionally, the investigation found that “APA officials engaged in a pattern of secret collaboration with DoD officials to defeat efforts by the APA Council of Representatives to introduce and pass resolutions that would have definitively prohibited psychologists from participating in interrogations” (p. 24). Not only did some members of APA leadership engage in efforts to prevent changes in APA ethical policies to preclude psychologists’ participation in EIT, some members of APA leadership publicly and privately excoriated individuals who continued to raise these questions (Anonymous APA observer, personal communication, April, 2015), at one point even referring to critics as “opportunistic commentators masquerading as scholars” (Koocher, 2006, p. 5).

In response to the Hoffman Report, some leaders of the APA left the organization (Ackerman, 2015), and the APA passed Council of Representative Resolution 23B, which appears to provide clear mandates to “Safeguard Against Acts of Torture and Cruel, Inhuman, or Degrading Treatment or Punishment in All Settings” (2013, ¶11) and to preclude psychologists’ participation in EIT and similar actions. I say “appears” in this context because some observers believed the APA had resolved these issues with earlier resolutions (e.g., APA Council of Representatives, 2006; 2007a; 2007b; 2013), even though the problems clearly remained.

In the future, I hope I can state with greater confidence that this organization to which many of us belong does not allow members to participate in EITs with DoD detainees. Sadly, these concerns are not new. The warnings have long been with us. For example, in 1951, Joost A. M. Meerloo, a Dutch psychiatrist and survivor of WWII prison camps and coercive interrogation (i.e., torture) by
Nazis, warned psychologists about what he termed \textit{menticide} and cautioned that, “we ourselves may one day become entangled in activities unworthy of a ‘free democratic psychiatry’” (1951, p. 594). As the APA President and President-Elect stated in their open letter of July 24, 2015, “What happened never should have” (McDaniel & Kaslow, 2015, ¶2). The responsibility to prevent future abuses lies with all of us.

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Forensic Psychology
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Forensic psychology is commonly defined as the application of clinical psychology to the criminal justice system (Huss & Skovran, 2008). The roles of a forensic psychologist encompass everything from profiling potential criminals to working with law enforcement and the judiciary to helping determine culpability of defendants to helping to treat those already convicted of crimes. Forensic psychologists are thus involved in the criminal justice system and judiciary through every step of the process, from the pre-trial through post-conviction stages. These multiple roles create some tension as clinical psychologists and law enforcement often have different aims. When did the relationship between psychology and the justice system start, how did it evolve, and where is it headed?

Most laypeople are likely already familiar with some of the roles that forensic psychologists play. Forensic psychologists counsel inmates in jails or psychiatric hospitals, assess prisoners to determine whether they are safe to be housed with other prisoners, and evaluate defendants’ abilities to participate in trial and sentencing decisions. Thanks to television and film, much of the public is also familiar with criminal profiling and some of the roles of a psychologist in the courtroom. But the portrayal of psychologists on television is sometimes wildly inaccurate. For one example, very few individuals work as full-time profilers, and most of these individuals arrived into these roles from law enforcement backgrounds rather than psychology. For other examples of common misconceptions, many believe that psychologists “declare someone insane” or “decide if someone can be tried.” While psychologists play a role in assessing defendants and providing relevant evaluations to legal decision makers, including potential testimony in court, it is ultimately up to a jury to decide if the defendant was legally insane and therefore not guilty of a crime. Similarly, forensic psychologists conduct competency evaluations, but these decisions are actually made by judges. We address some of the inaccuracies in the field in the following pages.

In this chapter, we discuss some important historical milestones in forensic psychology and cover several of the prominent research areas in the field: legal, correctional, police, and criminal psychology. We also discuss some of the historical and emerging tensions that arise between the goals of forensic psychology and the goals of the criminal justice system, including the ways our understanding of clinical ethics has changed forensic assessment.

Early History

It is important to note the psychologist who laid the theoretical foundation for much of the continuing research in forensic psychology (Bornstein & Penrod, 2008). G. F. Arnold, who in 1906 published *Psychology Applied to Legal Evidence*, was one of the first psychologists to apply principles of psychology to the legal system. While Arnold stuck to a mostly theoretical approach and did not pursue experiments, he was the first to apply early theories of memory and eyewitness reliability to court testimony.

Several other early psychologists investigated legal questions. Alfred Binet, best known for his development of early intelligence tests, studied eyewitness testimony and suggestibility (Nicolas, Gounden & Sanitioso, 2014). Both Carl Jung and Max Wertheimer developed word association tasks to detect deception (Wertheimer, King, Peckler, Raney & Schaef, 1992). Sigmund Freud
(1906/1959, 1916/1957) famously debated whether psychoanalytic techniques could be used to induce or evaluate confessions but concluded that the difficulties of separating fact from fantasy precluded their uses in court or elsewhere in the criminal justice system (see Weiss, 2012). H. H. Goddard confounded low intelligence, which he called “feeblemindedness,” and criminality, arguing that both were genetic and loaded on a single gene. He applied these views most directly to education, intelligence testing, and immigration (Gould, 1996).

Another of the first and most famous early contributors to the field was Hugo Münsterberg, a German-American psychologist whose book *On the Witness Stand* (1908) was the first to discuss the application of psychology to legal questions (see Vignette 1). Münsterberg questioned the reliability of testimonial evidence, particularly eyewitness testimony, and was one of the first psychologists to conduct empirical research testing its reliability. In comparison to Arnold, Münsterberg’s discussion of the legal system was much more a criticism of its failures to acknowledge deficiencies of human perception (Bornstein & Penrod, 2008; see Vignette 1). Some critics of Münsterberg referred to his statements as “yellow psychology,” a play on “yellow journalism,” a phrase used disparagingly against journalists who emphasize sensationalism and exaggeration (Spillman & Spillman, 1993, p. 329; see Moore, 1907), and argued that he was not truly interested in furthering the dialogue between the legal profession and the new study of psychology. Münsterberg also faced more direct public criticisms. For example, legal scholar John Henry Wigmore (1909) wrote a satirical description of a fictitious trial held on April Fool’s Day in the non-existent Superior Court of Wundt County, Illinois, at which Münsterberg and Mr. X. Perry Ment were held liable for injuring the reputation of the legal profession; the damages in this fictitious case amounted to $1 (Sporer, 2006). Münsterberg and his critics clearly illustrated some of the tensions that persist between the two fields to this day. Münsterberg also discussed theories of criminality and wrote on prevention of crime, which continue to be driving forces behind modern forensic psychology research.

**Fields of Forensic Psychology**

The early foundations of clinical psychology focused on people who engaged in deviant behavior, which led naturally to a focus on people who committed crimes. Most of the field that we now know as “forensic psychology” began with a clinical emphasis on criminal behavior. However, forensic psychology has now branched into several different subareas, each with a unique history and different function in the legal system.

**Legal psychology.** Legal psychology focuses on research and application of psychology to the legal system (see Woody, 2016, this volume), including expert testimony. One of the first examples of psychologists acting as expert witness is the testimony of Kenneth and Mamie Clark before the Supreme Court in the *Brown v. Board of Education* (1954) case (Monahan & Walker, 1994). While the Clarks had not met any of the individual students involved, they were able to testify to the impact of school segregation on children in general using their famous “doll experiments.” Their testimony was crucial in ending segregated public schools in the United States (Brigham & Grisso, 2003).

One of the important challenges in legal psychology is the inclusion of scientific perspectives in court. Scientific expert witnesses, including those in legal psychology, can only address nomothetic data – data about populations and probability – rather than ideographic data about individuals (Woody, 2008). For example, a legal psychologist can only discuss trends such as the reliability of memory and eyewitness testimony but cannot draw conclusions about a particular witness. The scientific expert can testify about the conditions under which eyewitnesses are more or less
accurate (e.g., simultaneous v. sequential lineups, see Steblay, Dysart, Fulero, & Lindsay, 2001) but cannot predict whether any single statement or witness is accurate. These legal questions are typically left to the jury or, for some of these questions, to practicing clinical psychologists. For example, legal psychologists may study the conditions under which mock jurors are more or less likely to convict a juvenile tried as an adult, while a clinical forensic psychologist may evaluate the actual juvenile defendant and write a recommendation about whether this particular child should remain in the juvenile system or face transfer to adult court (see Woody & Coloroso, 2015).

**Correctional psychology.** Correctional psychology (formerly called prison psychology) began with studies of criminal behavior. While it was initially a research specialty, correctional psychology is now defined as the practice of providing clinical services to inmates in correctional facilities (Otto & Heilbrun, 2002). In the early 20th century, the first juvenile correctional facility was opened. In order to better understand the causes of juvenile criminal behavior, Grace M. Fernald and William Healy began conducting psychological research on offenders at the Juvenile Psychopathic Institute, with a heavy emphasis on assessment (Healy & Fernald, 1911). While the initial research focused mostly on intelligence testing, current assessment practices include testing for traumatic brain injuries, evaluating medical and other causes of behavior, and trauma-focused therapy for individuals with PTSD. A modern correctional psychologist may do competency assessments, train correctional officers in best practices with inmates who are juveniles, struggle with mental illness, or have cognitive disabilities, create safety plans with clients who are suicidal or homicidal, and oversee daily therapy conducted by therapists within a correctional facility (Shipley & Arrigo, 2012).

**Police psychology.** Most readers have taken a personality test as part of the hiring process required to get a job, and therefore they have seen some of the work of police psychology. The increase in assessments in prisons led to the development of different methods to assess police officers and to provide clinical services to police and law enforcement (Otto & Heilbrun, 2002). Police officers face higher levels of stress than individuals in most other professions, and the mental and emotional demands made on law enforcement call for assessments to determine which candidates might be most suitable for the work. With an apparent increase in fatal contacts between law enforcement and civilians (Bureau of Justice Statistics, 2011), it has become increasingly important to understand the causes of law enforcement behavior. Are police brutality incidents due to a change in criminal behavior, or is there a “law enforcement” personality type that might lead to these events (Shipley & Arrigo, 2012)? The same psychological assessment tools used for police hiring are used elsewhere, most famously the MMPI and MMPI-2 (Shipley & Arrigo, 2012). While career and assessment testing in the United States began with law enforcement, it has since spread to several other professions in which an employee might be expected to interact with the public. Police psychologists remain on the front lines of these forms of professional assessment.

**Criminal psychology.** Criminal psychology is the newest and most exciting subdivision of forensic psychology and is often portrayed on television as “forensic psychology.” Indeed, criminal psychologists who interview and study criminal behavior are often simply called “forensic psychologists.” Criminal psychology can be defined as the study of human behavior as it relates to committing crimes. This discipline has its roots in scholarship and legal psychology but has been largely shaped from the clinical practices adapted from correctional psychology (Otto & Heilbrun, 2002). The roles of the psychologist can include the study of criminals’ motives to determine why they behave in certain ways as well as creating psychological profiles of potential offenders that have not been caught or may not have even committed a crime yet (Shipley & Arrigo, 2012). A key
difference is that unlike a legal psychologist, a forensic criminal psychologist often takes part in the assessment of an offender, including a defendant’s state of mind or competency to stand trial.

Criminal profiling is one of the most studied and least understood specialties in forensic psychology. In a modern law enforcement context, criminal profiling is defined as studying and making conclusions about the personality and behavioral characteristics of criminals (Turvey, 2011). The methods that profilers use can result in vague theoretical conclusions about personality types, or in very specific profiles of a suspect including factors such as body type, personal habits, and speech patterns. Due to the growing popularity of criminal profiling in the last 20 years, particularly in entertainment media, the interest in crime prediction is at an all time high (Kocsis, 2009; Shelton, 2008). The most pressing concerns researchers in this field face are how to predict and prevent crime. Most criminal profilers are not forensic psychologists but specially trained law enforcement officials. The majority of criminal profilers in the United States do not have a background in clinical psychology but have received training in behavioral analysis from organizations such as the FBI (Turvey, 2011). While there are benefits to having a uniform approach in how to identify and understand offenders, this common training brings a law enforcement focus that too often excludes other approaches and perspectives; profilers typically do not have advanced education in psychological science, clinical or mental health practice, or related fields (Turvey, 2011). Although there are many different subdivisions of profiling, including victimology, personality typing, and crime scene analysis, a popular and controversial specialty of evaluating potential suspects is behavioral deception detection, more commonly called behavioral lie detection.

When we do not have direct physical evidence that a given person committed a crime, we often rely on behavioral evidence to assess guilt, including determining whether a suspect is lying. How do law enforcement personnel and criminal psychologists determine if someone is lying, and how reliable are the results? As discussed in Vignette 2, the polygraph machine, which measures physiological arousal by assessing heart rate, blood pressure, and other indicators, was developed in order to be a rigorous and scientific measurement of deception. The underlying premise is that deception causes arousal (particularly when people lie about important topics and do not want to get caught), which in turn produces detectable physiological reactions that can be measured by the machine and that indicate that the interviewee is lying. However, the machine does not tell polygraphers that a specific suspect is actually lying, only that the suspect is experiencing physiological arousal and similar reactions believed to be consistent with lying (Bunn, 2007). For this and other reasons, polygraph evaluation evidence is typically not admissible in court (National Research Council, 2003). Law enforcement personnel commonly also evaluate a suspect to decide if he or she might be lying. Blushing, blinking, and pausing have led law enforcement to believe that a particular person is being deceptive (King & Dunn, 2010; National Research Council, 2003). Unfortunately, despite substantial scientific research on detecting behavioral deception in both psychology and criminal justice, the two fields rarely cite each other; additionally, many manuals and textbooks in criminal justice fields present widely conflicting methods of behavioral lie detection, generally with the reassurance that these signs indicate deception and that the tactics can lead to high and accurate rates of detection (King & Dunn, 2010; see Blair, Levine, Reimer & McCluskey, 2012 for a reply). In addition to concerns about the accuracy of these tactics under optimal conditions, a suspect’s intoxication, illness, or personality quirks, or even the complex interplay of stereotype threat and the suspect’s perceived race (Najdowski, 2011) can provide innocent explanations for why he or she might appear deceptive. Because polygraph evidence as such is generally excluded from court, other evidence that directly ties a suspect to a crime scene is still needed in order to conclusively link a given suspect to a crime.
But what if the suspect confesses? Most people mistakenly believe that no one would ever confess to a crime they did not commit (Leo, 2008; Woody, Forrest & Stewart, 2010). Confessions are rarely doubted, because they are coming directly from the suspect and because they generally appear voluntary, even if they result from intense interpersonal pressure or even psychological coercion. Unfortunately, false confessions happen (Kassin, Drizin, Grisso, Gudjonsson, Leo & Redlich, 2010), and current methods of lie detection not only fail to recognize this, they can also seal the fate of someone who has falsely confessed by leading police to be excessively yet mistakenly confident in a suspect’s guilt. Many books intended for a law enforcement audience discuss behavioral analysis techniques and claim that speaking too much or too little, too slowly or too quickly, or blinking too frequently or too seldom can be representative of deceptive behaviors (Senese, 2005). As noted previously, these indicative behaviors are very general, highly variable, and often contradictory (King & Dunn, 2010). The result is that a person who is believed to be guilty and exhibits any of these behaviors must face human observers with typical confirmation biases – cognitive biases that lead humans to seek confirmation rather than disconfirmation of existing ideas – that can interfere with observers’ evaluation of exonerating evidence (Ask & Granhag, 2007).

**Historical and Ongoing Tensions in Forensic Psychology**

During the course of the twentieth century, as clinical psychology developed a formal code of professional ethics, forensic psychology faced similar concerns. A forensic psychologist, especially one working directly with clients in incarcerated settings, in the transition from incarceration to freedom, or in a police department, must balance the needs of their clients with the needs of the community as a whole. In the materials that follow, we review several ongoing conflicts that forensic psychologists face.

**Clinical assessment.** Clinical psychologists who work outside of forensic areas have a strong obligation to protect privacy and confidentiality of their communications with clients as well as to be familiar with the special circumstances in which confidentiality must be violated (e.g., if the client is a threat to himself or herself or to others, APA 2002, 2010). In a correctional setting, however, the client’s beliefs, motives, and behaviors may bring risks to the client, his or her peers, the psychologist, and corrections officers and therefore need to be managed. How do clinicians balance the patient’s need for privacy with the correctional model? These issues are particularly relevant for psychologists who work in military correctional facilities (Fink, 2016). For military psychologists working in military prisons such as Guantanamo Bay, the information their clients or patients discuss may be classified. A client may also be asked about traumatic experiences at the prison by a person wearing the same uniform as the officers who caused the trauma in the first place, particularly for detainees who faced coercive interrogations or enhanced interrogation techniques in the early 2000s (Fink, 2016). How does a psychologist help a client in these and similar situations? Forensic psychologists are asked to accomplish the very difficult task of following ethical standards and providing helpful care to their clients while still managing the military, criminal justice, cultural, and other goals relevant to their employment.

**The accuracy of criminal profiling.** Due to the popularity of television shows about forensic psychology, many people have incorrect ideas about the “criminal mind” and the ability of psychologists to identify perpetrators based only on a crime scene or other minimal evidence. While these portrayals make exciting entertainment, they have little basis in fact. Most criminal profiling is done by gathering statistical data on people who have committed similar crimes and doing some educated guessing (Godwin, 2000).
Various forms of entertainment media have shaped the field and expectations of the public. The CSI effect refers to the mistaken belief that forensic and behavioral evidence exists in every case and that cases that lack forensic evidence are weak and circumstantial (Shelton, 2008). Researchers believe that this belief became common due to the proliferation of crime-related television shows (Shelton, 2008). The effect is not limited to DNA or fingerprint evidence. As discussed previously, criminal profiling is as much an art as a science. A profile is merely an educated guess based on prior statistics and is not meant to serve as evidence of a particular suspect’s guilt. But, television shows such as Criminal Minds often show profilers that accurately predict height, build, marital status, clothing choices, and profession of a suspect. The “unsub” (i.e., a slang version of for “unidentified suspect” – a real term in the field) is usually depicted as very similar to the stated profile in the beginning, and television shows often show law enforcement arresting suspects that “fit the profile.” In actual policing, although profiling has been found useful in interrogating and understanding suspects, a study of law enforcement found that a profile only helped directly in solving a crime in 14 percent of cases (Scherer & Jarvis, 2014).

As the science behind criminal profiling is new, forensic fraud is also a possibility as criminal profilers seek to enhance their reputations (Turvey, 2011). Turvey describes criminal profilers who examined the evidence and stated as fact that they knew who did or did not commit the crime, as in the case of John Douglas in the JonBenet Ramsey murder (Turvey, 2011). Despite only having access to reports and crime scene documents that were provided by the Ramsey family attorney, Douglas went on national television to confidently state that the Ramseys’ could not have committed the crime. In cases in which criminal profilers are on-site, helping law enforcement during the course of a crime, as happened during the Waco Siege of 1993, profilers can also change the emphasis of a profile (intentionally or unintentionally) to fit more directly with the goals of law enforcement. During the Waco Siege, the Branch Davidians, a religious group, had secured themselves in their compound. The initial FBI profiler on scene wrote a behavioral analysis report cautioning against law enforcement breaching the building, worried that it may lead to violent action by David Koresh, the leader of the atypical religious group (Turvey, 2011). The FBI profiler was subsequently asked to revise his report, changing words and recommendations so that the FBI could launch an attack against the compound without violating the profiler’s recommendations. These facts were revealed at the Congressional hearing regarding the Waco Siege after the FBI invaded the compound. David Koresh and 85 of his followers died during the resulting shootout with law enforcement (Turvey, 2011).

For a final example, as discussed in Vignette 3, Timothy Masters spent almost 10 years in prison after he was mistakenly convicted of a homicide he did not commit (Masters & Lehto, 2012). Influential courtroom testimony in support of Masters’s guilt came from Reid Maloy, a forensic psychologist who testified powerfully yet incorrectly that Masters’s teenage drawings indicated that Masters was guilty of the murder of Peggy Hettrick. After nearly 10 years in prison, and after exhausting all of his available legal appeals, Masters became the first individual in the state of Colorado to be DNA-exonerated post-conviction (Masters & Lehto, 2012). One of his first and only speaking experiences about these events occurred in a local Psychology and Law class not long after his exoneration. Masters chose to speak to advanced psychology students in part because the faculty member (the second author of this chapter) encouraged Masters to seize the opportunity to criticize psychology and to speak directly, candidly, and critically about the risks of inflated confidence about evidence and criminal profiling based on drawings (personal communication, Timothy Masters, March, 2010).
The insanity defense. Most laypeople are at least superficially familiar with the insanity defense and know that defendants in criminal cases can be given lighter sentences, usually to be served in mental health facilities, if they are found to be insane at the time of the crime. But insanity is not the same as mental illness. Insanity is typically defined according to the M’Naughton rule, which requires a verdict of Not Guilty By Reason of Insanity when a defendant does not know what he or she was doing or does not know that his or her actions were wrong (Greene & Heilbrun, 2013). These criteria do not exist in the DSM-IV-TR or the DSM-5 and remain unrelated to diagnoses or assessments of people with mental illnesses. Therefore, while someone can be severely mentally ill to the point of hallucinations and delusions, a jury may decide that he or she still knows right from wrong. Importantly, the mental state of the defendant at the time of the crime is what matters – even if it is very different from how he or she may appear in court during trial. The opposite conditions may also exist – someone who is not mentally ill may have also been insane at the time of the criminal act, eliminating or lessening his or her culpability. Some of the most important questions in the field center on if or how the courts should take defendants’ mental illnesses into account when sentencing defendants who were found by a jury to be insane at the time of their crime?

All of these issues generate extensive scholarship, and there are no clear answers. Even if there were clear answers, we would continue to expect ongoing changes as psychology learns more, cultural expectations shift, and ethical standards change.

Conclusion

Emerging in the early twentieth century, forensic psychology infused early psychological science, practice, and perspectives into legal questions. After an initial wave of scholars and research (e.g., Arnold, Münsterberg, Binet), the field re-emerged in the mid-twentieth century with several subfields. Legal psychology, as described in a related chapter in this volume (Woody, 2016), continues to grow today, alongside more explicitly clinical fields such as correctional psychology, police psychology, and criminal psychology. Throughout its growth, tensions both between forensic psychology and other fields have emerged (including debates about the effectiveness of behavioral lie detection and criminal profiling) alongside debates within forensic psychology (e.g., effective and ethical responsibilities for confidentiality in civilian or military prison settings). The field continues to expand quickly, and we expect the applications and successes of the field as well as the tensions inherent in these questions will grow in parallel with increases in scholars and practitioners.

Vignettes

1. Hugo Münsterberg, Confession Evidence, and Legal Conflict

As we noted in the main chapter, Hugo Münsterberg (1908) receives credit for the founding of forensic psychology, as well as for the founding of industrial psychology (1913) and early contributions to clinical psychology (1909), among other fields. Despite several earlier scholars who addressed legal and policing questions, including Arnold (1906), von Liszt (1888), MacDonald (1905), and Gross (1906), Münsterberg is recognized as the leading pioneer of the field, in part because he engaged in conflicts with legal authorities in ways that others did not (Bornstein & Penrod, 2008).

Münsterberg was born in what is now Gdansk, Poland, and earned his doctoral degree at age 22 with Wundt at University of Leipzig before earning an MD at Heidelberg University (Woody & Viney, in press). He then came to Harvard in 1892 to run the psychology laboratory, but as is
evident from the opening paragraph of this vignette, his interests remained wide-ranging throughout his academic career. Other aspects of Münsterberg’s life shaped his experiences in the fledgling field of psychology and law. For example, although he came to the United States as a young man, he never deviated from his staunch German identity, even when these views became intensely unpopular during World War I, and his pro-German views carried extensive costs (Spillman & Spillman, 1993). Some scholars speculate that Münsterberg’s early death from a stroke in 1916 at age 53 was due in part to the tensions he felt between his homeland and his new nation (Woody & Viney, in press).

Münsterberg’s difficulties did not simply originate from his cultural views. He also directly criticized legal authorities as well as the law as a whole for failure to adequately consider human perception and decision making biases. The chapter notes some of the consequences of this, including the satirical trial penned by John Henry Wigmore (1909, see Sporer, 2006). In this vignette, we focus on another conflict he instigated with legal authorities: potentially false confessions.

In his chapter on “Untrue confessions” in On the Witness Stand, Münsterberg noted that he had received a letter from “a well-known nerve specialist in Chicago” (p. 139) about a recent homicide case (see Christison, 1907). No physical evidence connected any suspect to the crime. The young man who found the body would likely be viewed today as a person with a cognitive disability. He initially denied all responsibility for the murder, and then suddenly confessed, enthusiastically repeating his confession so that “Every time it became richer in detail” (1908, p. 165). This confession also directly contradicted the defendant’s alibi, which had been corroborated by his friends; these discrepancies between the evidence and the confession did not decrease the confidence that police and other observers had in the defendant’s guilt (see also Leo, 2008; Woody, 2016). The defendant maintained his guilt until six days prior to his execution, at which point he retracted his confession, stating that he did not recall confessing or any other events after the police officers aimed a handgun at him and threatened to shoot him if he did not confess.

Rather than see this confession as unequivocal evidence of guilt, Münsterberg raised the possibility of a false confession. He compared this young man’s confession to the demonstrably false confessions in the Salem witch trials and to a recent case of “conversion,” or radical and long-term personality change in a woman who saw the flash of a brass lamp in church (1908, p. 167). Münsterberg then asked whether the defendant in this case may have seen a flash that led to “autohypnotisation” (p. 159), potentially from the handgun police used to threaten his life. Even raising the possibility of a false confession led to extensive backlash from legal authorities and others.

Münsterberg notes that his reply to the physician in Chicago ended up in the newspapers accompanied by headlines that he quoted as “‘Harvard’s Contempt of Court’ . . . ‘Science Gone Crazy’ . . .and so it went on” (pp. 189-190). As contemporary scholars of interrogation and confession note (e.g., Leo, 2008; Woody et al., 2010; Woody, Forrest & Stewart, 2011), it is exceedingly difficult for observers to image that they would confess falsely, and observers extend this logic to include others. This cognitive bias and other factors cause confessions to remain the single most powerful form of evidence in the United States legal system. It is not surprising, particularly prior to DNA-exoneration of false confessors (see Garrett, 2010), that Münsterberg generated such intense and negative responses to his claim that the defendant appeared to confess falsely. As Münsterberg stated, most of his critics returned to the claim that it was “‘inconceivable that any man who was innocent of it should claim the infamy of guilt’” (1908, p. 142). He faced accusations of “another way of possibly cheating justice” and “emasculating court procedure and discouraging and disgusting every faithful officer of the law.” As one critic stated,
“We do not want any directions from Harvard University irresponsibles for paltering still further” (1908, pp. 141-142).

Despite Münsterberg’s emphasis on legal due process and his prescient concerns about false confessions, the backlash was considerable. At this time, the courts, alongside police, journalists, and the public, did not consider false confession a realistic occurrence. Münsterberg’s failure to shape public opinion in this case is representative of his limited success in inspiring legal changes in response to the emerging field of applied psychological science. These changes would have to wait until the 1980s and the work of Kassin, Wrightsman, Leo, and others began to raise the possibility of false confessions (Kassin & Wrightsman, 1981, 1985; Leo, 2008; Woody, 2016).

2. The Polygraph

After approximately a century, the polygraph remains one of the most important and most controversial tools in deception detection. According to Honts (2015), almost every of the more than 55,000 police departments in the United States has at least one polygrapher. How did this popular lie detection tool enter our culture, and how were psychologists involved?

Perhaps unsurprisingly, William Moulton Marston, a student of Hugo Münsterberg, claimed to have developed the first polygraph (Bunn, 1997). He used systolic blood pressure as an indicator of arousal and connected these measurements to the foundational assumption that underlie the polygraph, that deception (especially deception about important issues for which the liar does not want to get caught) causes physical arousal that observers can detect with proper tools (Marston, 1917). Marston claimed throughout his life that he was the inventor of the polygraph and that he developed the device as an undergraduate at Harvard (Bunn, 1997). He tested it with suspected spies during WWI, and in the famous Frye case he attempted but failed to inspire courts to accept polygraph results as evidence in trials (Frye v. United States, 1923).

As noted in the vignette about Marston in the Psychology and Law chapter in this volume (Woody, 2016), Marston went on to be a popularizer of psychology who even used his polygraph to evaluate physical arousal in response to romantic movie scenes by white women with blonde, brown, or red hair (Bunn, 1997). But, despite these evidently entertainment-oriented uses, the polygraph acquired and maintained its place in police departments, intelligence agencies, and employment interviews throughout the United States.

One aspect of the prominence of the polygraph relates to the large number of individuals who claimed to have invented it, including Dr. Orlando F. Scott, a Chicago physician, and Professor Leonard Keeler of the Scientific Crime Detection Laboratory of Northwestern University (Bunn, 2007). Additionally, the polygraph soared into widespread use in the 1930s, in the midst of public outcry, legal investigations, and court actions related to the widespread use of torture in police departments (Bunn, 2007; Leo, 1992; Woody, 2016). In this context, the polygraph provided an attractive, scientific, and more humane way to detect lies (i.e., a method that did not involve physical torture) and to inspire suspects to tell the truth. Its use helped move police departments away from their widespread uses of torture as an investigatory tool (Bunn, 2007).

The confidence the polygraph inspired was so great that in 1937, Governor Henry Horner of Illinois ordered Keeler to assess the claims of innocence made by Joseph Rappaport (Bunn, 2007). Rappaport had been convicted of murder and sentenced to die, but he continued to maintain his innocence. Keeler and his team arrived to conduct a polygraph examination just before Rappaport’s scheduled execution. Keeler conducted the examination in the morning and concluded that Rappaport’s changes in arousal in response to specific questions demonstrated his guilt, even though Rappaport denied all allegations. The state of Illinois then executed Rappaport.
just after noon (Bunn, 2007), with the New York Times (1937) article reporting “Lie detector seals doom” (p. 44).

Since its inception, scholars have both promoted and criticized the polygraph (see e.g., Reid & Inbau, 1977; Lykken, 1998, respectively). With some exceptions (e.g., the state of New Mexico where court have long allowed polygraph evidence, cases in which a defendant seeks to demonstrate innocence with polygraph testing, Honts, 2015), courts continue to exclude polygraph results from trials, following the tradition established by Frye v. United States (1923). As an important legal point, although polygraph results cannot typically come into court, courts readily accept any confession or admission made by a suspect during a polygraph examination (Leo, 2008), and these concerns have appeared justified in several prominent cases in which suspects falsely confessed after they were deceptively told that they failed polygraph examinations that they had actually passed (see e.g., Bandler, 2014a, 2014b; Innocence Project, 2015; Wells & Leo, 2008). Additionally, several early scholars of interrogation raised these concerns about the polygraph and false confessions (e.g., Meerloo, 1956; Sargant, 1957/1997). According to Leo (2008), however, the most common use of polygraph continues to be to inspire suspects to confess rather than to assess the truth value of suspects’ claims. The controversies about the polygraph, its accuracy, and its uses appear likely to continue into the future.

As a final note, William Moulton Marston is well-known for his other famous creation, one he developed under the pseudonym Charles Moulton. Marston is the creator of Wonder Woman (Bunn, 1997), the first woman superhero and a prominent cultural challenger of traditional gender roles in mid-twentieth century United States as well as today. Additionally, Wonder Woman used a magic lasso to make people tell the truth, perhaps an unsurprising superpower developed by the psychologist who claimed to have invented the polygraph.

3. Forensic Psychology Fails: The Case of Timothy Masters
On February 11, 1987, 15-year old Timothy Masters woke up and headed from the trailer home he shared with his father across a vacant lot to meet the school bus. As he walked, he briefly paused to look at something in the field. At the time, he thought it was a Resusci Anne doll, a CPR training manikin made to look like the upper half of a woman, so he walked on to the bus stop. Tragically, he had seen the partially disrobed body of Peggy Hettrick, a 36-year old woman who had been murdered the night before. His route to the bus stop, combined with poor or malicious detective work and confident yet erroneous testimony from a forensic psychologist, would culminate in Tim spending nearly 10 years in prison for a crime he did not commit (Masters & Lehto, 2012).

At this time in his life, Tim’s daily experiences were challenging. He faced extensive and chronic bullying at school and elsewhere, he and his father lived in a trailer in an affluent area of suburban Fort Collins, Colorado, and he and his father struggled with their relationship ever since the death of Tim’s mother four years prior. Tim coped with the bullying and other stresses by drawing. It is not surprising that his teenage drawings were dark and rife with heavy black lines, shadows, and violence. These drawings would eventually become evidence – the only evidence – in a highly publicized miscarriage of justice.

Why would Tim walk past what appeared to be a manikin in a vacant lot? His mother had passed away almost exactly four years earlier, and, because this was well-known at his school, he believed that the teens who often bullied him had placed a manikin in the field to torment him about his deceased mother. If this potential behavior appeared to him to fit into the pattern of bullying he faced each day at school, what must his daily experiences be like? Tim’s life changed when his coincidental walk past Peggy Hettrick’s body swept him into a homicide investigation.
The lead detective in the Peggy Hettrick's murder, James Broderick, pursued Tim as the prime suspect from the start, despite other suspects who emerged both early and later in the years-long investigation (Masters & Lehto, 2012). The journey from crime to trial required more than a decade, during which Tim joined the Navy and became a jet engine mechanic before his honorable discharge, after which he was hired by a major aircraft manufacturer to maintain, troubleshoot, and repair jet engines. In 1998, when Tim was 26, the case went to trial, upending his life and leading to his mistaken conviction and subsequent prison sentence (Masters & Lehto, 2012). How did a forensic psychologist shape these events?

Broderick initially sent Tim’s copious collection of drawings to Roy Hazelwood, an FBI profiler. After extensive analysis, Hazelwood reported that he believed Tim was a teenager having a difficult emotional time but did not appear likely to be the murderer (Masters & Lehto, 2012). Tellingly, Hazelwood withdrew from the case due to concerns about the investigation and the proposed trial strategies (Perri & Lichtenwald, 2010). The allegations specified in the civil suit settled out of court by the city of Fort Collins in 2010 are that Broderick then selected a subset of the drawings, crafted potential interpretations for these drawings that would fit the prosecution's case, and sent this subset of pre-interpreted drawings to Reid Meloy, a well-known forensic psychologist (Masters & Lehto, 2012). Meloy’s testimony would form the backbone of the case against Masters.

Despite having never met Masters, Meloy testified confidently and convincingly that Masters’s drawings indicated his guilt in the homicide of Peggy Hettrick. Meloy also allegedly strategized with the prosecution and police about the investigation and the trial (Masters & Lehto, 2012), and he definitively aligned himself with those who sought Masters’s conviction, hoping for a “successful prosecution” (Perri & Lichtenwald, 2010, p. 37) and limiting his status as an expert witness who is expected to remain impartial (Greene & Heilbrun, 2013). It is important to note that the allegations about this case include the claim that Broderick intentionally manipulated Meloy by pre-selecting and pre-interpreting a subset of Tim’s drawings (Masters & Lehto, 2012).

None of Tim’s drawings matched the crime scene, and no drawings reflected the actual facts of Peggy Hettrick’s murder. To be clear, beyond Tim’s pause as he walked through the field, there was never any reason to investigate him, and, even with his pause, there was never any evidence connecting him to the crime. Additionally, substantial amounts of exculpatory evidence existed to protect him from conviction (Masters & Lehto, 2012). For example, Tim’s father, an extremely vigilant Vietnam Veteran, verified that Tim did not wake up or leave the trailer on the night of the murder. Additionally, the genital mutilation of Peggy Hettrick’s body required extensive knowledge of female anatomy, an extremely sharp blade, and surgical skills (Masters & Lehto, 2012), none of which were possessed by Masters, a self-described “15-year old virgin” (Tim Masters, personal communication, December, 2010). As his attorney, Maria Liu, stated when asked about his eventual DNA exoneration in 2008, “he was only DNA exonerated because DNA evidence came back first” (personal communication, December, 2010) because extensive other evidence existed to support his innocence.

At trial, with the only evidence of guilt being his dark teenage drawings and Meloy’s interpretations of these drawings, Masters was convicted. He then lost his initial appeal and his appeal to the Colorado Supreme Court. No additional legal relief was available, and he prepared to spend the rest of his life in prison for a crime he did not commit. He then sent materials from his case to Maria Liu, a post-conviction defense attorney. Maria Liu worked with attorney David Wymore to successfully free Masters in 2008, and then they pursued his exoneration, which came in 2011 (Masters & Lehto, 2012).
Despite attempts to prosecute Broderick for perjury for his behavior in this case, including multiple potentially criminal actions not discussed in this vignette, these charges were dropped (Steffen, 2013). Tragically, Peggy Hettrick’s murder remains unsolved.

After exoneration, Tim is living well. He owns land near Fort Collins, Colorado and he works on his home, his father’s 1969 pickup truck, and other classic vehicles. Because pre-employment background checks reveal his mistaken conviction for homicide, he cannot acquire employment, so he calls himself “semi-retired” (Burnett, 2011, ¶13). He is clear that he will never have a normal life, but he is always grateful to wake up outside of prison.

Masters reluctantly spoke to classes about his experiences only twice (personal communication, December, 2010). Even reaching him was difficult. A student hand-carried a letter of introduction to Maria Liu’s office, and she conveyed the letter to Tim. I (Woody) then received an email from a return address with a fictitious name. In the email, Tim specified that he felt very negative toward psychology and psychologists but that he was curious. I noted that our classroom would have many future forensic psychologists, and I encouraged him to speak directly and critically about psychology and psychologists, and to seize this opportunity to shape future members of the field.

As a personal note, having Tim Masters and Maria Liu in my psychology and law class had more of an impact than almost anything else I have seen in a classroom. I hope that the students in our class who saw him and then went on to become forensic psychologists will not examine any suspect’s drawings as the only potential evidence of guilt, and I hope that they will stop their future colleagues from doing so. The risk of miscarriages of justice remains too high.

References


_Frye v. United States_, 293 F. 1013 (D. C. Cir. 1923).


