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Exemplar Studies for Teaching Research Methodology

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### Overview

One difference between methodology textbooks and subject area textbooks in psychology is that methodology texts often do not discuss specific research studies to demonstrate key concepts and designs. Consequently, instructors teaching a methods course are often left with few supporting examples of published studies employing different research designs to discuss and analyze in class.

We designed this resource to support students actively learning methodology in the classroom by providing instructors with an annotated bibliography of contemporary research to illustrate various research design elements in the context of topics that students will find engaging. Instructors can assign these articles as supplementary readings in order to provide a foundation for class discussion, activities, and critical thinking exercises. To facilitate this, each bibliographic entry includes in-class discussions starters that promote critical thinking as well as activities that use the research article as a foundation for developing new research questions and designs.

The articles we selected for this resource illustrate various research designs as well as serve as examples of specific design features such as inter-rater reliability, the use of confederates, and other methods utilized in a variety of subject areas (e.g., sensation/perception, health psychology, social psychology, and neuroscience). We have also identified the statistical analyses used in each article so that instructors could use this resource in a statistics course.

To help maximize the pedagogical value, each entry contains the following information:

1. the research design utilized;
2. the general subject areas associated with that study;
3. the statistical analyses used to test main hypotheses;
4. the major research design features the article illustrates;
5. the article reference according to the sixth edition of the *Publication Manual of the American Psychological Association* (APA, 2009);
6. a brief summary of the article;
7. suggestions for how to use the article in class, including discussion starters and in-class activities.

<b>Design</b>	Two-group Design; Between-subjects
<b>Subject Area(s)</b>	Sensation and Perception; Cognition
<b>Statistical Analysis</b>	One-way ANOVA; Chi Square
<b>Design Features</b>	Observational Research; Interrater Reliability; Priming
<b>Citation</b>	Holland, R. W., Hendriks, M., & Aarts, H. (2005). Smells like clean spirit: Nonconscious effects of scent on cognition and behavior. <i>Psychological Science, 16</i> , 689-693. doi:10.1111/j.14679280.2005.01597.x
<b>Summary</b>	In three studies, the authors examined unconscious influence of smell on behavior. Study 3 used a two-group design to examine the direct effect of citrus scent (exposed vs. nonexposed) on cleaning-related behaviors. The judges recorded the frequency of participants' crumb removal while eating.
<b>Suggested Use(s)</b>	<p><u>Discussion Starters:</u></p> <ul style="list-style-type: none"> <li>• What are the design elements (independent variable [IV], and dependent variable [DV]) and operational definitions?</li> <li>• What are the potential confounds?</li> <li>• What are the strengths and weaknesses of the study design?</li> <li>• In what situations might you smell cleaning fluids? Generate ways in which this could influence your behavior.</li> <li>• Could the activation of other senses (touch, taste, sound, sight) influence behavior and in what ways?</li> <li>• What other ways could one measure cleaning-related behaviors (observational and nonobservational)?</li> <li>• Why is interrater reliability an important consideration in studies relying on observations?</li> </ul> <p><u>In-class Activities:</u></p> <ul style="list-style-type: none"> <li>• Ask the class for other contexts where smell could influence behavior. Pick one of the examples given by the class, and then as a class or in small groups, generate a study to test the idea. <ul style="list-style-type: none"> <li>○ Suggestions in case students get stuck: smelling Cinnabons in the mall and buying behavior, smelling coffee and feeling energetic, smelling a campfire and wanting to roast marshmallows.</li> </ul> </li> <li>• To address interrater reliability, bring in biscuits and have two students (or two per group) randomly assigned to engage in clean versus messy behavior as defined in the assigned article. Others in the group or class should code their behavior and determine interrater reliability. Follow up by asking the class if it would be more accurate to just count the crumbs left behind.</li> </ul>

<b>Design</b>	Two-group Design; Between-subjects; Field experiment
<b>Subject Area(s)</b>	Social Psychology; Social Influence; Reciprocity
<b>Statistical Analysis</b>	<i>t</i> test; Correlation
<b>Design Features</b>	Field Experiment
<b>Citation</b>	Rind, B., & Strohmetz, D. (1999). Effect on restaurant tipping of a helpful message written on the back of customers' checks. <i>Journal of Applied Psychology</i> , 29, 139-144. doi:10.1111/j.15591816.1999.tb01378.x
<b>Summary</b>	To evaluate the effect that a helpful message from a server might have on restaurant tips, the server either wrote a message about an upcoming dinner special on the back of the dining check or left it blank. Dining parties who received a check with the helpful message tipped a higher percentage of the final bill than those who did not have this message on the back of their check.
<b>Suggested Use(s)</b>	<p><u>Discussion Starters:</u></p> <ul style="list-style-type: none"> <li>• What are the design elements (IV, DV) and operational definitions?</li> <li>• What are the potential confounds?</li> <li>• What are the strengths and weaknesses of the study design?</li> <li>• The message written on the back of the check concerned an upcoming special dinner at the restaurant. Is it possible that it was the content of the message rather than simply a personalized message from the server that accounts for the results? How might the authors have evaluated this possibility?</li> <li>• Researchers used index cards to randomly assign the dining parties to the experimental and control conditions. What other strategies could they have used for random assignment in this field experiment?</li> <li>• Why did the researchers instruct the server to behave in the same way when delivering the check at the end of the meal? What possible threats to internal validity might be created if the server's behavior varied when delivering the check?</li> <li>• How might the following aspects of this study limit the study's external validity? <ul style="list-style-type: none"> <li>○ A young female adult was the authors' accomplice.</li> <li>○ The study was conducted at a private country club.</li> <li>○ The meal was buffet style.</li> </ul> </li> </ul> <p><u>In-class Activities:</u></p> <ul style="list-style-type: none"> <li>• This study used only two groups. Have students suggest a third group the authors could have employed. What question(s) would this third group allow the authors to address in the study?</li> <li>• This study used an empty control group. Have students think of an additional control group to add to the study. What new question(s) would the authors address by having this extra control group?</li> </ul>

	<ul style="list-style-type: none"><li>• The authors suggested that the increase in tips may have been due to reciprocity concerns rather than perceptions of friendliness. Have the class redesign this experiment to test these competing ideas.</li><li>• Have students create a list of behaviors that may increase a server's tips. Have them design an experiment that would scientifically evaluate the impact of those efforts on tips received.</li><li>• Have students design an experiment that would scientifically evaluate tipping in another context (e.g., a tip jar at a coffee or ice cream shop).</li></ul>
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<b>Design</b>	Multiple-group Design; Between-subjects
<b>Subject Area(s)</b>	Social Psychology; Social Exclusion; Prosocial Behavior
<b>Statistical Analysis</b>	One-way ANOVA; Chi Square
<b>Design Features</b>	False Feedback; Deception
<b>Citation</b>	Twenge, J. M., Baumeister, R. F., DeWall, C. N., Ciarocco, N. J., & Bartels, J. M. (2007). Social exclusion decreases pro-social behavior. <i>Journal of Personality and Social Psychology</i> , 92, 55-66. doi:10.1037/0022-3514.92.1.56
<b>Summary</b>	This article indicated that being excluded from social groups leads to decreases in prosocial behavior. Participants received either no feedback on a personality measure or one of three types of false feedback that indicated a future full of rewarding relationships, loneliness, or unfortunate accidents. Participants receiving the social exclusion feedback were unwilling to volunteer for further lab experiments and, after receiving payment for study participation, donated less money to a student emergency fund. In addition, those receiving the future exclusion feedback were less likely to help in a mishap where a cup of pencils accidentally spilled on the floor and cooperated less in a game with another student.
<b>Suggested Use(s)</b>	<p><u>Discussion Starters:</u></p> <ul style="list-style-type: none"> <li>• What are the design elements (IV, DV) and operational definitions?</li> <li>• What are the potential confounds?</li> <li>• What are the strengths and weaknesses of the study design?</li> <li>• How do you expect prosocial activity after social exclusion to differ in a laboratory setting versus in the real world?</li> <li>• Results in the lab were obtained after one encounter with social exclusion feedback. What type of responses might repeated daily social exclusion produce?</li> <li>• What other behaviors might change if participants receive feedback that they will be alone later in life? How could researchers assess these behaviors?</li> <li>• Is it ethical to give people false negative feedback in psychology experiments? When might such methods be justified and necessary and when might they not?</li> <li>• Introduce the idea that self-report and behavioral measures are often inconsistent. Have students consider whether self-reports of prosocial behavior would have matched actual behavior. In other words, would participants have predicted their decrease in prosocial activity after receiving the socially excluding feedback?</li> </ul> <p><u>In-class Activities:</u></p> <ul style="list-style-type: none"> <li>• This study used false feedback from a personality measure to</li> </ul>

	<p>manipulate social exclusion (future alone, future belonging, future misfortune, and no feedback control). Ask the class for other ways to manipulate participants' feelings of belonging and exclusion. As a class or in small groups, generate and develop a new manipulation that includes exclusion, belonging, and at least one control group.</p> <ul style="list-style-type: none"><li>○ Suggestions in case students get stuck: peer selection; have participants work in a group and subsequently tell each participant that (1) no one chose to work with him or her, (2) everyone wanted to work with him or her, or (3) nothing. Then introduce the dependent variable.</li><li>● How researchers operationally define variables determines the results of a study. This study used various ways to assess prosocial behavior. Ask the class for other ways to assess helpfulness (i.e., find a new way to operationally define it). As a class or in small groups, generate and develop new methods to measure prosocial behavior.<ul style="list-style-type: none"><li>○ Suggestions in case students get stuck: holding a door for others, offering directions, allowing a student to borrow notes for a class.</li></ul></li></ul>
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<b>Design</b>	Multiple-group Design; Between-subjects
<b>Subject Area(s)</b>	Social Psychology; Social Influence
<b>Statistical Analysis</b>	One-way ANOVA; Correlation; Mediation Analysis
<b>Design Elements</b>	Videotaped Stimulus Presentation; Self-report Scales
<b>Citation</b>	Scherer, C. R., & Sagarin, B. J. (2006). Indecent influence: The positive effects of obscenity on persuasion. <i>Social Influence, 1</i> , 138-146. doi:10.1080/15534510600747597
<b>Summary</b>	This multigroup experiment examined the use of an obscenity on the persuasiveness of a pro-attitudinal message and on perceptions of the communicator. Participants watched one of three versions of a video in which the speaker advocated lowering tuition at another university. In the first version, the speaker used the word “damn” at the beginning of the message. In the second version, “damn” appeared at the end of the message. In the control condition, the speaker did not use the word “damn.” The use of the obscenity, regardless of position, made the message more effective. Swearing, however, did not impact the speaker’s perceived credibility.
<b>Suggested Use(s)</b>	<p><u>Discussion Starters:</u></p> <ul style="list-style-type: none"> <li>• What are the design elements (IV, DV) and operational definitions?</li> <li>• What are the potential confounds?</li> <li>• What are the strengths and weaknesses of the study design?</li> <li>• Why did the researchers use a mild obscenity to manipulate the variable of interest? Why didn’t the researchers use a more severe obscenity to test their hypotheses? Would using a more severe obscenity raise ethical concerns in this study? Why or why not?</li> <li>• This study found that the use of a mild obscenity affected the persuasiveness of the message, but not the perceived credibility of the speaker. Would the results be similar if the speaker had indiscriminately used obscenity throughout the persuasive attempt? Why?</li> <li>• In this study, a male speaker delivered the message. Would these findings generalize to a situation where the speaker was female? Why or why not?</li> <li>• In the current study, the researchers found that obscenity could positively impact the persuasiveness of a videotaped speech. How might the results differ if participants read the speech rather than view a videotape of the speaker delivering the speech?</li> </ul> <p><u>In-class Activities:</u></p> <ul style="list-style-type: none"> <li>• Originally the researchers intended to have four conditions: obscenity used at the beginning of the message, obscenity used in the middle of the message, obscenity used at the end of the message, and no</li> </ul>

	<p>obscurity used in the message. However, as they explained in a footnote, the researchers omitted the condition where the obscenity appeared in the middle of the message because they realized it was not clear what this obscenity represented. That is, did the obscenity reflect the speaker's opinion of the focus of the message (e.g., "damn school") or his intensity or credibility? The researchers concluded that the problem represented a potential confound and consequently dropped this condition from the study. Have students try to redesign the study to eliminate the potentially confounding factor and allow them to test whether the use of swearing in the middle of the message can influence the audience.</p> <ul style="list-style-type: none"><li>• Have the class suggest other ways that a person may use language to enhance either the speaker's credibility or the persuasiveness of a message. Based on these suggestions, have the class design a study to test the efficacy of these suggestions.<ul style="list-style-type: none"><li>○ Suggestions in case students get stuck: the influence of obscenities on teaching evaluations or on evaluation of political candidates.</li></ul></li></ul>
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<b>Design</b>	Factorial Design; Between-subjects
<b>Subject Area(s)</b>	Social Psychology; Gender; Stereotypes; Impression Formation
<b>Statistical Analysis</b>	Two-way ANOVA
<b>Design Features</b>	Person Perception; Replication and Extension
<b>Citation</b>	Wookey, M. L., Graves, N. A., & Butler, J. C., (2009). Effects of a sexy appearance on perceived competence of women. <i>The Journal of Social Psychology, 149</i> , 116-118. doi:10.3200/SOCP.149.1.116-118
<b>Summary</b>	This study sought to determine if a woman's appearance influences perceptions of her ability to perform a job. Undergraduates rated photographs of women as part of a 2 (Career: office assistant vs. CEO ) X 2 (Appearance: professional attire vs. sexual attire) design. Participants rated photos along several dimensions such as grade point average, organizational skills, leadership, dependability, and intelligence. The findings, that a sexually dressed CEO was perceived most negatively, replicated a previous study.
<b>Suggested Use(s)</b>	<p><u>Discussion Starters:</u></p> <ul style="list-style-type: none"> <li>• What are the design elements (IV, DV) and operational definitions?</li> <li>• What are the potential confounds?</li> <li>• What are the strengths and weaknesses of the study design?</li> <li>• Would these findings generalize to other types of jobs? Provide examples to support the ideas.</li> <li>• Could other types of attire lead to unfavorable impressions? Provide examples to support the ideas.</li> <li>• How could the researchers measure the participants' perceptions without using self-report? Why might new measures be a good idea?</li> <li>• In what contexts can appearance be negative for men? Provide examples to support the ideas.</li> </ul> <p><u>In-class Activities:</u></p> <ul style="list-style-type: none"> <li>• Ask students how they could study similar variables using confederates. What contexts would work? How would the confederate(s) need to act?</li> <li>• Give students a general research question: What other factors might influence perceptions of an individual? As a class or in small groups, generate a feasible and ethical study to test their ideas. <ul style="list-style-type: none"> <li>○ Suggestions in case students get stuck: how the presence of a tattoo influences helping behavior, how the appearance of a professor influences students' perceptions of the professor, how the appearance of a college application influences acceptance, how a student's appearance influences a professor's perception of the student.</li> </ul> </li> </ul>

<b>Design</b>	Factorial Design; Between-subjects
<b>Subject Area(s)</b>	Social Psychology; Group Dynamics; Ostracism
<b>Statistical Analysis</b>	Two-way ANOVA
<b>Design Features</b>	Use of Confederates; Manipulation Checks; Content Analyses; Interitem Reliability; Interrater Reliability
<b>Citation</b>	Smith, A., & Williams, K. D. (2004). R U there? Ostracism by cell phone text messages. <i>Group Dynamics: Theory, Research, and Practice</i> , 8, 291-301. doi:10.1037/1089-2699.8.4.291
<b>Summary</b>	To evaluate whether imagined ostracism can be a painful experience for individuals, researchers instructed participants to interact with two confederates via texting. For half of the participants, the confederates stopped responding to the participants' text messages after the initial conversation. These participants reported a worse mood, a lower sense of belonging and control, as well as lower self-esteem compared to participants whose text messages were answered by the confederates. Whether the participants perceived themselves to be part of an in-group or out-group did not influence the ostracism effect.
<b>Suggested Use(s)</b>	<p><u>Discussion Starters:</u></p> <ul style="list-style-type: none"> <li>• What are the design elements (IV, DV) and operational definitions?</li> <li>• What are the potential confounds?</li> <li>• What are the strengths and weaknesses of the study design?</li> <li>• The authors described the use of texting as a “more conservative test of the impact of ostracism” (p. 294). What did they mean by “more conservative,” and why might an experimenter opt for a more conservative test of the phenomenon of interest?</li> <li>• The authors wanted to explore possible moderating factors influencing the impact of ostracism on individuals. What is meant by a moderating factor? How does this differ from a mediating factor?</li> <li>• What factors influence the statistical power in a study? The authors stated that they excluded the data from three participants who guessed the true purpose of the experiment. Was this really necessary, especially as the exclusion reduced the statistical power of the study?</li> <li>• Why was it important that the raters who analyzed the content of the text message be blind to the experimental conditions of the participants? How might knowing what condition the participant was in influence the coding process?</li> <li>• Why did the authors include manipulation checks? What role do manipulation checks play when someone evaluates the internal validity of a study?</li> <li>• Why was it important that the authors evaluated the reliability of the individual questionnaire items before they created index scores for each dependent variable?</li> </ul>

	<ul style="list-style-type: none"><li>• The authors reported that very few participants filled out the open-ended questions on the postexperimental questionnaire. How might the authors have encouraged more participants to respond to these questions?</li></ul> <p><u>In-class Activities:</u></p> <ul style="list-style-type: none"><li>• The authors described the coding categories they used to analyze the participants' text messages. Have students develop coding categories to content analyze the types of text messages that college students send. If a student is willing to share his or her text messages, have the class try to categorize those messages using the developed classifications. This activity can lead to a discussion of the role of reliability and validity in content analysis.</li><li>• The authors manipulated in-group/out-group status by leading the participants to believe they were either similar to or different from the confederates with respect to smoking habits. Have students suggest other ways that the authors might have manipulated in-group/out-group status that would be meaningful to college students. Have students compare their suggested strategies in terms of manipulation strength.</li><li>• Have students suggest other ways that the authors might have manipulated participants' feelings of ostracism.</li></ul>
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<b>Design</b>	Within-subjects Design
<b>Subject Area(s)</b>	Neuropsychology; Social Psychology; Intimate Relationships
<b>Statistical Analysis</b>	Correlation
<b>Design Features</b>	Physiological Assessment (fMRI)
<b>Citation</b>	Aron, A., Fisher, H., Mashek, D. J., Strong, G., Li, H., & Brown, L. L. (2005). Reward, motivation, and emotional systems associated with early-stage intense romantic love. <i>Journal of Neurophysiology</i> , 94, 327-337. doi:10.1152/jn.00838.2004
<b>Summary</b>	This research focused on the brain functioning of people in love. Participants who rated themselves as being intensely in love, viewed a photo of their beloved, did a distracter task, and then viewed a photo of a neutral acquaintance while researchers took functional magnetic resonance imagery (fMRI). Each participant repeated the procedure six times. When participants looked at pictures of their beloved, the fMRI indicated systematic activation of particular parts of the brain. Intense romantic love is connected with reward regions of the brain, as well as the motivation system needed to acquire rewards.
<b>Suggested Use(s)</b>	<p><u>Discussion Starters:</u></p> <ul style="list-style-type: none"> <li>• What are the design elements (IV, DV) and operational definitions?</li> <li>• What are the potential confounds?</li> <li>• What are the strengths and weaknesses of the study design?</li> <li>• What are the advantages and disadvantages of using fMRI in psychological research?</li> <li>• Is studying brain functioning necessary for understanding human behavior?</li> <li>• What other human experiences would benefit from research using fMRI?</li> <li>• Why might the use of distracting tasks between the exposures to photos be important? Is it necessary?</li> </ul> <p><u>In-class Activities:</u></p> <ul style="list-style-type: none"> <li>• How researchers operationally define variables determines the results of a study. Ask the class for other ways the researchers could have elicited the feelings of romantic love in this research (i.e., find a new way to operationally define it). In small groups, have them develop a new way to induce the feelings of romantic love in participants. Be sure to include a control group as well. <ul style="list-style-type: none"> <li>○ Suggestions in case students get stuck: videos; audio recordings; touch; smell.</li> </ul> </li> <li>• Extend this activity by having each group generate a study to test the idea that reward is involved in feeling of romantic love without their using an fMRI as the dependent variable.</li> </ul>

<b>Design</b>	Within-subjects Design
<b>Subject Area(s)</b>	Health Psychology; Human Sexuality
<b>Statistical Analysis</b>	Repeated Measures ANOVA
<b>Design Features</b>	Behavioral Diaries; Repeated Measures
<b>Citation</b>	Leigh, B. C. (1993). Alcohol consumption and sexual activity as reported with a diary technique. <i>Journal of Abnormal Psychology, 102</i> , 490-493. doi:10.1037/0021-843X.102.3.490
<b>Summary</b>	<p>This study used the diary method to examine the potential connection between alcohol consumption and sexual behavior. Participants who responded to newspaper advertisements recorded their drinking and sexual behaviors on a weekly basis over a 10-week period. For each drinking episode, participants recorded the time of day that alcohol consumption began and ended, as well as the quantity and types of alcohol consumed. For each sexual encounter, participants noted the time of sexual activity, partner characteristics (new, occasional, regular, or main partner), types of non-intercourse and intercourse activities engaged in, and type of contraception used, if any. Results indicated an average of 2.6 sexual encounters and 4.7 drinking episodes per week. People on average drank 3.5 drinks per episode. Overall, sexual activity was less likely to occur when participants consumed alcohol. Additionally, drinking was not related to unprotected sex with new or occasional partners. This result suggests that alcohol decreases sexual activity and does not account for risky sexual behavior.</p>
<b>Suggested Use(s)</b>	<p><u>Discussion Starters:</u></p> <ul style="list-style-type: none"> <li>• What are the design elements (IV, DV) and operational definitions?</li> <li>• What are the potential confounds?</li> <li>• What are the strengths and weaknesses of the study design?</li> <li>• What difficulties come from assessing behaviors such as drinking and sexual activity (e.g., social desirability bias)? What are ways to limit such difficulties?</li> <li>• Was a sample solicited from newspaper ads the best possible sample to use? What are the advantages and disadvantages of this sample selection method? What are other ways the researchers could have collected a sample?</li> <li>• What other behaviors could researchers assess with behavioral diaries? Why?</li> <li>• Why might the diary technique be preferable to laboratory research on drinking and sexual activity?</li> </ul> <p><u>In-class Activity:</u></p> <ul style="list-style-type: none"> <li>• Ask the class for other factors that might play a role in sexual activity and practicing safe sex. In small groups, have students pick one</li> </ul>

	<p>factor that might play a role and ask them to develop a set of questions that would assess this factor over a 10-week period.</p> <ul style="list-style-type: none"><li>○ Suggestions in case students get stuck: location of drinking episode, use of illegal drugs, characteristics of friends present (e.g., number, relationship status).</li></ul>
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<b>Design</b>	Mixed Design
<b>Subject Area(s)</b>	Health Psychology; Social Psychology; Persuasion
<b>Statistical Analysis</b>	Repeated Measures ANOVA
<b>Design Features</b>	Computerized Stimulus Presentation; Coding of Open-ended Responses
<b>Citation</b>	Stark, E., Kim, A., Miller, C., & Borgida, E. (2008). Effects of including a graphic warning label in advertisements for reduced-exposure products: Implications for persuasion and policy. <i>Journal of Applied Social Psychology, 38</i> , 281-293. doi:10.1111/j.1559-1816.2008.00406.x
<b>Summary</b>	This study examined the effectiveness of graphic warnings (i.e., pictures) for reducing the appeal of tobacco products. In the study, researchers exposed smokers and nonsmokers to combinations of large versus small warning labels and the inclusion versus omission of graphic pictures on three types of tobacco products. For the within-subjects component, each participant saw advertisements for three products (Skoal™ tobacco, Commit™ lozenges, and Omni™ reduced exposure cigarettes). For the between-subjects component, participants saw either a Surgeon General's tobacco warning label, or a graphic picture. Within those groups, the size of the advertisement also varied. The dependent variables included ratings of interest in trying the product, desire to purchase the product, perceived safety of the product, trustworthiness of the product, and overall appeal of the product. The graphic picture was an effective deterrent.
<b>Suggested Use(s)</b>	<p><u>Discussion Starters:</u></p> <ul style="list-style-type: none"> <li>• What are the design elements (IV, DV) and operational definitions?</li> <li>• What are the potential confounds?</li> <li>• What are the strengths and weaknesses of the study design?</li> <li>• In terms of designating smokers from nonsmokers, is it problematic to separate solely on whether they have smoked in the last 30 days? What improvements could the researchers make that might be helpful for testing the hypotheses?</li> <li>• What are the trade-offs in terms of control versus realism in presenting the advertisements on the computer? What could be done differently?</li> <li>• Were the selected products ideal for an undergraduate sample? How might the results of this study differ if other tobacco products were used?</li> <li>• What is a different way to operationally define the dependent variable? What other ways could one measure the impact of the advertisements on smokers (especially ways that may be less prone to social desirability)?</li> </ul> <p><u>In-class Activities:</u></p> <ul style="list-style-type: none"> <li>• Ask the class for other products that might benefit from graphic pictures. As a class or in small groups, generate a study to test their idea(s).</li> </ul>

	<ul style="list-style-type: none"><li>○ Suggestions in case students get stuck: energy drinks, alcohol, coffee, prescription drugs, tanning beds.</li><li>● This study used graphic pictures of diseased body parts. Ask the class for other types of pictures that might be effective. As a class or in small groups, generate a study to test their idea(s).<ul style="list-style-type: none"><li>○ Suggestions in case students get stuck: wrinkles, yellowing skin, discolored teeth, children who were negatively influenced.</li></ul></li><li>● Bring in clips of antismoking commercials (<a href="http://anti-smoking-ads.blogspot.com/">http://anti-smoking-ads.blogspot.com/</a> is a good source). Ask students which messages they think are most and least effective. As a class or in small groups, generate a study that will test the effectiveness of the messages.</li></ul>
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<b>Design</b>	Mixed Design
<b>Subject Area(s)</b>	Developmental; Perception; Nurturance
<b>Statistical Analysis</b>	<i>t</i> test (paired sample); Correlation; Repeated Measures ANOVA
<b>Design Features</b>	Slideshow Presentation of Stimuli; Physiological Assessment (BioPac); Behavioral Measures (grip strength and skill at the game “Operation”)
<b>Citation</b>	Sherman, G. D., Haidt, J., & Coan, J. A. (2009). Viewing cute images increases behavioral carefulness. <i>Emotion</i> , 9, 282-286. doi:10.1037/a0014904
<b>Summary</b>	This article examined how the perception of cuteness influences behavioral carefulness, enhancing people’s ability to care for infants. While researchers took physiological measures of heart activity and skin conductance, they exposed participants to a slide show of pictures of either infant animals (kittens and puppies) previously judged as very cute or adult animals (cats and dogs) judged to be less cute. Both before and after the slideshow, participants played the game “Operation” that required them to use tweezers to remove plastic body parts without touching the sides of the compartments. The game served as an assessment of behavioral carefulness. Participants exposed to cute infant animals displayed greater improvements in fine-motor control from before to after the slide show. Lack of consistent changes in physiological measures ruled out general physiological arousal as an explanation. Results indicated that cuteness not only motivates people to nurture, but also enhances their ability to do so.
<b>Suggested Use(s)</b>	<p><u>Discussion Starters:</u></p> <ul style="list-style-type: none"> <li>• What are the design elements (IV, DV) and operational definitions?</li> <li>• What are the potential confounds?</li> <li>• What are the strengths and weaknesses of the study design?</li> <li>• How strong is the external validity of this research design? How effectively does the manipulation of cuteness used in the study relate to infant care? Does a participant’s performance in the game “Operation” really transfer to nurturing? Why or why not?</li> <li>• One element in this design was a pretest and posttest measure. What are the advantages of using this type of design? Was it necessary?</li> </ul> <p><u>In-class Activities:</u></p> <ul style="list-style-type: none"> <li>• Ask the class for other ways to manipulate cuteness. As a class or in small groups, generate and develop a new manipulation for cuteness. <ul style="list-style-type: none"> <li>○ Suggestions in case students get stuck: the sounds of babies cooing versus children playing; the smell of baby powder versus deodorant.</li> </ul> </li> <li>• This study used the game “Operation” to assess carefulness via fine motor control. In small groups ask the class to generate other ways to measure carefulness. <ul style="list-style-type: none"> <li>○ Suggestions in case students get stuck: walking a balance</li> </ul> </li> </ul>

	beam, carrying an egg on a spoon, playing a video game that takes dexterity, providing handwriting samples.
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<b>Design</b>	Mixed Design
<b>Subject Area(s)</b>	Social Psychology; Attraction; Relationship Initiation; Nonverbal Communication
<b>Statistical Analysis</b>	<i>t</i> test (paired sample); Repeated Measures ANOVA
<b>Design Features</b>	Speed-dating Paradigm; Naturalistic Observation
<b>Citation</b>	Place, S. S., Todd, P. M., Penke, L., & Asendorpf, J. B. (2009). The ability to judge the romantic interest of others. <i>Psychological Science, 20</i> , 22-26. doi:10.1111/j.1467-9280.2008.02248.x
<b>Summary</b>	This study sought to determine whether a third party could discern romantic interest between two strangers. To test this, male and female observers watched video clips of speed-dating situations to determine the individual speed dater's level of romantic interest toward the speed-dating partner. Participants observed clips of different lengths (10 vs. 30 s), and from different parts of the speed date (beginning, middle, end). Each participant rated one long and three short video clips. The researchers also coded for participants' gender (male or female) and relationship status (single or in a relationship). Results indicated that participants were able to discern romantic interest at above chance levels. Length of clip did not influence accuracy, although the part of the speed date did.
<b>Suggested Use(s)</b>	<p><u>Discussion Starters:</u></p> <ul style="list-style-type: none"> <li>• What are the design elements (IV, DV) and operational definitions?</li> <li>• What are the potential confounds?</li> <li>• What are the strengths and weaknesses of the study design?</li> <li>• Why did the researchers use videotapes of German speed dates when the observers were from the United States?</li> <li>• Explain the matching hypothesis to students. The matching hypothesis is the notion that partners of approximately equal physical attractiveness end up together (White, 1980). How might this have influenced an observer's perceptions?</li> <li>• In what other contexts could researchers study the accuracy of interpreting nonverbal behavior? <ul style="list-style-type: none"> <li>○ Suggestions in case students get stuck: job interview, lie detection in criminal investigations, talking to a boss or superior, a doctor talking to patients about their health.</li> </ul> </li> </ul> <p><u>In-class Activities:</u></p> <ul style="list-style-type: none"> <li>• Ask the class what pieces of information they think the observers were using to make their judgments of romantic interest. <ul style="list-style-type: none"> <li>○ Suggestions in case students get stuck: facial expressions, eye contact, body posture, proximity, tone of voice, amount of speech, clothing.</li> </ul> </li> <li>• As a class or in small groups, generate a study to isolate and test one or more of students' ideas for other contexts in which to study the</li> </ul>

	<p>accuracy of interpreting nonverbal behavior.</p> <ul style="list-style-type: none"><li>• Have students observe the nonverbal behavior of students in a class to see if they can predict how interested the students are in the lecture. This could be done live or through a videotape of the class. Based on this article, it would require only a very short observation or clip (less than a minute). Get each student's rating of her or his own interest and then have your own students focus on a single person. Another option would be to pick only a handful of students from the class being observed and have everyone focus on them. This option would also provide an opportunity to obtain reliability among the observers.</li></ul>
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