The Effects of Framing on Attitudes Toward Marijuana Use

Hair Color Stereotypes and Their Associated Perceptions in Relationships and the Workplace

Personal Prejudice: Examining Relations Among Trait Characteristics, Parental Experiences, and Implicit Bias

Social Anxiety and Rumination: Effect on Anticipatory Anxiety, Memory Bias, and Beliefs

Factors Affecting Teens’ Attitudes Toward Their Pregnant Peers

Rapist Development: An Investigation of Rapists’ Attitudes Toward Women and Parental Style

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The current era of technology and information has created the perfect opportunity for the media, advertisements, lobbyists, and political parties to present information suited to their needs through framing (Traub, 1977). Message framing involves presenting information in a positive (supportive) or negative (unsupportive) way. Many political issues are especially reliant on public rhetoric to provide information because citizens have no personal experience with the issue (Joslyn & Haider-Markel, 2002). Previous research suggests that framing information can greatly influence a person’s attitudes and actions regarding the relevant information, especially when the information is readily available and from a trusted source (Ferguson & Gallagher, 2007; Jasper, Goel, Einarsen, Gallo, & Koren, 2001; Joslyn & Haider-Markel, 2002).

Most of the current college population was born during a time of rigorous political campaigns to prevent and punish drug use in America. The 1970 Comprehensive Drug Abuse Prevention and Control Act is the most thorough and least flexible federal drug act in the history of the U.S. (Schmalleger, 2009). This act established categories for drugs according to dangerousness (Schedule I being the highest class) and assigned penalties according to each category. Then the Anti-Drug Abuse Act of 1988 (which strived for a drug-free America by 1995), the Drug Abuse and Resistance Education (DARE) program, and three-strike rules in many states followed it (Schmalleger, 2009). Publicizing the risks and dangers involved in drug use promoted public support for these campaigns. Another consequence of these campaigns has been the appearance of opposing groups that provide contrary information denouncing drug control laws and demanding freedom of choice.

Growing up exposed to the war on drugs and to programs like DARE has made young adults an age group of interest concerning the perception of drug use. There has been a great deal of research concerning illicit alcohol use (excessive use and use by underage people) among college populations. According to a recent survey by The Core Institute, alcohol is the most commonly used controlled drug among U.S. college students, with marijuana as the second (Lewis & Clemens, 2008). The recent push for legalizing medicinal and even recreational marijuana has caused researchers to examine marijuana use in the U.S. and others. Osborne and Fogel (2008) conducted a qualitative analysis of why adult Canadians use marijuana recreationally even

**ABSTRACT.** The experimenter evaluated attitudes about the acceptability of marijuana use on a college campus after participants read 1 of 4 framed informational pages regarding medical and recreational marijuana use. Students who had never used marijuana were more likely to find medical use more acceptable than recreational use. Students who had used marijuana found both medical and recreational use more acceptable than nonusers. Participants found it more acceptable for a typical college student to use marijuana than a close friend or themselves. The effect of framing the information positively or negatively was not statistically significant. The results have implications for future research.
The Effects of Framing on Attitudes

though it is illegal in Canada as in the U.S. The researchers concluded that motivations for use did not involve issues of legality but included experiencing a pleasurable sensation both physically and mentally, trying something new, understanding why others use marijuana, introspection, and relaxation. Their respondents considered themselves responsible people who used marijuana recreationally, not habitually. The Canadian government and comparable democratic nations are researching how marijuana use becomes a social norm and what steps should be taken toward regulation and responsible use (Osborne & Fogel, 2008).

Social norms seem to be separate from the laws of drug prohibition in the U.S., Canada, and other nations. Lewis and Clemens (2008) evaluated how social norms, not legislation, might influence the prevalence and perception of substance use. The researchers defined a social norm as a situation in which “behavior is influenced by incorrect perceptions of how other members of our social groups think and act” (p. 20). They evaluated how the perceived drug use by close friends and by typical students correlated with the participants’ own use. Their results supported the idea that the more prevalent a behavior such as alcohol and marijuana use is perceived to be among friends, the more likely the participant is to use, even in defiance of drug laws. Lewis and Clemens suggested that their results might be skewed given participants’ exposure to biased information about marijuana use prior to the study, creating the existence of a perceived social norm.

The influence of social norms can also be compared across cultures. Jones and Claster (2003) compared differences in perceptions of marijuana users from two cultures: the Netherlands, where marijuana use has been decriminalized, and the U.S., where marijuana is a Schedule I substance (Marijuana, 2010). They suggested that the countries’ different drug policies create two different sets of social norms and, as a result, two generally different attitudes about marijuana use. As predicted, college students in the U.S. gave much more negative ratings of a supposed marijuana user than students in the Netherlands. The researchers attributed the difference to socialization. College students in the Netherlands have learned to accept marijuana use as a tolerable behavior, and students in the U.S. learned to have a negative view of drug use (Jones & Claster). Another interesting finding was that U.S. college students used more marijuana and used more often than students in the Netherlands (although not to a statistically significant amount). This study supports the idea that accurate information and tolerance might create a general acceptance of use, but not necessarily a higher prevalence of use.

Related to social norm theory, the false consensus effect may also influence people’s perceptions of drug use. Wolfson (2000) defined false consensus as the “tendency for people to assume that others share their attitudes and behavior to a greater extent than they actually do” (p. 295). False consensus provides an inaccurate sense of social support for people engaging in an activity in which only a minority of people participates. Wolfson administered an anonymous questionnaire to determine the extent of marijuana and amphetamine use and how participants viewed people who used these drugs. The most relevant response was the participants’ estimates of how many of their friends and how many people in the entire student population used marijuana. Users of both drugs gave a higher estimate of marijuana users than did students who had used neither drug (Wolfson, 2000). Regardless of which group was more accurate, the differences in participant estimates were consistent with Wolfson’s definition of false consensus. These estimates also demonstrate the influence of using or not using drugs on perceptions.

Traub (1977) was also interested in comparing users’ and nonusers’ perceptions of marijuana use. With exposure to the mass media of the time, Traub expected that both users and nonusers would have a general and accurate understanding about the effects of marijuana. Both users and nonusers had some knowledge about the effects; however, nonusers’ knowledge was superficial and incomplete. Traub asserted that the difference was explained by more than personal experience with the drug. He suggested that the media and education presented incomplete or inaccurate information about marijuana use with the potential for a framing effect.

Traub and other researchers have interpreted framing as presenting information in a supportive or unsupportive way. Another aspect of framing is the balance of goals and risks. Ferguson and Gallagher (2007) conducted a study that evaluated goal- and risk-based frames and their influence on perception. The researchers presented information about the benefits and risks of a flu vaccine to evaluate how effective participants anticipated the vaccine would be. The perceived goals had more influence than the perceived risks when the
response. Participants read information about publicized political topic and evaluated participant perceptions. I framed information about a highly sensitive, highly publicized topic (physician-assisted suicide) because of the moral and highly publicized nature of the issue. As predicted, the information came from trusted sources (doctors and research specialists).

Joslyn and Haider-Markel (2002) further examined how framing influences personal opinion about a complex topic (social security) and a sensitive, highly publicized topic (physician-assisted suicide). They hypothesized that, because social security is a complex issue, participants would rely on professional opinions (the framed information) to form their opinion, but participants would have a pre-existing opinion on the topic of physician-assisted suicide because of the moral and highly publicized nature of the issue. As predicted, the frames were more likely to influence participants’ responses to social security than responses to physician-assisted suicide, consistent with previous research on issue-based framing. Similarly, participants may have a predetermined opinion of recreational marijuana use and may rely on an authority to form an opinion about medical marijuana use.

Previous research clearly suggests that framing information may influence people’s perceptions of drug use. More specifically, the bias, risks, and sources of information may also influence perceptions. I framed information about a highly publicized political topic and evaluated participant responses. Participants read information about both recreational and medicinal marijuana use. The information was framed in either a positive (supportive) or negative (unsupportive) way. I predicted that students who read the positive frame would have more positive attitudes toward marijuana use than students presented with a negative frame. Students who used marijuana would have a more positive attitude than nonusers in all conditions because their actions imply acceptance of the behavior. I also expected students to have more positive attitudes toward medicinal marijuana than recreational use due to the authority and technical aspects of medicine. Finally, I hypothesized that attitudes toward the use of a typical student would be more influenced by the frames than attitudes about personal use because of a preconception about personal drug use in the U.S.

Method

Participants

There were 104 volunteer participants ranging in age from 18 to 28. The average age was 19.3 (SD = 1.7). I recruited participants from General Psychology courses at the University of Wisconsin-Platteville, which has a 95% Caucasian student body. Participants earned credit in these classes for their participation; an alternate assignment was available.

The between-subject factors included personal use of marijuana (never used vs. used once or more), whether the participants read information about medical or recreational marijuana use, and whether the information was framed positively or negatively. I randomly assigned participants to one of four conditions with 27 in the positive medical group, 27 in the negative medical group, 23 in the positive recreational group, and 23 in the negative recreational group. The within-subject factors involved questions about the marijuana use of a target. The factors included who was using marijuana (self, friend, or a typical student) and the target’s reason for using (medical or recreational).

Materials

I constructed four framed informational pages including positively or negatively framed facts about either recreational or medical marijuana use. The four informational pages were positive recreational marijuana use, negative recreational use, positive medical use, and negative medical use. One statement from the positive medical page was, “THC assists some AIDS patients with the loss of appetite that they commonly suffer.” The coun-

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The Effects of Framing on Attitudes

I designed a questionnaire to determine attitudes about marijuana use and to collect demographic information by incorporating ideas from Joslyn and Haider-Markel (2002) and Wolfson (2000). Questions included attitudes toward use of recreational or medical marijuana personally, use by immediate peers, and use by a typical college student. Participants completed scenarios such as, “If my doctor prescribed marijuana to me, my using it as prescribed is...” Participants rated the behavior on a scale from 1 (unacceptable) to 5 (acceptable). Participants also reported the frequency of personal use of marijuana, use by a friend, use by a typical college student, and provided their age and sex.

Procedure
Participants completed a packet including the consent form, one of the four informational sheets, the questionnaire, and an answer sheet. Participants read the consent form while the researcher read it aloud. Completing and turning in the packet, participants read the debriefing while the researcher read it aloud. Time was allowed for any questions and contact information was included on the debriefing sheet.

Results
I conducted an analysis of variance with three between-subject variables, including how frequently participants used marijuana (never vs. once or more), information in frame (medical or recreational), and valence of frame (positive or negative) and two within-subject variables, including which target was using marijuana (self, friend, or a typical college student) and the target’s reason for using (recreationally or medically). The dependent variable was participant rating of acceptability.

The three-way interaction of the target’s reason for use, the participant’s own marijuana use, and whether the information given to the participant was about medical or recreational information was significant, \( F(1, 92) = 3.99, p = .05, \eta^2 = .04 \) (see Figure 1). To interpret that interaction, I conducted post hoc tests of the two-way interactions. The two-way interaction of the target’s reason for using and the information received was not significant for people who had used marijuana once or more, \( F(1, 44) = 0.81, p = .37, \eta^2 = .02 \). The two-way interaction of the target’s reason for use and the information received was significant for participants who had never used marijuana, \( F(1, 48) = 4.86, p = .03, \eta^2 = .09 \). I then tested the simple main effects of the target’s reason for use. The simple main effect was significant for participants who had never used marijuana and who received medical information, \( F(1, 24) = 58.10, p < .001, \eta^2 = .71 \), and for participants who had never used marijuana and who received recreational information, \( F(1, 24) = 21.03, p < .001, \eta^2 = .47 \). The effect size was larger for nonusers who received medical information, suggesting that receiving medical information had a greater influence on acceptability than receiving recreational information.

The interaction of the target’s reason for use (medical or recreational) and the participant’s own use was significant, \( F(1, 92) = 19.28, p < .001, \eta^2 = .17 \) (see Figure 2). The simple main effect testing the target’s intention to use recreationally or medically was significant only for participants who had never used, \( F(1, 48) = 74.73, p < .001, \eta^2 = .60 \), with participants who had never used marijuana finding it more acceptable for the target to be using medically than recreationally. The simple main effect testing the target’s intention to use recreationally or medically was not significant for participants who had used marijuana once or more, \( F(1, 44) = .29, p = .60, \eta^2 = .01 \). This finding suggests that, for participants who had used marijuana in the past, the reason the target was using was not important. This pattern is consistent with my findings from the three-way interaction.

The main effect of the target’s reason for use was significant, \( F(1, 92) = 28.08, p < .001, \eta^2 = .23 \), with participants finding medical use (\( M = 3.25, SD = .07 \)) more acceptable than recreational use (\( M = 2.76, SD = .11 \)). However, this main effect is qualified by the previously reported three-way interaction and is largely the result of the percep-
The interaction of which target used marijuana (self, friend, or typical student) and the target’s reason for use was significant, $F(2, 184) = 17.74$, $p < .001$, $\eta^2 = .16$ (see Figure 3). The simple main effect testing the target’s intention to use recreationally or medically was significant regardless of which target was using marijuana, $F(1, 92) = 28.08$, $p < .001$, $\eta^2 = .23$, with medical use being more acceptable for use by self, use by a friend, and use by a typical student. Also, the effect size was large when questions concerned the participant’s own use, $F(1, 96) = 52.26$, $p < .001$, $\eta^2 = .35$; the effect size was medium when questions concerned use by a close friend, $F(1, 93) = 12.94$, $p = .001$, $\eta^2 = .12$; and effect size was small when questions concerned use by a typical student, $F(1, 95) = 7.99$, $p = .006$, $\eta^2 = .08$. This finding suggests that, although the effect was significant for all three targets, more of the variance was explained by the target’s reason for use concerning the participant’s own use than concerning the use by a typical student.

Which target used (self, friend, or typical student) and the participant’s own use (never vs. once or more) interacted, $F(2, 184) = 3.38$, $p = .04$, $\eta^2 = .04$ (see Figure 4). Tests of simple main effects clarified that, although which target consistently had an effect on perceived acceptability, the target had a much larger effect on the perceptions of participants who had never used, $F(2, 96) = 18.52$, $p < .001$, $\eta^2 = .28$, than on the perceptions of students who had used once or more, $F(2, 88) = 4.53$, $p = .01$, $\eta^2 = .09$. Further, the main effect of which target was using was significant, $F(2, 184) = 20.23$, $p < .001$, $\eta^2 = .18$, with participants finding it more acceptable when a typical student used ($M = 3.14$, $SD = .08$) or when a friend used ($M = 3.08$, $SD = .09$) than when they used themselves ($M = 2.79$, $SD = .09$).

I conducted chi-square analyses relating personal marijuana, alcohol, and tobacco use to the predicted use of a friend and to that of a typical student. Although some patterns were significant, I report these results with caution due to empty cells in the analyses. The relation of personal marijuana use and the predicted use of a close friend was significant, $\chi^2(4, N = 104) = 33.33$, $p < .001$. This pattern means that, compared to a student who used less frequently, students who used marijuana more frequently reported that a close friend also used marijuana more frequently. Personal use as it related to the predicted use of a typical student was not significant, $\chi^2(4, N = 100) = 9.18$, $p = .06$. Per-
The Effects of Framing on Attitudes | Allen

Personal tobacco use and the predicted use of a close friend were significantly related, \( \chi^2(4, N = 104) = 26.98, p < .001 \). Students who reported never using tobacco products reported more frequently that a close friend of theirs had also never used tobacco. Similarly, students who used tobacco once or more reported that close friends also used once or more. Personal tobacco use was not significantly related to estimates of a typical student’s use, \( \chi^2(4, N = 101) = 3.00, p = .56 \). Personal alcohol use and the predicted use of a close friend were significantly related, \( \chi^2(3, N = 103) = 25.52, p < .001 \). Students who reported drinking more often were more likely to report that a close friend also drinks more often. Personal alcohol use was also significantly related to estimates of a typical student’s alcohol use, \( \chi^2(2, N = 100) = 6.65, p = .04 \) (see Table 1).

Discussion

The purpose of my study was to examine the potential influence of framed information on student attitudes toward marijuana use. The current college population has been exposed to government legislation and programs dealing with the drug culture as well as to activist groups who oppose the past and current drug laws. All of this information has likely had an impact on the knowledge and opinions of students, creating a collective social norm (Lewis & Clemens, 2008). My study attempted to examine the significance of this impact through framing information and comparing attitudes about marijuana use.

I hypothesized that students presented with a positive (supportive) frame would have more positive attitudes toward marijuana use than students presented with a negative (unsupportive) frame. My hypothesis was consistent with those of Jasper et al. (2001), Joslyn and Haider-Markel (2002), and Ferguson and Gallagher (2007). Although previous research found results consistent with their hypotheses, the results of my study did not support the effects of a positive or negative frame on student attitudes. The unsupportive results could be attributed to the very problem I attempted to address: the saturation of information regarding marijuana use. As Lewis and Clemens (2008) suggested, the data may be skewed due to participants’ exposure to biased information prior to the study. Exaggerated information that was more clearly defined as supportive or unsupportive may have yielded significant results, but I avoided exaggeration to limit deception.

I also hypothesized that students who used marijuana would have a more positive attitude about use than nonusers, simply because their actions imply an acceptance of the behavior. This hypothesis was supported; students who reported using marijuana found it more acceptable for themselves, close friends, and also typical students to use. Although this finding is not particularly groundbreaking, it is important to note that the attitudes of current users were significantly established such that they were not affected by the negatively framed information.

I predicted that participants would have a more positive attitude toward medicinal marijuana use.
than recreational use. I based this hypothesis on findings and discussion by Jasper et al. (2001) in which pregnant women had a more positive perception of taking a prescribed drug when the risks were minimized, possibly because they trusted a doctor or an authority figure. In the current study, participants rated the acceptability of marijuana use when prescribed by a doctor and the acceptability of recreational use. Although the main effect of whether the target was using for medical or recreational use was significant, tests for the simple main effects showed that only students who had never used marijuana found medical use more acceptable than recreational use. This result was especially true when nonusers had received medical information. My finding may be consistent with the hypothesis in Jasper et al. (2001) about trusting an authority figure even though there was no significant interaction with the frames participants were given. A learned trust of doctors and the medical field could still have an influence on participants. Students who reported using marijuana once or more did not show a significant difference in acceptability between medical and recreational use. This result could be attributed to the fact that neither medical use of marijuana nor recreational use is legal in the state of Wisconsin so students who reported using marijuana are using illegally whether for recreational or self-prescribed medical purposes. As mentioned previously, students who have used marijuana once or more found marijuana use to be more acceptable than nonusers in both medical and recreational circumstances.

Finally, I hypothesized that attitudes about a typical student using would be more influenced by the framed information than attitudes toward personal use. This prediction was based on the concepts examined by Joslyn and Haider-Markel (2002) in which attitudes about a more sensitive topic (in this case personal use) would already be formed, whereas attitudes about a less sensitive topic (whether a typical student is using marijuana) would be less defined and more easily influenced. This hypothesis was not supported in the present study. Similar to the first hypothesis, stating the frames more extremely may have yielded significant results.

There were several interactions that were not predicted prior to the study. One was the interaction of which target was using marijuana and whether it was for medical or recreational purposes. The target’s intention to use recreationally or medically was significant regardless of who was using. This result supports the previous statement that medical use was more acceptable than recreational use. The difference in effect sizes for personal use, use by a friend, and use for a typical college student may mean that the acceptability of own use was more influenced by the reason the target was using than was the acceptability of other targets’ use.

Participants found it more acceptable when a typical student uses marijuana than when a friend uses or when they themselves use. This result is also in support of the hypothesis of Joslyn and Haider-Markel (2002) about how attitudes toward personal use are predetermined and use by a typical student may be considered less important or less unacceptable.

Although the findings of Wolfson (2000) supported the hypothesis that there exists a false consensus among drug users, in my study that hypothesis was supported only regarding alcohol use. Personal alcohol usage was a significant predictor of estimates of the use by a close friend and by that of a typical student. This result means that students who use alcohol tended to report higher usage among their friends than the reports of nonusers of alcohol. The same is true of the predictions of a typical student. I also found that, regardless of personal use, no participant estimated that a typi-

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<th>TABLE 1</th>
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<td><strong>Frequency Counts of Personal Alcohol Use as They Relate to Use by a Typical Student</strong></td>
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<tr>
<td><strong>Estimated Alcohol Use of a Typical Student</strong></td>
</tr>
<tr>
<td>Personal Alcohol Usage</td>
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<tr>
<td>Never Used</td>
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<tr>
<td>Used Once or More</td>
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Note: No participant reported that a typical student has never had alcohol, nor did any participant report that a typical student had tried alcohol only once, $\chi^2(2, N = 100) = 6.65, p = .04.$

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The Effects of Framing on Attitudes

Creating some bias. Secondly, there was no control group to compare to the four experimental groups (each given a different informational page). It could be that receiving any information at all, regardless of the nature of it, may have impacted participant attitudes toward marijuana use. Thirdly, participant attitudes could have been predetermined due to their varying levels of exposure to the programs and laws discussed earlier. A question about the participants’ level of drug education could have helped eliminate this variable. One area of statistical bias could be in the chi-square analyses of predicted use in which several cells were empty. Therefore, I report those results with caution.

One issue that was common to my study and the previous research concerns how to classify a person’s usage level. I classified someone who had never used a substance as a nonuser. If participants had used a substance once or more, I assigned them to the once or more category. I had hoped to add a third category for the unique group of people who had tried marijuana once but did not become regular users. In a future study, it could be beneficial to have enough participants to compare these three different groups.

Despite several limitations, my findings contribute to the understanding of the current drug use on college campuses. It is clear that current college students have grown up with mixed messages. Through government legislation opposing drug use or activists opposing drug laws, students have established their opinions about how acceptable the use of alcohol, tobacco, and marijuana are. Further research examining what shapes these attitudes (possibly including framing) could aid in establishing future drug legislation, diminishing campus use, or simply providing accurate information about drug use that would be received and accepted by college students.

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The Effects of Framing on Attitudes

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Author Note. This research was conducted at the University of Wisconsin–Platteville under the supervision of Dr. Joan E. Riedle, research advisor.
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Anna Marie Allen is a recent graduate of the University of Wisconsin–Platteville where she majored in psychology, criminal justice, and Spanish and played for the women’s varsity soccer team. Originally from Salina, Kansas, Ms. Allen also spent a semester in Seville, Spain, through the University of Wisconsin–Platteville’s study abroad program. Her interests in U.S. drug laws and punishments were derived from her studies in criminal justice. Guided by her psychology adviser, Dr. Joan E. Riedle, Ms. Allen completed an independent research project concerning students’ perceptions of marijuana use and how those perceptions may be altered by the information students receive. She hopes to continue her study of drug legislation and explore other areas of the law in her current graduate program at the University of Denver–Sturm College of Law.
Hair Color Stereotypes and Their Associated Perceptions in Relationships and the Workplace

Michelle Beddow
University of Michigan–Dearborn

ABSTRACT. Previous research has shown that people associate positive and negative personality traits with certain hair colors. Participants view blondes as attractive but dumb, brunettes as studious and competent, and redheads as smart but temperamental. The present study examined the effects of stereotypes with respect to hair color, setting, and gender. Participants rated a male or female model on several personal characteristics (e.g., attractiveness, intelligence) based on a description and photo of the model. The model was depicted in both a work setting and a dating setting and was shown in the photo with 1 of 3 hair colors: blonde, brown, or red. Results indicated that hair color stereotypes are not only linked to various personal traits, but are affected by the setting as well. When placed in a setting with certain stereotypes, the stereotypes associated with that hair color are augmented.

It is the nature of human beings to categorize everyday life. In order to process all the information encountered during the day, humans are programmed to develop categories for the things and people around them (Allport, 1954). The point of categorization is to make individuals’ lives easier so they can quickly understand the situations they encounter. By recognizing the similarities of the current event to past events and, in turn, placing the current event into a previously constructed category, people essentially never encounter an event not met previously (Allport, 1954). Not only does categorization make it easier for people timewise, but it is also key to their survival. Evolutionarily speaking, it was crucial that humans comprehended their surroundings instantaneously to avoid peril. Although instantaneous categorization is not typically needed today, people still categorize the beings around them without conscious awareness.

When it comes to people, humans categorize them based on a number of factors. The categories developed need to be specific to group members. However, these categories also need to have a degree of flexibility in order to accommodate any individual who is clearly a member of the category, yet does not fit the classifications (Tajfel, 1969). Therefore, in a sense, anyone could fit into a category if he/she has the relevant factors.

A common dichotomy people use is that of gender. Because there are only two categories, it is simple to place an unknown target into one of the categories with only a small bit of knowledge about the target. Through the use of gender stereotypes, people categorize intangible concepts such as personality traits into this gender dichotomy. For instance, presumed masculine traits are those associated with task efficiency (assertive, capable leader, rationality), whereas presumed feminine traits are associated with communal activities (compassionate, loyal, warmth; Bem, 1974; Broverman, Vogel, Broverman, Clarkson, & Rosenkrantz, 1972).

Typically, research on prejudice toward outgroups focuses largely on race, gender, or age. However, research also shows that stereotypes are plentiful in society in many other forms. Despite the time and money people spend on their hair,
Hair color is one area that has received minimal research; yet, the findings suggest that such stereotypes and their associated perceptions are widespread.

Hair Color Preference
The study of hair color preference dates to the early 1970s, when Lawson (1971) found a clear affinity for certain hair colors. Both sexes favored brown hair followed by blonde, red, and artificial blonde, respectively. Furthermore, Lawson found research participants had the highest favorability for their own hair color.

Clayson and Klassen (1989) confirmed Lawson’s findings. When they asked participants to rate a model on attractiveness, based only on the model’s resume and reported gender, hair color, and weight (obese/nonobese), participants considered blondes as most attractive, followed by models with brown hair, and models with black hair. Redheads were found least attractive.

Hair color preference does appear to be affected by gender. Feinman and Gill (1978) conducted a study of 482 female participants and 549 male participants to examine hair color preferences of the opposite sex. Male participants tended to prefer blonde female targets, whereas female participants tended to prefer dark-haired male targets. However, 83% of both genders disliked redheaded individuals. This animosity toward redheads was similar to that found in Lawson’s (1971) study.

Most of the studies cited previously suggest that the hair color of the population majority is preferred; that is, participants prefer blondes and brunettes. However, Thelen (1983) found a different order of preference. Thelen found that when rating potential mates, male participants preferred women with rarer hair colors. However, this trend did not occur among female participants. If this finding holds, with redheads being in population terms “rare,” male participants, and possibly female participants, might consider redheads more preferable.

Personality Trait Perceptions
Several studies have shown that hair colors carry certain perceptions, generally linked to the overall stereotypes. Generally, the stereotypes associated with blondes are that although blondes are found to be attractive, they are also dumb, as can be seen with the prevalence of dumb blonde jokes. In accordance with the saying that “blondes have more fun,” people tend to perceive blondes as more popular (Weir & Fine-Davis, 1989) and more feminine and beautiful than brunettes and redheads (Clayson & Maughan, 1986). Blondes also tend to be rated as richer (Synnott, 1987).

Rich and Cash (1993) and Synnott (1987) found that although blondes represent a low percentage of the population, images of blondes have been featured in magazines at a much higher rate than images of models with other hair colors. The magazine Playboy presented blondes at an even higher rate (41%) than most general magazines (Rich & Cash, 1993). Yet, although blondes are overrepresented in magazines, they are underrepresented in certain sections of the workforce. Employing data of the top 500 CEOs of the London Financial Times Stock Exchange (FTSE), Takeda, Helms, and Romanova (2006) found that blondes represented only 5% of CEOs of the London FTSE, a finding consistent with the belief that blondes are considered incompetent. Although in Takeda et al.’s study, only two of the 500 CEOs were women, it is possible that the dumb blonde stereotype has influenced how blondes are perceived in other aspects of their lives, affecting how they are perceived in general.

Researchers used an interview approach to discover the cause of hostility toward redheads. Participants generally believed that redheads were known for their flaring tempers (Heckert & Best, 1997; Weir & Fine-Davis, 1989). Furthermore, other stereotypes of redheads included clown, weird, and wimpy men. Interestingly, some people perceive redheads to be exceptionally smart (Heckert & Best, 1997) despite the other perceptions. Moreover, participants in one study perceived redheads as the “active, executive type” (Horn, as cited in Synnott, 1987, p. 386). Heckert and Best (1997) noted that, due to these perceptions, redheads suffered from low self-esteem and the feeling that they were “the undisputed center of attention” (p. 380). However, the sample size was small, with only 20 redheaded participants interviewed.

Although there do seem to be well-known stereotypes about blondes and redheads, there do not seem to be overall positive or negative stereotypes about people with brown hair. Generally, people perceive individuals with brown hair as normal, possibly because these individuals make up the majority of the population. Interestingly, people perceive brunette women as more competent and intelligent than blondes and redheads (Kyle & Mahler, 1996; Weir & Fine-Davis, 1989). Kyle and
Hair Color Stereotypes | Beddow

Hypotheses

Hypothesis #1. I hypothesized that certain personality traits would be perceptually linked to a certain hair color: that participants would find blondes more attractive, feminine, and immature; brunettes more intelligent, successful, mature, and with a stronger work ethic; and redheads more aggressive and emotional.

Hypothesis #2. As one might view someone differently in a nightclub versus a library, I hypothesized that environment would affect ratings of model personality traits, especially when combined with hair color. Although previous research examined both gender of the model as well as the participant, the setting of the models was rarely mentioned, if mentioned at all. Therefore, I presented participants with two situations: a work-related setting and a dating-related setting. I hypothesized that the male and female models with brown hair would be viewed more favorably in the work setting than in the dating setting.

Hypothesis #3. I hypothesized that the typical stereotypes associated with hair color (i.e., dumb-flirty blonde, studious brunette, temperamental redhead) would become stronger when combined with a situation common to these stereotypes. I expected that these stereotypes would be associated with the model’s gender. For instance, I hypothesized that, not only would participants perceive the blonde female model as more attractive than the other models, but also that participants would perceive the blonde female model as even more attractive when viewed in the dating setting, due to the nature of the setting as well as the stereotypes associated with blonde females.

Method

Participants

Participants consisted of 180 undergraduate students (90 male students and 90 female students) from a Midwestern university. Participants ranged in age from 18 to 54 (M = 20.29, SD = 4.77). Ethnicity was comprised of 102 (56.7%) Caucasians, 29 (16.1%) Arab Americans, 19 (10.6%) African Americans, 17 (9.4%) Asians, 8 (4.4%) Hispanics, and 5 (2.8%) who classified themselves as “other.” Participants consisted of 30 (16.7%) blondes, 130 (72.2%) brunettes, 11 (6.1%) participants with black hair, 3 (1.7%) with red hair, and 1 (.6%) with gray hair, with 5 participants opting not to answer. Approximately 24% of participants had dyed their hair at the time of the study, either the same or a different color than their natural hair color. Participants were all enrolled in an introductory level psychology course and completed the study as a part of the university’s subject pool research requirement.

Materials

Participants received a questionnaire packet. Each packet directed participants to pretend that they had visited a social networking page to find out some information about a male or female target model. On the social networking site, the participant found a short profile about the model as well as the model’s photo. The profile was gender neutral and described several favorite activities of the model. This profile further explained that the model was single and recently unemployed in order to match the given directions. The same profile accompanied both the male and female models, with only the model’s name changed accordingly.

Participants viewed the profile twice: once in a work-related setting in which the participant was to review job candidates (as a potential coworker), and once in a dating setting in which the participant was to review prospective dates for a friend. The order of settings was counterbalanced to control for the possibility of order effects.

After each setting presented, participants viewed a list of personality characteristics (attractiveness, intelligence, work ethic, maturity, emotional level, success level, aggressiveness, and femininity/masculinity) and rated the model on a 1 to 7 bipolar adjective scale, with higher ratings indicating a greater prevalence of the trait.

Participants viewed a photo of one of the two models while they completed the ratings. The photo showed the model against a beige background with neutral facial expressions. Both photos depicted the model with the same pose and differed only in terms of gender and hair color. Hair color of the model was altered using photo alteration software in order to create the three hair color conditions: blonde, brown, and red. In several cases, the skin color of the model was also slightly pigmented in order to make the change in hair color appear natural. In order to remain consistent with previous studies and to keep the hair colors natural, both models were Caucasian. Each participant rated only one of the two models with the model’s gender.
corresponding accordingly to the model’s name. Participants in a pilot study previously rated both models as having average attractiveness and intelligence, among several other characteristics. During the pilot study, the photo was shown in black and white in order to prevent the possibility of the model’s hair color affecting results. However, during the actual study, the model was shown in color.

**Design**

The study was conducted using a 2 (scenario: work vs. dating) x 3 (hair color: blonde, brunette, or redhead) x 2 (gender of model) x 2 (gender of participant) experimental design using a mixed-measures ANOVA. The within-subjects factor was the scenario, whereas the other factors were between-subjects. The design originally included scenario order as a factor; however, this factor was eliminated from analysis due to its lack of explanatory power.

**Procedure**

Participants rated the individual shown on the projector screen according to the directions in the scenario. Afterward, participants completed a brief demographics questionnaire. Participants were thanked for their input, given participation credit, and debriefed.

**Results**

**Work Ethic**

Analysis revealed significant main effects with respect to the model’s gender on perceived work ethic, $F(1, 167) = 13.65, p < .001, \eta^2 = .08$. Participants attributed a lower work ethic to the male model ($M = 4.48, SD = 1.31$) than the female model ($M = 3.88, SD = 1.32$). Analysis also revealed a significant main effect with respect to the participant’s gender, $F(1, 167) = 5.79, p < .05$. Male participants perceived the models as having a lower work ethic ($M = 3.98, SD = 1.31$) than female participants ($M = 4.37, SD = 1.36$). Analysis also revealed an interaction between the model scenario and model hair color, $F(2, 167) = 3.84, p < .05, \eta^2 = .04$. Paired samples $t$ tests with a Bonferroni correction compared means between variables. As shown in Table 1, participants perceived the blonde model with the same level of work ethic in both the work setting and the dating setting, $t(59) = .00, ns$. Meanwhile, participants perceived the brown-haired model with a higher work ethic in the dating setting than in the work setting, $t(58) = 2.85, p < .01$. Alternatively, the setting did not affect how participants perceived the red-haired model, $t(58) = .89, ns$.

**Maturity**

Analysis revealed a significant main effect for model gender, $F(1, 168) = 5.11, p < .05, \eta^2 = .03$. Participants attributed higher maturity to the female model ($M = 4.56, SD = 1.34$) than the male model ($M = 4.16, SD = 1.33$). Analysis also revealed a significant main effect for participant gender, $F(1, 168) = 5.70, p < .05, \eta^2 = .03$. Male participants perceived the models as more mature ($M = 4.55, SD = 1.36$) than female participants ($M = 4.15, SD = 1.39$). Analysis also revealed a marginal interaction between scenario and model hair color, $F(2, 168) = 2.82, p < .10, \eta^2 = .03$. As shown in Table 1, participants perceived both the blonde and brown-haired models as somewhat more mature in the dating setting than in the work setting, whereas participants perceived the red-haired model as somewhat more mature in the work setting than in the dating setting. As this interaction was marginal, Bonferroni corrected $t$ tests were not conducted.

**Emotional**

Analyses revealed a main effect of model gender, $F(1, 168) = 15.37, p < .001, \eta^2 = .08$. Participants perceived the female model as more emotional ($M = 4.41, SD = 1.12$) than the male model ($M = 3.87, SD = 1.12$). Analyses revealed that there was not a significant main effect for model hair color, $F(1, 168) = 1.09, p = ns$.

Analysis also revealed an interaction between

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<th>TABLE 1</th>
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<tr>
<td><strong>Mean and Standard Deviation Ratings of Characteristics With Scenario and Hair Color</strong></td>
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<td>Work Ethic</td>
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<td>Success</td>
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<td>Aggressiveness</td>
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Note. Higher ratings indicate a greater prevalence of the trait.
model gender and model hair color, \(F(2, 168) = 3.80, p < .05, \eta^2 = .04\). As shown in Table 2, participants perceived the brown-haired male model as less emotional than the blonde female model; a Tukey HSD post hoc test indicated that the difference between these means was significantly different \((p < .001)\). Furthermore, participants perceived the brown-haired male model as less emotional than the brunette female model; the post-hoc test indicated that the difference between means was significantly different \((p < .001)\).

An interaction was also found between scenario and model hair color, \(F(2, 168) = 3.83, p < .05, \eta^2 = .04\). As shown in Table 1, in the work setting, participants perceived the brown-haired model as less emotional than the blonde-haired and red-haired models. On the other hand, in the dating setting, participants perceived the brown-haired model as more emotional than the blonde-haired and red-haired models. A paired samples \(t\) test indicated, however, the difference in means with respect to setting for the brown-haired model was not significant, \(t(59) = 2.09, ns\).

Success
Analysis revealed a main effect with model gender, \(F(1, 168) = 9.39, p < .01, \eta^2 = .05\). Participants perceived the male model as less successful \((M = 3.66, SD = 1.19)\) than the female model \((M = 4.11, SD = 1.24)\). Another main effect was found with respect to participant gender, \(F(1, 168) = 4.38, p < .05, \eta^2 = .03\). Female participants perceived the models as less successful \((M = 3.73, SD = 1.20)\) than male participants \((M = 4.04, SD = 1.25)\).

A marginally significant interaction was found between scenario and model hair color, \(F(2, 168) = 2.37, p < .10, \eta^2 = .03\). As shown in Table 1, participants perceived the red-haired model as somewhat less successful in the dating setting, compared to the blonde and brown-haired models. Meanwhile, participants perceived the red-haired model as somewhat less successful in the work setting, compared to the brown-haired and blonde models. Further analysis was not conducted however, because this interaction was marginally significant.

Aggressiveness
Analysis revealed a main effect with model hair color, \(F(2, 168) = 5.57, p < .01, \eta^2 = .06\). Participants attributed less aggression to the brown-haired model \((M = 3.07, SD = 1.10)\) than the blonde \((M = 3.59, SD = 1.11)\) and red hair \((M = 3.69, SD = 1.50)\) models. Bonferroni post hoc tests indicated that the means for the blonde and brown-haired models differed significantly \((p < .05)\) and that the means for the brown-haired and red-haired models also differed significantly \((p < .01)\).

Analysis also revealed a marginal interaction between scenario and model hair color, \(F(2, 168) = 2.64, p < .10, \eta^2 = .03\). As shown in Table 1, participants perceived the brown-haired model as somewhat less aggressive in both the work and dating settings. Participants perceived the dating setting redhaired as somewhat more aggressive than the other models. Further analysis was not conducted as this interaction was only marginal.

Feminine-Masculine
Analysis revealed a main effect with model gender, \(F(1, 168) = 121.63, p < .001, \eta^2 = .42\). Participants perceived the male model as more masculine \((M = 5.16, SD = 1.24)\) than the female model \((M = 3.28, SD = 1.27)\).

Analysis also revealed an interaction between model hair color and model gender, \(F(2, 168) = 4.81, p < .01, \eta^2 = .05\). As shown in Table 2, participants perceived the brunette female model as the most feminine followed by the blonde female model and red-haired female model. A Tukey post hoc test indicated that the difference in the means between the brunette female model and red-haired female model was marginally significant \((p < .10)\). The post hoc test also indicated that the difference in means between the male models and female models of all three hair colors were significantly different \((all ps < .001)\). However, this difference in means was most likely due to the nature of the gender characteristic; that is, the female models were viewed as more feminine than the male models and vice versa.

Other Traits
Analysis indicated that participants found the models to have an average level of attractiveness \((M = 3.92, SD = 1.15)\). However, no significant differences among hair colors were found, \(F(2, 166) = 1.25, p = ns\). Participants also perceived the models to have an average level of intelligence \((M = 4.49, SD = 1.32)\). However, no significant results for hair color with respect to intelligence were found, \(F(2, 166) = .29, p = ns\).

Discussion
The findings supported Hypothesis #1 that differential perceptions associated with hair color do exist. Furthermore, these perceptions are amplified
when depicted in a setting with similar stereotypes as indicated in Hypothesis #2, such as the brown-haired model being perceived with a higher work ethic in the work-related setting than in the dating setting. However, the application of one or both hypotheses depends on the personality characteristic measured, as these trends were evident only in certain traits (work-ethic, maturity, etc.) and not others (i.e., attractiveness, intelligence). Furthermore, the findings supported Hypothesis #3 that when hair color stereotypes are in a situation common to these stereotypes, the associated stereotypes will be seen as stronger due to situational factors.

Blonde Hair
Participants’ attributions of maturity to the model fit Hypothesis #1. Blondes are historically stereotyped as attractive flirts, especially blonde female adults as shown by their prevalence in magazines like Playboy (Rich & Cash, 1993). However, blonde male adults are also seen as attractive (Clayson & Klassen, 1989), typically depicted as athletes/surfers in the popular media, and seem to fit a masculine version of the dumb-blonde stereotype. Because of this stereotype, the finding that participants in this study considered blondes as more mature in a dating setting fits if one looks at the concept of maturity as equivalent to more experience. Because people perceive blondes as more flirtatious than people with other hair colors, participants may have perceived blondes as having more dating experience, thereby leading to perceptions of greater maturity in the dating setting, where the blonde models possibly feel more comfortable.

Similarly, participants’ attributions of the model’s success supported Hypothesis #2. As noted, participants typically considered blondes as less intelligent and competent than people with other hair colors, and therefore blondes might have been seen as not successful in a situation that favors those traits. Therefore, it is fitting that participants perceived the blonde model as the least successful in the work setting, whereas participants perceived models with brown and red hair as the most successful in the work setting. Because blondes are underrepresented in the power positions of the workforce (Takeda et al., 2006), it is possible that this underrepresentation is due in part to this stereotype.

Surprisingly, contrary to previous research (Clayson & Klassen, 1989; Feinman & Gill, 1978; Lawson, 1971), there was no preference (measured by attractiveness) for one hair color over the others. The findings also did not support Hypothesis #3, that participants would perceive blondes as more attractive in the dating setting. Because participants rated both models as average in terms of attractiveness, it is possible that they were too “plain” to be affected by any attractiveness tendency brought out by a certain hair color. Or, perhaps, with the vast majority of research on this topic being considerably dated and one’s hair color capable of complete change within a few hours, people no longer associate attractiveness with one specific hair color. Although everyone might have a favorite hair color, or one considered more attractive than others, it is possible that a universal favorite no longer exists.

Brown Hair
Participants’ ratings of masculinity or femininity of the model were clearly consistent with Hypothesis #1. Consistent with previous research (Feinman & Gill, 1978), participants rated brown-haired men as the most masculine. The typical tall, dark, and handsome “ideal” fits as this type would be seen as the most masculine, with the dark part referring to brown hair instead of the lighter colors of blonde or red. It is also interesting that participant ratings for the blonde and red-haired men were similar, possibly indicating that red-haired men are not perceived as harshly as they once were.

However, instead of the blonde female model being perceived as the most feminine (Clayson & Maughan, 1986), in this case, participants chose the brunette model. It is possible that as trends change over time, blondes are losing their edge in terms of perceived femininity to brunettes. Or perhaps, this change is due to the media showing feminine brunettes like Julia Roberts, instead of the once quintessential blonde image of Marilyn Monroe.

The interaction between the brown-haired

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<th>TABLE 2</th>
<th>Mean and Standard Deviation Ratings of Characteristics With Model Gender and Hair Color</th>
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<tr>
<td></td>
<td>Male Model</td>
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<tr>
<td>Emotional</td>
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<tr>
<td>Feminine/Masculine</td>
<td>5.00 (1.24)</td>
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Note. Higher ratings indicate a greater prevalence of the trait. Higher ratings for the Feminine/Masculine characteristic indicate greater masculine characteristics, whereas lower ratings indicate greater feminine characteristics.
models and situation in terms of emotional stability is interesting and predicted by Hypothesis #2. Because participants typically perceive brown-haired individuals as competent and industrious, an emotional display in the workplace would be contrary to these detached, rational depictions. However, when displayed in a setting that does not typically include the previously mentioned stereotypes (the dating setting), participants viewed the brown-haired model as more attached and personal, consistent with traits viewed positively in this setting.

Surprising, there was not a significant interaction for perceptions of intelligence and hair color, nor was there an interaction between perceptions of intelligence and situation. Although I hypothesized that participants would perceive the brown-hair model as more intelligent than the other models as well as perceive them favorably in the work setting, in accordance with stereotypes, this hypothesis was not confirmed. Failure to find this difference in intelligence is further perplexing when considering the fact that participants attributed a stronger work ethic to brunettes when depicted in a work setting.

Given previous research, the finding regarding work ethic fit Hypothesis #2 as people with brown hair are seen as more competent and usually more intelligent (Kyle & Mahler, 1996). One could argue that intelligence and work ethic are related (although not the same trait), and therefore intelligence and work ethic as variables would show similar trends. However, as this hypothesis was not supported in this study, it is more likely that the participants did not see intelligence and work ethic as similar traits and thus treated them independently.

It should be noted that when rating the model’s success, participants perceived the brown haired model as the most successful in the workplace, consistent with the common stereotypes of intelligence and competence, thereby resulting in success. This finding also fits with actual success as the majority of real-life CEOs were found to have brown hair (Takeda et al., 2006).

Red Hair
As predicted, participants’ attributions of aggressiveness and emotional state of the model fit Hypothesis #3. The “temperamental” red-hair stereotype demonstrated itself in participants’ perceptions of aggression, as it did in past studies (Heckert & Best, 1997; Weir & Fine-Davis, 1989), juxtaposing itself with the calm, competent stereotypical nature of the models with brown hair. However, it is interesting that participants rated the blonde model similar to the red-hair model. It is possible that participants perceived the brown-hair model as more passive than the other two hair colors. It is also possible that participants perceived either the blonde model as more aggressive than previous research would suggest or that participants perceived the red-haired model as less aggressive overall. Whereas any of the previous explanations would fit, given that when rated in terms of masculinity/femininity, participants perceived the red-haired man more favorably than in previous studies (Clayson & Klassen, 1989), it is possible that the hostility toward redheads is not as pervasive as it once was, due perhaps to the ease of hair dye.

Similarly, the fact that participants perceived redheads as less successful in the dating setting is also consistent with Hypothesis #3. Because most of the stereotypes associated with red hair are negative (e.g., temperamental, weird; Heckert & Best, 1997) and given the fact that previous studies found that red hair was least preferred among participants (Feinman & Gill, 1978; Lawson, 1971), it would make sense that redheads were seen as the least successful in the dating situation. Typically, redheads are not considered attractive or preferred, and they may be less associated with dating and viewed as not successful.

Conclusions
This study had several limitations. It is possible that the repeated measure confused participants regarding what aspect of the model they were evaluating during the second round of ratings, and therefore participants did not realize the situation had changed. Also, because the skin color of the models had to be slightly altered, the photos, although similar, were essentially not the same.

Furthermore, instead of using a standard post hoc test for the repeated measures design, paired samples t tests with a Bonferroni correction were used. Because the level of correction used tended to be on the conservative side in order to decrease the chance of Type 1 error, it is possible that Type 2 error increased. Although only a few t tests were used for each trait, it is possible that this method affected the results of the study.

Further research could include different hair colors such as black or platinum blonde, as well as unnatural hair colors such as blue or purple. Furthermore, because situational factors affected
the attributed perceptions, changing or adding different settings, such as a party or sporting event, could yield significant results. If this study is a reflection of the views of society, then hair color perceptions are prevalent. However, their application and the degree of stereotype application are dependent on situational influences as well as the specific personality trait.

References


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Michelle Beddow

Michelle Beddow is a 2009 graduate of the University of Michigan–Dearborn and a native of Livonia, Michigan. She is currently working on her master’s degree at the University of Michigan–Dearborn studying health psychology. After graduation, she plans to continue her education and earn a PhD in social psychology where she wants to focus her research on prejudice and stereotyping. The article published here was part of the findings from her undergraduate honors thesis. She has expanded this topic to include other hair colors and has presented the findings from that study, as well as this study, at several regional conferences.
Personal Prejudice: Examining Relations Among Trait Characteristics, Parental Experiences, and Implicit Bias
Carolyn Brayko, Shavon Harris, Sarah Henriksen, and Anna Marie Medina
Gonzaga University

ABSTRACT. This study focused on potential linkages between personality traits, past parental relationships, and implicit bias toward an outgroup. Introductory psychology students (N = 75, 56 women, 19 men) completed the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998), designed to identify preference for either Muslim or non-Muslim names, followed by the Adult Parental Acceptance-Rejection Questionnaire (short form; Rohner, 2004), and the State-Trait Personality Inventory (Speilberger, 1979). Findings showed perceived paternal warmth had a significant negative correlation with the IAT association effect, r(75) = -.27, p = .02. In other words, as reports of paternal warmth increased, positive association with Muslim names decreased. Results also indicated a moderate, yet nonsignificant, correlation between trait anger and the IAT association effect, r(75) = .21, p = .07. That is, as trait anger increased, reaction times for positive associations with Muslim names also increased. These findings supported the notion that intrapersonal factors play a role in implicit bias.

Despite many investigations exploring the various roots of prejudice toward outgroups (Hewstone, Rubin, & Willis, 2002; Mikulincer & Florian, 1998; Reynolds, 2000), work remains. Some researchers have studied emotion variables in relation to prejudice, yet the directionality of the association is still unclear (Ciarrochi & Forgas, 1999; Johnson & Fredrickson, 2005; Wilkowski, Robinson, Gordon, & Troop-Gordon, 2007). In one study using explicit measures, Ciarrochi and Forgas (1999) found that high-anxiety participants rated a potentially threatening outgroup (in this case, African Americans) more positively than did low-anxiety participants. The authors’ speculation for this finding was that the participants who were more trait-anxious also had lower self-confidence. Feeling more like an individual in an outgroup themselves, it is possible the anxious group sympathized with the outgroup, therefore rating African Americans more favorably. In contrast, Johnson and Fredrickson (2005) reported that positive emotions, like joy, reduced own-race bias and may be extrapolated to include reduced outgroup bias. Furthermore, it is possible that individuals prone to negative affect, like anxiety, may portray increased own-race bias and greater prejudice toward outgroups.

With respect to trait anger, the literature suggests that anger has a positive relation with prejudice. Wilkowski et al. (2007) observed that persons high in trait anger automatically interpreted ambiguous social situations as hostile. This finding suggested that people with high trait anger may regard unfamiliarity, such as members from salient outgroups, with hostility; inversely, persons with low trait anger may interpret outgroup individuals more holistically. Moreover, Tapias, Glaser, Keltner, Vasquez, and Wickens (2007) found that
predisposition toward anger significantly predicted prejudice against African Americans.

In addition to trait variables, it is possible that specific developmental experiences may be associated with bias in social information processing. Substantial literature has linked cold and rejecting parenting with increased rates of depression, anger, and anxiety (e.g., Hoglund & Nicholas, 1995; Teicher, Samson, Polcari, & McGreener, 2006), all attributes previously associated with social judgments. Specifically with parental acceptance-rejection theory, Rohner and Khaleque (2005) posited that parental behaviors affect the development of an individual’s sense of self-worth. Low self-esteem could possibly lead an individual to avoid foreign events or even people (Rohner & Khaleque). If parental rejection contributes to increased avoidance of unfamiliar situations and people, then parental rejection in a person’s childhood may be associated with increased bias against outgroups. We expected parental acceptance and rejection to be associated with trait anger, anxiety, and depression and for parental variables to be either directly or indirectly—through their contribution to trait variables—linked with bias against an outgroup.

Most of the literature related to prejudice has employed explicit (i.e., self-report) measures for assessing bias (e.g., Ciarrochi & Forgas, 1999; Tapias et al., 2007). Concerns related to social desirability and self-report biases led to the development of the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998). Greenwald and his colleagues designed the IAT to accurately represent existing racial bias by making it virtually impossible for participants to groom their responses to fit social mores. An implicit attitude is a subconscious judgment toward people or situations. Research shows that even when controlling for familiarity effects, the test reliably identifies implicit bias (Dasgupta, Greenwald, & Banaji, 2003). Measuring implicit bias, rather than explicit, could be more accurate because it is theoretically less contaminated by conscious manipulations.

The IAT provides a new window into the phenomenon of ingroup/outgroup differentiation. The IAT asks participants to sort stimuli from two different categories of “opposites”: groups (e.g., Muslim names and non-Muslim names) and characteristics (e.g., positive words and negative words). The test sequentially shows words from both categories at random, and the participant uses key presses to classify each stimulus into two compound categories (e.g., Muslim names/positive words and non-Muslim names/negative words). The compound categories thus create associations between them and produce a measure of implicit bias toward the groups presented.

Egloff and Schmukle (2002) questioned the empirical difference between taking explicit and implicit measures. They administered both an explicit survey involving self-reported anxiety and the IAT measuring for anxious associations. The findings showed significance such that participants could consciously manipulate their explicit report but not the results of the IAT. Thus, employing implicit measures, like the IAT, is paramount when experiments directly address socially sensitive topics (e.g., race, religion). By avoiding problems related to self-report, the IAT provides a compelling tool for identifying instances of bias. Thus, we chose to employ a measure of implicit bias to assess attitudes toward Muslim and non-Muslim names.

Despite some remaining concerns over the IAT’s effectiveness (Rothermund, Wentura, & De Houwer, 2005), the measure is widely accepted in social psychology. Since its creation, a substantial body of literature has supported the validity of Greenwald and colleagues’ implicit measurement (Greenwald et al., 2002; Karpinski & Hilton, 2001; Mierke & Klauer, 2003; Nosek, Greenwald, & Banaji, 2005; Nosek & Hansen, 2008). As a viable and reliable measure of implicit bias, we chose the IAT to assess individual differences in ingroup/outgroup bias.

Our study, then, addressed correlates of implicit bias that we believe have yet to be fully explored: individual trait characteristics and past parental experiences. The present investigation examined whether, and to what extent, these variables are involved in people’s implicit bias toward an outgroup. In light of current social, cultural, and political conditions, we selected Muslims as the outgroup of interest. We reasoned that comparing Muslim to non-Muslim names would be salient to participants and might result in some degree of prejudicial thinking. We hypothesized that both trait variables (e.g., anxiety, anger) and experiences of parental acceptance and rejection influence an individual’s implicit bias. That is, we expected to detect (a) positive associations for both trait anger and parental rejection in relation to implicit bias toward an outgroup; (b) negative associations for both trait anxiety and parental warmth in relation to implicit bias toward an outgroup; and (c) linkages between trait depression and the association effect and associations among parental variables.
and trait variables, although we were uncertain of the direction.

Method

Participants
Seventy-five students (19 men, 56 women, age range: 18–21) from Introductory Psychology courses at a small private university in the Pacific Northwest participated in our study in exchange for participation credit in their classes. Participation was voluntary; any students not wishing to take part in the experiment could pursue an alternative assignment. Participants were non-Muslim with the majority of students identified as Caucasian. Although we did not collect information regarding ethnicity, the course from which students participated in our experiment is required by the university. Therefore, we assumed that our sample reflected the larger university population, in which Euro-American students comprise 62% of the student body (“Student Demographics,” 2006).

Measures
Our study used three measures to address questions related to links between intrapersonal factors and implicit bias: Rohner’s (2004) Adult Parental Acceptance-Rejection Questionnaire (short form; PARQ), Spielberger’s (1979) State-Trait Personality Inventory (STPI), and the Implicit Association Test (IAT; Greenwald et al., 1998). We administered both the PARQ and the STPI as provided whereas the IAT was customizable regarding ingroup/outgroup stimuli.

The PARQ short form contains two subscales that target perceptions of past experiences with both parents and consists of 48 items, 24 items on which respondents report on mothers and 24 identical items for fathers. The measure yields four variables. Two variables, for mothers and fathers individually, tap parental warmth (e.g., “My mother/father said nice things about me”). The last two variables assess parental rejection (e.g., “My mother/father saw me as a big nuisance”).

The STPI contains three subscales (Anger, Anxiety, and Depression) pertinent to our study. We derived the following reliability measures from our sample. One subscale assesses trait anxiety (e.g., “I feel nervous and restless”). A second subscale taps trait anger (e.g., “When I get mad, I say nasty things”). The last subscale employed examines trait depression (e.g., “I feel hopeless”).

To assess implicit bias, we employed the IAT. We designed the test specifically with traditional Arab-Muslim names as the target outgroup (e.g., Yasmine, Mohammad) and various traditional multicultural non-Muslim names as the ingroup (e.g., Mercedes, Jacques). The original IAT template provided the positive and negative association words for the test (e.g., beautiful, horrible; Draine, 2009). We administered the Adult PARQ and the STPI on MediaLab software (Jarvis, 2008).

To calculate IAT scores, we employed the algorithm recommended by Greenwald, Nosek, and Banaji (2003), focusing on differential reaction times between testing blocks. The formula subtracts the time it takes to complete the incompatible block, associating Muslim names with positive words (e.g., Mohammad & beautiful), from the reaction times for the compatible block, associating Muslim names with negative words (e.g., Mohammad & horrible). The IAT reaction times served as our interpretation of implicit bias. If an individual responded faster on the compatible block than the incompatible block, then the score for reaction time was negative, implying more bias against Muslim names. Figure 1 illustrates the concept of the IAT algorithm with sample reaction times.

Procedure
Participants completed all measures individually; each session took about 20 min. After obtaining informed consent, experimenters seated participants in front of a computer and instructed them to read the written instructions for each task and to answer as quickly and accurately as possible. Aside from the initial verbal instructions, the experimenter minimized interaction. The participant responded to the IAT first, followed by the PARQ, the STPI, and a brief demographic questionnaire.

Results
Table 1 indicates associations among variables. Although our measures yielded ordinal data, the data also included many tied values; thus, we employed Pearson’s $r$ for assessing correlations and calculating effect sizes. Analyses indicated that measures employed had acceptable reliability (parental warmth: Mother, $\alpha = .88$, Father, $\alpha = .89$; parental rejection: Mother, $\alpha = .56$, Father, $\alpha = .81$; trait anxiety: $\alpha = .82$, trait anger: $\alpha = .80$, trait depression: $\alpha = .86$).

In relation to parental acceptance or rejection, as perceived fathers’ warmth increased, participants responded more quickly with the compatible block than with the incompatible, $r(75) = -.27$, $p = .02$, $r^2 = .07$; although no such link was detected.
between bias and mothers’ warmth, $r(75) = .01$, $p = .93$, $r^2 = .0001$. In other words, as father warmth increased, so too did bias (see Table 1). Of the trait variables observed (anger, anxiety, and depression), trait anger showed the greatest association effect with IAT scores. We found a marginal effect for trait anger, such that as trait anger increased, participants responded somewhat more quickly with the incompatible block than the compatible block. The negative value then suggests a slight preference for non-Muslim names.

Regarding linkages between trait anger and parental acceptance and rejection, only father, not mother, warmth was related to trait anger, $r(75) = -.25$, $p = .03$, $r^2 = .06$. Due to the only marginal association between trait anger and IAT effects, a regression analysis examining the relative contributions of trait anger and father warmth on the bias variable could not be conducted.

### Discussion

Results supported the general notion that interpersonal factors are related to implicit bias, even though many hypotheses regarding personality traits, developmental experiences, and prejudice were not supported. Findings showed that perceived paternal warmth was positively associated with bias against Muslim names. In addition, a statistical trend suggested that there may be a relation between trait anger and bias against Muslim names.

The link between increasing father warmth and increased bias against Muslim names is consistent with earlier work examining intergroup judgments. Ciarrochi and Forgas (1999) observed that the more one felt comfortable with oneself and one’s place in the world, the more likely one is to judge others quickly, using mental shortcuts like stereotypes. Perhaps high levels of paternal warmth lead to feelings of comfort with oneself and the world; these feelings, in turn, result in greater out-group bias. Paternal warmth linked with outgroup avoidance contrasts with the parental acceptance-rejection theory (Rohner & Khaleque, 2005), which states that parental rejection could lead to avoidance of new and foreign experiences. A possible explanation of the contradicting results between our data and Rohner’s theory could be that paternal acceptance or rejection influences an individual’s development differently than maternal acceptance or rejection.

The relation between increasing trait anger and decreasing bias against Muslims is surprising and inconsistent with prior work examining emotion and implicit bias. DeSteno and colleagues (2004) found that participants in whom anger (versus sadness or a neutral condition) had been
induced showed increased bias against outgroups. The discrepancy between findings points to the possibility that trait emotions exert a different influence on outgroup bias than do state emotions.

In sum, our results suggest that certain developmental experiences exert nonintuitive influences on implicit bias. That increasing trait anger should be marginally associated with decreasing levels of outgroup bias and that paternal warmth exerts more influence on social judgments than maternal warmth are both findings that call for additional research. Nonetheless, the findings suggest that implicit bias is affected by intrapersonal factors, as well as environmental and cultural factors. Our results also highlight the importance of considering intrapersonal factors in efforts to understand the origins of outgroup bias.

Although our study supports the general hypothesis that intrapersonal variables influence bias, several important limitations must be noted. Our relatively small sample consisted primarily of upper middle class, Euro-American women. It is possible that the predominantly female sample influenced the noticeable differences between paternal and maternal experiences. It may be that findings would differ with a larger, more diverse sample. Moreover, we did not ask participants whether they live in single-parent households. Because the PARQ asked the participant to rate parental variables for both parents, the responses for individuals with single-parent households may have skewed the data. Identifying this demographic among participants might have given new insight into our findings.

Another limitation of our study has to do with the retrospective nature of reported parental warmth and rejection. It may be that some third variable, such as depression or low self-esteem, influenced both report of parent behavior and performance on the IAT. However, if depression influenced reports of parent behavior and performance on the IAT, it remains unclear why linkages between parental warmth and IAT effects would differ according to parent gender.

Despite the small effect sizes detected, the relations between the variables warrant further investigation. Our findings indicate that future, larger investigations should examine a potential link between trait anger and reduced bias. Moreover, our study contributed to not only the literature addressing bias, but also to parental acceptance-rejection. Our findings indicate that paternal interaction may have different influences on an individual than with maternal experiences. We encourage future researchers to explore the role fathers play in human development, on both an inter- and intrapersonal level.

References


Brayko, a Montana native, graduated magna cum laude from Gonzaga University in 2009. She earned her BA degree in French, along with minors in psychology and English. After a year of studying abroad in Paris, France, Ms. Brayko returned to Gonzaga University with a new passion for psychology. For the remainder of her undergraduate career, she dedicated herself to studying psychology and doing research with faculty members, particularly Drs. Anna Marie Medina and Monica Bartlett. This fall (2011), she is starting a doctoral program in behavior analysis at the University of Nevada, Reno, studying under Dr. Ramona Houmanfar. Ms. Brayko’s primary research interests include instructional design and learning from a behavior analytic approach.
Social Anxiety and Rumination: Effect on Anticipatory Anxiety, Memory Bias, and Beliefs
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ABSTRACT. Contemporary theoretical models suggest that, after a social situation, socially anxious individuals focus on negative details of their performance and evaluate it more negatively than it actually was (i.e., ruminate). Individuals high \((n = 12)\) and low \((n = 16)\) in social anxiety gave a speech about a controversial topic. Following randomization, they either distracted themselves from the speech or ruminated about it. One week later, participants completed assessments for rumination about the speech, memory bias for speech quality, anticipatory anxiety for a second speech, and beliefs about the self. More rumination was associated with less positive perceptions of the first speech. Additionally, socially anxious individuals maintained a negative memory bias for their speech performance from Week 1 to Week 2. In contrast, individuals low in social anxiety developed a less negative perception of their performance over time.

In their cognitive model, Clark and Wells (1995) described important factors in the maintenance of social anxiety. One factor that has received a great deal of attention in the literature in recent years is rumination. Specifically, Clark and Wells proposed that, after a social situation has ended, socially anxious individuals conduct a postmortem of the event and focus on the negative elements while ignoring the positive elements. This ruminative process makes the event seem more negative than it was. This interaction is then added to the list of past failures that the socially anxious individual has accumulated in memory. The socially anxious individual thinks about this event when encountering similar social situations in the future. In this way, rumination feeds into anticipatory anxiety.

Consistent with Clark and Wells’s (1995) conceptualization of rumination, Rapee and Abbott (2007) found that the more socially anxious clients ruminated during the week after giving a speech, the more negatively they evaluated their performance. Furthermore, their evaluation of their performance relative to the ratings of an objective observer was more negative, suggesting a negative memory bias. The process of rumination seemed to produce a negative memory bias among socially anxious individuals. However, a limitation of Rapee and Abbott’s study is that they did not experimentally manipulate rumination.

Wong and Moulds (2009) experimentally manipulated rumination. They had 93 psychology undergraduates give a 3-min speech. They randomly assigned participants to a rumination or distraction task. Participants with a high fear of negative evaluation (FNE) score who engaged in the rumination task endorsed more negative beliefs about themselves immediately after the task. Participants with a high FNE score who engaged in the distraction task had lower negative beliefs about themselves. A limitation of this study was that Wong and Moulds did not examine whether these negative beliefs persisted over time.

These two studies served as the basis for the current study. We experimentally manipulated rumination and determined the effects of rumination...
a week later, thus addressing limitations of Rapee and Aboott (2007) and Wong and Moulds (2009).

The current study examined the following hypotheses: (a) high FNE individuals who ruminated would have a more negative memory of their speech a week later than high FNE individuals who distracted themselves; (b) more rumination after a speech would be related to a more negative perception of performance one week later; (c) high FNE individuals who ruminated would have more negative beliefs about the self both immediately after the speech and one week later, relative to individuals with low FNE and individuals with high FNE who distracted; and (d) high FNE individuals who ruminated would be more anxious about their next performance relative to the other groups.

Method

Participants

Forty-four college students (24 women and 20 men) with an average age of 21.9 (SD = 6.0) participated for course credit. Regarding race, 77% identified as Caucasian (n = 34), 7% identified as Latino/Latina (n = 3), 5% identified as mixed heritage (n = 2), and 11% were other ethnicities (n = 5). Participants who scored greater than 19 on the Fear of Negative Evaluation (FNE; Watson & Friend, 1969) scale met the classification for having high social anxiety (n = 12), and participants who scored less than 11 met the classification for having low social anxiety (n = 16; Wong & Moulds, 2009). We excluded participants meeting neither cut-off score (n = 16). Within the high social anxiety group, 6 participants completed the distraction condition and 6 participants completed the rumination condition. Within the low social anxiety group, 9 completed the distraction condition and 7 completed the rumination condition. Randomization led to the unequal number of participants in each condition in the low social anxiety group.

Materials

We created a demographics survey the current study. Participants indicated their age, gender, and ethnicity.

The Fear of Negative Evaluation Scale (FNE; Watson & Friend, 1969) measures distress and concerns related to being judged by others (e.g., “I worry about what people will think of me even when I know it doesn’t make any difference.”). The FNE consists of 30 true/false items. Test-retest reliability over a one-month period for college students ranged from .78 to .94 (Watson & Friend, 1969).

The Visual Analogue Scale (VAS; Watkins & Moulds, 2005) assesses participants’ moods, self-focused attention, and abstract thinking. Self-focused attention and abstract thinking are core elements of rumination; therefore, these items served as a manipulation check for the rumination and distraction conditions. The VAS used a 11-point Likert scale. Participants rated the self-focused attention item on a scale from 0 (not at all focused on myself) to 10 (extremely focused on myself). They rated the abstract thinking item on a scale from 0 (not at all abstract, completely concrete) to 10 (extremely abstract, not at all concrete).

The Self-Beliefs Related to Social Anxiety Scale (SBSA; Wong & Moulds, 2009) is a 15-item questionnaire that assesses the strength of beliefs about the self in a social context. Items are rated on an 11-point Likert scale from 0 (I do not agree at all with this statement) to 10 (I strongly agree with this statement). The SBSA examines three types of beliefs: excessively high standards for social performance, conditional beliefs concerning social evaluation, and unconditional beliefs about the self. The Unconditional Beliefs Subscale (e.g., “People think I’m inferior.”) was of interest in the current study, given that this scale is the most sensitive to rumination (Wong & Moulds, 2009). The 4-item Unconditional Beliefs Subscale has a Cronbach’s α of .82 (Wong & Moulds, 2009). Wong and Moulds found that the SBSA subscales positively correlated with the FNE scale (rs = .56 – .67; Watson & Friend, 1969).

The induction task consisted of a rumination task or a distraction task (Nolen-Hoeksema & Morrow, 1993). Each task consisted of 45 items starting with the words “think about.” A sample item for the rumination task was “trying to understand your feelings.” A sample item for the distraction task was “a lone cactus in the desert.”

The Speech Performance Questionnaire (SPQ; Rapee & Lim, 1992) is a subjective measure of public speaking performance. The SPQ is rated on a 5-point scale ranging from 0 (never) to 4 (very often) and includes 12 specific performance items (e.g., fidgeted, kept eye contact with audience) and 5 global performance items (e.g., made a good impression, appeared nervous). There are two versions of the SPQ, one that the participant completes and the other that an observer completes. The SPQ has a total score range from 0 to 68, with lower scores indicating a more negative view of the participant’s performance. Internal consistency within the two forms of the SPQ for
the specific performance items and global performance items ranged from .79 to .86 (Rapee & Lim, 1992). A research assistant viewed a videotape of each speech. Memory bias was calculated as the difference between the participant’s ratings and the experimenter’s ratings.

The Post-Event Rumination Questionnaire (PRQ; Abbott & Rapee, 2004) is a questionnaire that measures how frequently the participants thought about different aspects of their performance during the preceding week. Participants rate items on the PRQ using a 5-point rating scale ranging from 0 (never) to 4 (very often). The PRQ has two scales: Positive Rumination and Negative Rumination. We used only the 14-item Negative Rumination scale (e.g., “I looked stupid”). Higher scores indicate more negative rumination. Previous research indicated strong internal consistency with α of .94 for the Negative Rumination scale (Abbott & Rapee, 2004).

Procedure
Each participant took part in the study individually. Upon arrival at the first session, participants completed a consent form. Participants then completed the FNE, VAS, and SBSA. The experimenters told the participants that they would be talking about their opinions on a controversial topic (i.e., gun control) in front of a camera for 3-min. The experimenter reminded the participants that the quality of their performance would be evaluated. Participants then completed the VAS and SBSA. The experimenter asked the participants to complete the PRQ with regard to how much they thought about their first speech over the previous week. They also completed the SPQ based on their memory of their performance from the previous week. After completing the measures, participants did not actually talk about a controversial topic in front of the camera. Instead, the experimenter debriefed the participant. The experimenter explained the rationale for the study’s methodology, answered any questions, addressed any concerns, asked participants to not share their experiences in the study with other potential participants, and gave all participants information about local resources where they could obtain information about and treatment for social anxiety if they were interested.

Results
Reliability Analyses
The correlation between the version of the SPQ completed by the experimenter (who ran the study and rated the live performance) and the SPQ completed by the research assistant (who rated a videotape of the performance) revealed poor reliability, r(20) = .25, p > .05. The experimenter (M = 59.23, SD = 4.33) gave more positive ratings of performance than the research assistant (M = 51.32, SD = 8.89), t(21) = 4.19, p < .05, d = 1.83. By viewing the live performance, the experimenter may have been better able to pick up on some subtle aspects of the performance such as sweating or face twitching, which might be more difficult to detect on a recording. On the other hand, the experimenter may have formed some (positive) impressions about participants through interactions involved in conducting the study (e.g., administering informed consent) that may have unintentionally biased those ratings. The research assistant, however, had no information about any participant beyond viewing the recording of the performance. Unfortunately, due to an
equipment operation error, the recordings of 1 low social anxiety participant and 5 high social anxiety participants were lost. An argument could be made for either the experimenter or the research assistant providing the most valid data. In subsequent analyses, we used the experimenter’s data because they were the most complete.

Manipulation Checks
As expected, after the induction task, participants completing the distraction task had greater self-focused attention (M = 6.46, SD = 2.47) than participants completing the distraction task (M = 4.00; SD = 2.73), t(26) = 2.49, p < .05, d = .97. Contrary to expectations, the rumination task did not produce significantly more abstract thinking (M = 5.54, SD = 2.26) than the distraction task (M = 4.74; SD = 2.69), t(26) = .85, p > .05, d = .33. Consistent with expectations, anxiety increased from baseline (M = 3.79; SD = 2.66) to post speech, (M = 4.82; SD = 2.76), t(27) = 1.84, p < .05, d = .39.

Memory Bias
We used the experimenter’s ratings to calculate the memory bias scores. The difference between the participant and experimenter’s ratings on the SPQ were calculated separately at Time 1 and Time 2. Negative scores indicated that the participants’ perception of the performance was negative in comparison to the experimenter’s perception. A 2 Group (high FNE, low FNE) x 2 Task (rumination, distraction) x 2 Time (Week 1 rating, Week 2 rating) mixed design ANOVA was conducted (see Table 1). Only the Time x Group interaction was significant, F(1, 24) = 5.63, p < .05 (see Figure 1).1 Follow-up analyses revealed that low fear of negative evaluation individuals did not differ from high fear of negative evaluation individuals in terms of memory bias at Week 1, t(26) = .06, p > .05, d = .02. There was a trend for low fear of negative evaluation individuals to exhibit less negative memory bias at Week 2 relative to high fear of negative evaluation individuals, t(26) = 1.41, p = .09, d = .55. Within the low fear of negative evaluation group, negative memory bias significantly decreased from Week 1 to Week 2, t(15) = -2.67, p < .05, d = .30. Within the high fear of negative evaluation group, negative memory bias did not significantly change from Week 1 to Week 2, t(11) = -.96, p > .05, d = .24.

Post Event Rumination
As hypothesized, more rumination about the first

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### TABLE 1

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<thead>
<tr>
<th>High Social Anxiety</th>
<th>Low Social Anxiety</th>
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<tr>
<td><strong>Outcome</strong></td>
<td><strong>Rumination</strong></td>
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<tr>
<td>Time 1 M (SD)</td>
<td>Time 2 M (SD)</td>
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Note: SBSA = Self-Beliefs Related to Social Anxiety Scale.

---

### FIGURE 1

**Means for high and low Fear of Negative Evaluation (FNE) groups for memory bias at Weeks 1 and 2.**

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Footnote:1 We reran the memory bias analyses using the research assistant's ratings to calculate the memory bias scores. This analysis also produced a significant Time x Group interaction, F(1, 20) = 4.58, p < .05. Follow-up analyses revealed that low fear of negative evaluation individuals (M = 9.36, SD = 12.39) showed significantly less memory bias at Week 1 relative to high fear of negative evaluation individuals (M = 18.82, SD = 7.73), t(20) = 2.15, p < .05, d = .91. Low fear of negative evaluation individuals (M = 4.36, SD = 11.77) continued to exhibit less negative memory bias at Week 2 relative to high fear of negative evaluation individuals (M = 20.73, SD = 10.75), t(20) = 3.41, p < .05, d = 1.45. Within the low fear of negative evaluation group, negative memory bias significantly decreased from Week 1 (M = -9.36, SD = 12.39) to Week 2 (M = -4.36, SD = 11.77), t(10) = 2.55, p < .05, d = .78. Within the high fear of negative evaluation group, negative memory bias did not significantly change from Week 1 (M = -18.82, SD = 7.73) to Week 2 (M = -20.73, SD = 10.75), t(10) = .84, p > .05, d = .27. Moreover, the pattern of differences among the groups was the same whether we used the experimenter's or research assistant's data. The experimenter's data appear to provide a more conservative test of the hypotheses, as fewer of the differences among means were statistically significant according to follow-up tests.

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Social Anxiety and Rumination | Einsel and Turk

speech, as measured by the PRQ, was negatively correlated with mental representation of speech performance, as measured by the SPQ, $r(26) = -.44$, $p < .05$. Individuals high in fear of negative evaluation ($M = 24.3, SD = 7.9$) reported more rumination over the course of the week than individuals low in fear of negative evaluation ($M = 16.1, SD = 11.4$), $t(26) = -2.16$, $p < .05$ (one-tailed), $d = 1.02$ (see Table 2).

Unconditional Beliefs
A 2 (Group: high FNE, low FNE) x 2 (Task: Rumination, Distraction) x 4 (Time: baseline, post speech, post induction, one week follow-up) ANOVA (with repeated measures on the third factor) was conducted with regard to SBSA unconditional negative beliefs about the self. No significant main effects or interactions emerged (see Table 1).

Anticipatory Anxiety
A 2 (Group: high FNE, low FNE) x 2 (Task: Rumination, Distraction) ANOVA was conducted with regard to anxiety in anticipation of giving a second speech. No significant main effects or interactions emerged (see Table 2).

Discussion
Contrary to expectations, high fear of negative evaluation individuals who ruminated did not have a more negative memory of their speech a week later than fearful individuals who distracted themselves directly after their speech, relative to the judgments of an observer. Instead, the experimental manipulation did not have any apparent impact on memory bias. In contrast, anxiety status did impact memory bias. Consistent with Clark and Wells’s (1995) model, individuals high in fear of negative evaluation maintained a negative perception of their performance as measured by memory bias over a 1-week period. In contrast, individuals low in fear of negative evaluation became more positive about their performance over time. It is possible that the short-term task of ruminating or distracting immediately after the speech was not a powerful enough intervention to impact perception of performance over time. Instead, nonanxious individuals may naturally ruminate less, which would lead to a less negative perception of performance over time. In contrast, socially anxious individuals may naturally ruminate more, which leads to maintenance of an originally negative perception. The evidence gathered for the second hypothesis supports this interpretation. Specifically, individuals who ruminated the most during the week had the most negative perceptions of their speech one week later, and socially anxious individuals ruminated more over the course of the week than their nonanxious counterparts. Interestingly, rumination seems to keep a negative perception going, rather than making the perception even worse for socially anxious individuals, which is somewhat different than Clark and Wells’s (1995) proposal. However, consistent with our data, Rapee and Abbot (2007) also found that socially anxious individuals maintained their negative memory bias of their performance over time rather than finding that the bias became even more negative.

We also hypothesized that individuals with a high fear of negative evaluation who ruminated would have more negative beliefs about the self both immediately after the speech and one week later, relative to individuals with low FNE and individuals with high FNE who distracted. However, none of the relevant results were significant; thus, the data did not support the hypothesis. Additionally, more anxiety about the next social performance was expected for high FNE individuals who ruminated relative to the other groups. The expectation for more anxiety about the next social performance was not supported by the results.

The experimental manipulation did not impact the dependent variables in any analysis. The manipulation check revealed that experimental groups did differ in terms of self-focused attention but not abstract thinking (although the effect size for abstract thinking was in the small to medium range). In contrast, Wong and Moulds (2009) found differences on both of these variables as well as unconditional beliefs. It is unclear why the
experimental manipulation appears to have been weaker in the current study than in the Wong and Moulds study. There were some procedural differences between the two studies, such as having the experimenter stay in the room, informing participants that another researcher would evaluate their speech later, and asking participants to rate the quality of their own speech prior to the experimental manipulation. These procedures were part of the current study and Rapee and Abbott’s (2007) study, but not Wong and Moulds’s study, and may have impacted the results. For example, perhaps focusing on performance quality prior to the manipulation had a powerful effect on self-perception of performance that decreased the effectiveness of the subsequent distraction induction. A stronger experimental manipulation might have yielded more differences between rumination and distraction conditions on the dependent variables. Consequently, the weaker than expected impact of our experimental manipulation is a limitation of the current study.

Another limitation to the current study is inadequate power due to small sample size (N = 28). Low power increases the risk of Type II error. The current study may have failed to detect some true differences between groups and not provided an adequate test of the study hypotheses. Therefore, additional tests of the hypotheses are warranted. Another important limitation was the lack of inter-rater reliability between the experimenter’s and the observer’s ratings of speech performance. One potential explanation for the lack of reliability is that the experimenter made ratings of a live performance and the observer viewed a recording. Additionally, the current study utilized a speech in front of a camera and the experimenter to induce anxiety, similar to the procedures used by Abbott and Rapee (2004). Future research may vary the nature of the social task used to induce anxiety, given that other social situations may prove to be more likely to elicit fear of negative evaluation and subsequent rumination (e.g., conversation, prepared speech to a larger audience).

Clinically, this study has some possible implications. Given that socially anxious individuals view their performance more negatively than others, therapists could help highly socially anxious individuals perceive their performance in those situations more realistically. Additionally, therapists can encourage socially anxious individuals to practice coping techniques such as cognitive restructuring after social situations rather than focusing on negative details (i.e., ruminating).

References

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Factors Affecting Teens’ Attitudes Toward Their Pregnant Peers
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University of San Diego

ABSTRACT. Research has shown that pregnant teens experience negative consequences resulting from stigmatization, but little research has explained why teenagers stigmatize pregnant peers to a greater degree than sexually active peers. We investigated factors affecting how teens view their pregnant peers. We hypothesized that belief in the effectiveness, availability, and ease of use of contraceptives; belief in a just world; feelings of invulnerability; and male gender would be associated with negative attitudes toward pregnant teens. Data from 101 high school students indicated that attitudes toward contraception and belief in a just world correlated in the expected direction with stigmatization and that male participants reported more negative attitudes. As a group, the study variables predicted negative attitudes, and in particular, attitudes toward contraception and gender uniquely contributed to negative beliefs about pregnant peers. This research may help educators and youth advocates understand and improve the outcomes of pregnant teens who face stigmatization.

Every year in the United States, approximately 750,000 teens aged 15–19 become pregnant (Kost, Henshaw, & Carlin, 2010), a much higher rate than most other industrialized nations (McKay & Barrett, 2010). This troubling statistic has prompted a great deal of research on effective methods of managing adolescents’ sexual behavior and preventing pregnancy, in addition to generating a maelstrom of differing public opinion and political debate (Collins, Alagiri, Summers, & Morin, 2002). Although research that informs teen-pregnancy prevention efforts is of great importance, research is also needed to inform efforts to improve the social, emotional, and educational outcomes of teens who are already pregnant and to mitigate the negative consequences associated with pregnancy.

One of the negative consequences of pregnancy is social stigmatization (Whitehead, 2001). Gallup-Black and Weitzman (2004) reported that although 87% of teens believed that sexual activity before the age of 18 was accepted by their peers, a significantly smaller percentage (53%) believed that teen parenting was accepted. This discrepancy indicates that among teens, pregnancy is stigmatized to a much greater degree than being sexually active. In order to understand how to help reduce stigmatization of pregnant teens, there must be a greater understanding of what determines the attitudes that teens have toward their pregnant peers.

Although a number of studies have focused on how pregnant teens experience their pregnancies in the social world (Rentschler, 2003; Whitehead, 2001; Wiemann, Rickert, Berenson, & Volk, 2005), few quantitative studies have examined how non-pregnant teens view their pregnant peers. However, some studies have employed qualitative methodologies to examine the topic (Herrman, 2008; Kegler, Bird, Kyle-Moon, & Rodine, 2001). In one of the few studies that asked nonpregnant teens their opinions of pregnant and parenting peers, several participants emphasized the notion that teen parents lacked ambition and significant direction in...
life (Herrman, 2008). Herrman also noted that teens typically see pregnant young women as being at fault for their pregnancies. Teens in one study reported that their peers often view pregnant girls at their school as promiscuous (Kegler et al., 2001).

Stigmatization of pregnant adolescents is problematic because it can negatively affect outcomes for these adolescents. Across a variety of situations, social stigmatization may result in a number of negative consequences for the victim. Stigmatized young people suffer serious internalizing problems such as depression (Moses, 2009) and low self-esteem (Magin, Adams, Heading, Pond, & Smith, 2008). They also experience social isolation, exclusion, and lowered academic achievement (Magin et al., 2008; Spencer, Steele, & Quinn, 1999; Walton & Cohen, 2007; Wiemann et al., 2005). Many teens associate pregnancy and parenthood with loss of friends and feeling like an outcast (Herrman, 2008; Rentschler, 2003). In one study of teens who had just given birth, 39.1% said they felt stigmatized by their pregnancy (Wiemann et al., 2005). The teens in this study who felt stigmatized by their pregnancy often reported that they had seriously considered abortion, perceived their teachers as judging their pregnancy as a mistake, and felt abandoned by their baby’s father. Pregnant teens who perceived their teachers as underestimating their intelligence often lowered their own academic expectations (Kalil, 2002). Wiemann et al. (2005) reported that Caucasian teens felt the highest levels of stigmatization (45.3%), compared to African-American (41.0%) and Mexican-American (32.7%) teens. One researcher, who stated that pregnancy stigmatization may cause “feelings of fear, anger, worthlessness, depression, and shame,” as well as “both physical and mental health problems,” went so far as to call pregnancy stigmatization “social death” (Whitehead, 2001, p. 437).

It is important not only to gain a better understanding of how teenagers view their pregnant peers, but also to explain why these attitudes exist. Examining data from the National Survey of Family Growth, Suellen Irop and Flanigan (2006) found that 31% of sexually active female adolescents experience pregnancy. This figure is slightly lower for non-Hispanic White adolescents, at 23%. However, these figures may be lower than actual pregnancy rates because of widespread underreporting (Jones & Kost, 2007). Sex may result in pregnancy. Therefore, it is interesting that teens are accepting of other teens having sex but view pregnant teens in a negative light.

One possible explanation for this discrepancy is that teens see pregnant peers as having engaged in irresponsible sex in contrast to nonpregnant sexually active peers. In support of this notion, one study found that sexually active college students compared themselves to siblings who had experienced unplanned or unwanted pregnancies and saw themselves as being more responsible and in control of their sexual decisions than their siblings had been (Allen, Husser, Stone, & Jordal, 2008). Weinstein (1980) explained that people often create negative stereotypes of individuals who experience various undesirable events that are perceived as controllable, because people believe that the stereotyped individual had the ability to prevent that negative event from occurring but failed to do so. Likewise, pregnant teens may feel stereotyped because other people assume that these pregnant teens should have been able to control their fertility by means of contraception, yet did not. Teens may believe that using a condom or taking oral contraceptives equates to not getting pregnant, without realizing the appreciable failure rates associated with normal use of these forms of birth control. If teens believe that normal use of birth control is nearly 100% effective in preventing pregnancy, they may assume that pregnant peers were not practicing responsible sex, thus leading to stigmatization. The National Campaign to Prevent Teen and Unplanned Pregnancy (2008) found that 22% of young adults cited nonuse or improper use of contraception as the primary reason for unplanned pregnancies, and an additional 42% said that unplanned pregnancies result from people being careless, not thinking about the future or consequences of their actions, lack of planning, thoughtlessness, loss of responsibility. Only 2% of young adults cited birth control failure as explaining unplanned pregnancy (National Campaign to Prevent Teen and Unplanned Pregnancy, 2008). However, approximately half (48%) of all women experiencing unplanned pregnancies in 2001 were using contraception the month they became pregnant (Finer & Henshaw, 2006). Recent data indicated that for women in all age groups, birth control pills fail 9% of the time and male condoms 17% of the time in the first 12 months of use (Kost, Singh, Vaughan, Trussel, & Bankole, 2008). Kost et al. reported that for women under the age of 20, reversible contraception fails 13.1% of the time in a 12-month period.

Another possible explanation for the stigmatization
Factors Affecting Teens’ Attitudes | Kuckertz and McCabe

zation of teen pregnancy in the context of a relative lack of stigmatization of teen sexual activity relates to just world theory (Lerner, 1980). Lerner (1965) originally examined just world theory in relation to cognitive dissonance theory (Festinger, 1957), suggesting that people have a need to believe that their efforts directly affect their outcomes, so as to justify maintained actions to achieve certain goals or outcomes. According to a just world framework, people experience negative events as a direct result of their own actions and therefore deserve what they get (Lerner, 1980). Belief in a just world can also serve as a type of defensive attribution by allowing people to reassure themselves that because they are not bad people or are not engaging in bad behavior, nothing bad will happen to them (Shaver, 1970). Two techniques observers use to maintain belief in a just world include devaluing the character of victims or blaming victims based on previous actions or failures (Lerner, 1965, 1980; Lerner & Simmons, 1966). Research suggests that belief in a just world often leads people to blame victims across a variety of situations, such as rape (Castello, Coomer, Stillwell, & Cate, 2006; Lambert & Raichle, 2000; Sakalli-Uğur, Yalçın, & Glick, 2007), robbery (van den Bos & Maas, 2009), and poverty (Harper, Wagstaff, Newton, & Harrison, 1990). Similarly, teens may assume that pregnant peers must have deserved to become pregnant and that pregnant peers somehow have failed to take appropriate precautions, rather than simply seeing them as victims of bad luck. Furthermore, teens may denigrate the personal characteristics of pregnant peers. Because teens may not perceive nonpregnant sexually active peers as experiencing negative outcomes, teens may not feel the need to make negative attributions toward them in order to maintain a belief in a just world.

The belief that one is generally invulnerable, or an illusion of unique invulnerability (Perloff, 1983), may also factor into teens’ negative attitudes toward pregnant peers. People tend to judge themselves as less susceptible to negative events than other people (Weinstein, 1980). Research indicates that young people typically see themselves as much less at-risk to experience unplanned pregnancy compared to their peers (Breheny & Stephens, 2004; Burger & Burns, 1988; Whitley & Hern, 1991). Six in ten young adults (aged 18–29) underestimate their risk of experiencing unplanned pregnancy when not using contraception (National Campaign to Prevent Teen and Unplanned Pregnancy, 2008). As previously mentioned, when people view negative life events as controllable, they are more likely to create stereotypes about the type of individual to whom such negative things happen. Likewise, teens may create a stereotype of poor, unintelligent, or delinquent pregnant teens. If teens judge that they are unlike the stereotypical pregnant teen, they may conclude that they themselves are invulnerable to pregnancy (Burger & Burns, 1988; Weinstein, 1980). If nonpregnant teens view themselves as being at low risk for pregnancy, they may be less empathic toward pregnant peers.

Although our primary interest centered on examining how beliefs about contraception, belief in a just world, and feelings of invulnerability influence stigmatization of pregnant teens, we believed it important to explore the effects that demographic variables might have on attitudes toward pregnant teens. For example, teen pregnancy by its very nature is experienced differently depending on gender. Researchers have found gender differences for a number of issues relating to sexuality and pregnancy, including awareness of factors influencing health during pregnancy (Delgado, 2008), intentions and attitudes regarding contraception (Wang, Cheng, & Chou, 2008), and factors affecting contraceptive usage (Ryan, Franzetta, & Manlove, 2007). Furthermore, men typically hold stronger just world beliefs than women (Lipkus, 1991) and may also view themselves as more generally invulnerable (Stake, 1992). Because of these gender differences, we deemed it appropriate to consider the influence gender might have on attitudes toward pregnant teens.

Race and socioeconomic status may also have significant effects on attitudes surrounding teen pregnancy. Caucasian teens report feeling stigmatized by their pregnancies more than African-American and Hispanic teens (Wiemann et al., 2005) and would be more likely to be upset if they became/get a partner pregnant (Suellentrop, Bowen, Huffman, Smith, & Flanigan, 2006). In addition, teens from advantaged economic backgrounds typically see teen pregnancy and parenthood as less acceptable than do more economically disadvantaged teens (Jewell, Tacchi, & Donovan, 2000). Teens with higher economic status also describe greater feelings of invulnerability to pregnancy than do lower-income teens (Farber, 1994). However, some studies show significant effects of either race/ethnicity or socioeconomic status, but do not show significant effects for both. Because the current study was concerned with stigmatization, we wanted to examine the attitudes of teens who are most likely
to stigmatize their pregnant peers. As pregnancy stigmatization may be particularly pronounced in Caucasian and/or higher socioeconomic populations, we conducted our research at a primarily Caucasian, middle- to upper income high school.

In addition, we wanted to further examine Gallup-Black and Weitzman’s (2004) finding that teens viewed peer parenting as less acceptable than peer sexual activity. As framed by Gallup-Black and Weitzman, this finding is somewhat ambiguous. First, the authors asked specifically about teen parenting, rather than teen pregnancy. Although any attitudes toward teen parenting would seem to imply similar attitudes toward teen pregnancy, it is possible that attitudes toward the two could differ based on beliefs about abortion, adoption, or some other factor. It is also possible that this discrepancy in acceptance simply means that teens see parenting as an undesirable outcome of otherwise harmless sexual activity. Thus, it is unclear what the implications of the discrepancy between acceptance of teen sex and acceptance of teen parenting are in terms of stigmatization of pregnant teens. As stigmatization of pregnant teens in comparison to sexually active teens is a relatively unstudied area of research, we believed it worthwhile to ask questions specifically about feelings toward pregnant peers themselves, rather than the condition of being pregnant or being a parent. Although seemingly subtle, such differences are important in terms of the social experience of pregnant teens.

We hypothesized that attitudes toward contraception, belief in a just world, and feelings of invulnerability to pregnancy would correlate with teens’ negative attitudes toward pregnant peers. Specifically, we predicted that teens who believed that contraception is accessible, effective, and easy to use; believed in a just world; and believed that they were invulnerable to pregnancy would be more likely to stigmatize their pregnant peers. We also hypothesized that male participants, compared to female participants, would hold more negative attitudes toward pregnant teens. Furthermore, we examined the extent to which attitudes toward contraceptive usage, belief in a just world, and feelings of invulnerability contributed to stigmatization of pregnant teens, when controlling for gender and parental education. We expected that as a group, these variables would predict stigmatization of pregnant peers and, moreover, that each of these factors would independently predict the extent to which teens viewed their pregnant peers in a negative light.

Method

Participants

Participants were 101 students (49 male adolescents, 51 female adolescents, 1 unknown) recruited from health classrooms in a largely middle- to upper-income public high school in the suburbs of a large Midwestern city. The high school’s student population is primarily Caucasian (81.4%), but also has a relatively high percentage of Asian/Pacific Islander students (11.9%). African American students comprise 2.8% of the student body and Hispanic students 3.5%, both low figures compared to state averages. The school spends over $4,600 more on each student than the state average for per-pupil annual expenditures. The high school completion rate exceeds 99%, with 99% of graduates pursuing a college education. Detailed demographic information for study participants appears in Table 1. The participants were primarily sophomores, with ages ranging from 15–17 (M = 15.57, SD = 0.59), and were mostly Caucasian (n = 72). Just over half of the participants (50.5%) reported that at least one parent had completed graduate school.

Measures

Participants completed a questionnaire consisting of the following measures:

Demographics. Participants reported their age, gender, year in school, race/ethnicity, and the highest level of education completed by either parent.

Attitudes and Beliefs About Contraception Scale (Kuckertz, 2009a). Because there is no available quantitative measure of teens’ perceptions of the effectiveness, ease of use, and availability of contraceptives, we developed a measure to assess this construct. We began by administering several open-ended questions relevant to the concept of interest in a small sample of high school students (n = 8). Based on these responses, we wrote seven statements rated on a 6-point Likert scale, with higher scores indicating greater confidence in the availability, effectiveness, and ease of use of contraception. Next, we piloted this measure with a convenient sample of teens and young adults (n = 5). Based on the feedback we received the pilot sample, we modified the wording of the measure for improved readability. The measure administered to the current sample of 101 students contained seven items; however, one item was eliminated from the final analyses on the basis of little variability in responses (excluded item: “People who use contraception are still taking...”).

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Factors Affecting Teens’ Attitudes | Kuckertz and McCabe

Factors Affecting Teens’ Attitudes | Kuckertz and McCabe

Factors Affecting Teens’ Attitudes | Kuckertz and McCabe

Factors Affecting Teens’ Attitudes | Kuckertz and McCabe

Factors Affecting Teens’ Attitudes | Kuckertz and McCabe

a risk that they could get pregnant,” $M = 4.18, SD = .80$). Thus, the measure as analyzed contained six items (see Table 2). Responses on this scale are not necessarily expected to be correlated; rather, they are additive, so we determined it inappropriate to report internal consistency. A student may believe that contraception is easy to use, but not very effective. However, we would hypothesize that another student who believes that contraception is both easy to use and effective would have more negative attitudes toward pregnant peers than the former student.

Beliefs About Pregnant Teens Scale (Kuckertz, 2009b). We also created a new measure to assess beliefs about pregnant teens—to our knowledge there is no available quantitative measure of this construct. We began by administering several open-ended questions relevant to the concept of interest in a small sample of high school students ($n = 8$). Based on these responses, we wrote 17 questions and piloted this measure in a convenient sample of teens and young adults ($n = 5$). In order to determine the most effective scale continuum, we administered the measure with two items rated on a 5-point Likert scale, and the remaining 15 items rated on a 6-point Likert scale. Based on feedback from pilot participants, we standardized the measure with all items rated on a 6-point Likert scale from 1 (strongly disagree) to 6 (strongly agree) and modified the wording on two of the items. Higher scores indicated more negative attitudes toward pregnant peers. We administered the adapted version of the 17-item measure to the current sample of 101 teens.

When we began the development of this questionnaire, we were concerned with the potential effect of social desirability on participants’ reporting of beliefs about pregnant teens. Because issues such as teen sexuality and teen parenting may be sensitive subjects, previous researchers have studied these topics by asking participants about others’ attitudes, rather than participants’ personal attitudes (Gallup-Black & Weitzman, 2004). In other words, participants may not feel comfortable admitting that they believe pregnant teens are unintelligent; however, if participants more comfortably admit that others view pregnant peers negatively, such tendencies may in fact capture participants’ personal internal attributions of negative qualities to pregnant peers. Therefore, we included separate items designed to (a) measure perceived attitudes of others toward pregnant peers or (b) measure personal attitudes and beliefs about pregnant peers.

We removed one item from the scale because it referenced sexually active female peers in general, rather than pregnant female peers in particular, and six items were excluded on the basis of low item-total correlations. After excluding these items, five items comprised an attitudes of others subscale and five of the items comprised a personal subscale.
beliefs subscale. Our primary aim was to examine participants’ personal beliefs and attitudes toward pregnant peers rather than participants’ perceived beliefs about others’ attitudes. Therefore, the personal belief scale was the final measure used in all analyses (see Table 3). Cronbach’s alpha for the current study was .73.

Global Belief in a Just World Scale (Lipkus, 1991). Participants reported their belief in a just world on a widely used 7-item, 6-point Likert self-report scale. For example, participants were asked to rate their agreement on questions such as “I feel like people get what they deserve.” Hellman, Muilenburg-Trevino, and Worley (2008) found that the Global Belief in a Just Word Scale was more reliable, on average (α = .81) than two other commonly used measures of belief in a just world. Cronbach’s alpha for the current study was .73. This questionnaire has also demonstrated good construct validity (Lipkus, 1991).

Perceived Invulnerability to Pregnancy. Participants completed an adapted version of Burger and Burns’s (1988) questions on teens’ perceived invulnerability to unplanned pregnancy for themselves as well as their peers. Participants answered the questions “What would you expect the likelihood is that the average female student who is sexually active at your high school will experience an unplanned pregnancy in the next 12 months?” and “If you are sexually active, or supposing you were to become sexually active, what do you think your likelihood would be of experiencing an unplanned pregnancy (either yourself or your partner) in the next 12 months?” from 0 (no chance) to 100 (certainty). Burger and Burns included only sexually active women in their analyses of undergraduate students; however, as some high school students may not be sexually active, we included the clause “or supposing you were to become sexually active” in our version of these questions. We also wished to examine male attitudes toward pregnant teens, so we included likelihood of getting a partner pregnant as well. We calculated each participant’s invulnerability score by subtracting the participant’s reported likelihood of experiencing an unplanned pregnancy from the participant’s reported rating for the average sexually active female adolescent at that school (Whitley & Hern, 1991). Larger differences indicated greater feelings of invulnerability. As a validity check for the construct of interest, we conducted a t-test to determine whether participants in our study felt less vulnerable to pregnancy compared to the average sexually active peer. Consistent with previous literature, we found that participants in our study did see themselves as less vulnerable to pregnancy (M = 31.51, SD = 29.47) than their peers (M = 38.04, SD = 27.50), t(97) = 2.84, p = .006, d = 0.23.

Adolescent Invulnerability Scale (AIS; Duggan, Lapsley, & Norman, 2000). Because we slightly adapted our perceived invulnerability to pregnancy questions from the original questions used by Burger and Burns (1988), we also included the General Invulnerability Subscale of the AIS as an established measure of invulnerability. This subscale consists of nine items scored according to a 5-point Likert scale, with higher scores indicating stronger feelings of invulnerability. For example, items include “The problems that happen to other people my age are unlikely to happen to me.” This subscale has good construct validity and strong internal consistency (α = .83; Lapsley & Duggan, 2001). Cronbach’s alpha for the current study was .85.

### Procedure

The first author visited seven health classrooms at the high school, described the study, and invited students to participate. Students took informed consent forms home for their parents to sign. The following day, the first author visited the classrooms to explain and obtain signed informed consent forms. Students who had returned to class with a consent form, signed by a parent, were eligible to complete an assent form. After collecting both the assent and consent forms, the first author administered the questionnaire in class to consented/assented students. Students received $5.00 gift cards as an incentive for participation. To protect the privacy of students, participating students were not assigned cards as an incentive for participation. To protect the privacy of students, participating students were not assigned cards as an incentive for participation.

### TABLE 3

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<tr>
<th>Beliefs About Pregnant Teens Scale</th>
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<tbody>
<tr>
<td>Item</td>
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<tr>
<td>1. Girls who get pregnant at my school were not using contraception.</td>
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<tr>
<td>2. Girls who get pregnant at my school are more promiscuous than the average sexually active girl at my school.</td>
</tr>
<tr>
<td>3. Girls who get pregnant at my school have had more sexual partners than the average sexually active girl at my school.</td>
</tr>
<tr>
<td>4. Girls who get pregnant at my school are less intelligent than the average sexually active girl at my school.</td>
</tr>
<tr>
<td>5. Girls who get pregnant at my school are more likely to engage in other delinquent behavior than the average sexually active girl at my school.</td>
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Factors Affecting Teens' Attitudes | Kuckertz and McCabe

student privacy, all responses were anonymous. Of 151 students who received informed consent forms, 101 students came to class the following day with signed consent forms and completed the survey (67% response rate).

Results

We computed bivariate correlations to determine the relations between gender, parental education, beliefs about contraception, belief in a just world, perceived invulnerability to pregnancy, general feelings of invulnerability (AIS), and attitudes toward pregnant peers (see Table 4). We did not include age and year in school in the analyses on the basis of little variability in this sample. As hypothesized, stronger beliefs in the effectiveness and availability of contraception predicted more negative attitudes toward pregnant peers, \(r(100) = .42, p < .001\). Also as hypothesized, belief in a just world was correlated with negative attitudes toward pregnant peers, \(r(100) = .21, p = .04\). Additionally, the data indicated that participants who believed that contraception is effective, available, and easy to use felt less vulnerable to negative life events, \(r(100) = .27, p = .006\). Correlations yielded no significant relations between attitudes toward pregnant teens and perceived invulnerability to pregnancy, general invulnerability, or parental education.

We conducted an independent samples \(t\) test in order to determine whether gender was related to negative attitudes toward pregnant teens. Results indicated that male participants (\(M = 19.20, SD = 4.12\)), compared to female participants (\(M = 16.24, SD = 4.47\)), held more negative attitudes toward pregnant peers, \(t(97) = 3.43, p = .001, d = 0.69\).

Next, we conducted a multiple regression to examine the effects of attitudes toward contraception, belief in a just world, perceived invulnerability to pregnancy, feelings of general invulnerability, gender, and parental education on teens’ attitudes toward their pregnant peers (Table 5). This analysis indicated that a significant proportion of the variance in attitudes toward pregnant peers could be accounted for by the independent variables, \(R^2 = .33, F(6, 89) = 7.30, p < .001, f^2 = 0.49\). Consistent with our hypotheses, greater belief in the effectiveness, availability, and ease of use of contraception predicted more negative attitudes toward pregnant peers, \(t(93) = 4.36, p < .001\), as did male gender, \(t(93) = 2.96, p = .004\). There was a nonsignificant trend for individuals with stronger belief in a just world to hold more negative attitudes toward pregnant teens, \(t(93) = 1.75, p = .08\). Contrary to our hypotheses, there were no significant effects of perceived invulnerability to pregnancy, \(t(90) = 1.26, p = .21\); general invulnerability, \(t(93) = 0.99, p = .33\); or parental education, \(t(93) = 1.48, p = .14\), on the dependent variable.

Discussion

This study of high school students tested the extent to which demographic variables, attitudes and beliefs about contraception, belief in a just world, perceived invulnerability to pregnancy, and feelings of general invulnerability were associated with teens’ negative attitudes toward their pregnant peers. We hypothesized that strong beliefs in the availability, ease of use, and effectiveness of contraception; belief in a just world; high ratings of perceived invulnerability to pregnancy; and high ratings of general invulnerability to negative life events would be correlated with negative attitudes toward pregnant teens and that each variable would uniquely predict these attitudes. We also hypothesized that male participants, compared to female participants, would hold more negative beliefs about pregnant peers. Our data partially supported these hypotheses.

As expected, teens who believed that their peers have effective contraception available that is easy to use tended to have more negative attitudes toward their pregnant peers. If one believes that effective contraception is available to sexually active peers, then one is likely to judge those peers who become pregnant as having failed to use contraception and thus, for example, less intelligent or more delinquent compared to nonpregnant sexually active peers. The literature suggests that sex education and pregnancy prevention efforts emphasize the importance of responsible sex in order to prevent teen and unwanted pregnancies (Benagiano, Bastianelli, & Farris, 2007; Kirby, 2007; Warren, 1992). Although certainly important, an unintended negative consequence of this message may be the implication that teens who do become pregnant were having irresponsible sex. This irresponsibility may then be translated into a variety of negative beliefs about pregnant peers—for example, that they are unintelligent, delinquent, or promiscuous. Many teen pregnancies are in fact the result of lack of or improper contraceptive usage; however, it is also true that roughly half of all women experiencing unplanned pregnancy were using contraception (Finer & Henshaw, 2006). Pregnant teens are negatively affected in many arenas of their personal, social, and academic
lives by this stigmatization, as previously discussed. Pregnant and parenting teens are aware of these attitudes and uncomfortable with the idea that they are all grouped together as having the same character flaws and sharing the same fate (Prettyman, 2005).

The data partially supported our hypothesis that belief in a just world would be associated with negative attitudes toward teen pregnancy. Although belief in a just world was correlated with negative attitudes toward pregnant teens when we controlled for other variables, belief in a just world was only a marginally significant predictor. Teens who believe that people deserve what they get and that bad things happen to people as a result of their own actions may tend to stigmatize pregnant peers more than teens who do not believe in a just world. Lerner (1980) suggested that people often make attributions about others’ misfortunes by reinterpreting the cause of the misfortune or reinterpreting the character of the victim. Because teen pregnancy is generally viewed negatively, teens who believe in a just world may assume that their pregnant peers must deserve to be pregnant on the basis of various actions (e.g., having many sexual partners) or character flaws (e.g., lower intelligence). These findings are consistent with the literature on victim stigmatization which suggests that people who believe in a just world may be more likely to stigmatize and blame victims across a variety of negative situations (Castello et al., 2006; Harper et al., 1990; Lambert & Raichle, 2000; Sakallı-Uğurlu et al., 2007; van den Bos & Maas, 2009). Presumably, the belief that pregnant peers made bad choices or possess negative character traits is less threatening to one’s belief in a just world than, for example, the idea that pregnant peers experienced contraceptive failure in spite of precautions. Given the novelty of exploring the relation between belief in a just world and pregnancy stigmatization, these findings, although only marginally significant, are noteworthy and should be further explored in future studies.

The lack of significant findings relating perceived invulnerability to pregnancy with attitudes toward pregnant teens was contrary to our hypothesis. Consistent with previous research on college-aged samples (Burger & Burns, 1988; Whitley & Hern, 1991), we did find that high-school students believed that they were less likely to become pregnant than their peers, indicating that the lack of significant findings was due to a true absence of a relation between the variables of interest, rather than a lack of perceived invulnerability. It is important to note, however, that the perceived invulnerability to pregnancy measure is a relatively simple measure without well-established psychometric properties. Furthermore, we adapted the original version of this measure (Burger & Burns, 1988) for use in a high school sample. Nonetheless, a more sophisticated measure of general adolescent invulnerability (AIS; Duggan et al., 2000) was also unrelated to attitudes toward pregnant peers, yielding additional support for a lack of relation between invulnerability and attitudes.

We also found that female participants held less negative attitudes toward their pregnant peers when compared to male participants. Our results may be partially explained by previous research examining gender differences in judgments regard-

### TABLE 4

<table>
<thead>
<tr>
<th>Bivariate Correlations of the Study Variables</th>
</tr>
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<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>1. Attitudes toward pregnant teens</td>
</tr>
<tr>
<td>2. Parental education</td>
</tr>
<tr>
<td>3. Beliefs about contraception</td>
</tr>
<tr>
<td>4. Belief in a just world</td>
</tr>
<tr>
<td>5. Perceived invulnerability to pregnancy</td>
</tr>
<tr>
<td>6. General invulnerability</td>
</tr>
</tbody>
</table>

†p < .10. *p < .05. **p < .001. ***p < .001.

### TABLE 5

<table>
<thead>
<tr>
<th>Regression of Demographics, Attitudes Toward Contraception, Belief in a Just World, and Perceived Invulnerability to Pregnancy on Beliefs About Pregnant Peers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>------------------------------------</td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Parental education</td>
</tr>
<tr>
<td>Attitudes toward contraception</td>
</tr>
<tr>
<td>Belief in a just world</td>
</tr>
<tr>
<td>Perception of invulnerability to pregnancy</td>
</tr>
<tr>
<td>General invulnerability</td>
</tr>
</tbody>
</table>

Note. CI = confidence interval.
†p < .10. *p < .05. **p < .01. ***p < .001.
Factors Affecting Teens’ Attitudes

Kuckertz and McCabe

ing responsible sexual models. Fabes and Strouse (1987) asked men and women to name irresponsible and responsible sexual models and to explain why they were chosen as such. Fabes and Strouse categorized participants’ responses as based on either (a) underlying motives and intentions of the model or (b) sexual behavior and practices exhibited by the model. Men were more likely than women to explain sexual responsibility in terms of sexual behavior, which included reasons related to use of birth control and resulting pregnancies. Our study supports the idea that male participants, more than female participants, may form negative attitudes toward pregnant peers because male participants make judgments of pregnant peers based on a perceived failure to adequately use contraception or on pregnant peers’ general condition resulting from sexual activity, rather than on their original intentions related to sexual activity. Thus, female participants may less readily come to negative conclusions regarding pregnant peers.

This study has limitations. We created several of the measures used in this study and therefore these measures do not have established psychometric properties. Although we piloted our measures before administering them to the final sample of participants, our pilot sample was small and therefore we cannot be sure that all items on the measures we created were developmentally appropriate or understood correctly by participants. Future studies should examine the psychometric properties of these measures in greater detail.

Because not all students in the classrooms returned the informed consent forms required for study participation, another limitation of our study is that our sample may not be representative of all teens at the high school or at other high schools. Students who were responsible enough to remember to get their consent forms signed may also perceive themselves as more responsible in terms of sexual behavior and thus may have differing attitudes toward pregnant peers than students who did not return their consent forms. Also, our sample was restricted in terms of racial and socioeconomic diversity, making it difficult to analyze these variables. However, the consideration to examine race and socioeconomic status was outweighed by our goal of examining the attitudes of teens in a sample in which pregnancy stigmatization was likely to be highest (i.e., Caucasian, high socioeconomic status).

Despite its limitations, the current study contributes to an important area of research in which data is seriously deficient. Teens report that their peers are highly accepting of sexual activity, yet much less accepting of teen parenthood (Gallup-Black & Weitzman, 2004; Suellentrop et al., 2006). To our knowledge, our study is the first to attempt to explain the discrepancy in teens’ stigmatization of teen sexuality and teen pregnancy in terms of psychological factors. Some individuals might argue that stigmatization of pregnant teens is necessary to discourage teens from becoming pregnant. However, there is a difference between viewing teen pregnancy as a negative outcome and viewing the pregnant teen as inferior. It may be possible to inform teens of the risks inherent in sexual activity while promoting an empathic view of pregnant teens. Doing so may reduce the negative consequences associated with pregnancy stigmatization, thus improving outcomes for this at-risk group. If pregnant teens do not feel judged and stigmatized, they may be less likely to avoid school and peers out of shame. This point should especially be noted by health educators in the high school arena, who can foster a dual understanding (risks of sexual behavior versus empathy for pregnant teens) by integrating these discussions into their curriculum. Additionally, in their interactions with pregnant teens, educators must remain aware of and sensitive to the fact that these teens are likely feeling the effects of peer stigmatization in the classroom.

Our study represents an initial examination of factors that explain the discrepancy between teens’ stigmatization of pregnant versus sexually active peers. Researchers should attempt to replicate our results in racially and socioeconomically diverse samples in order to determine the extent to which predictors of negative attitudes toward pregnant teens are identical to or different from the current sample. We examined only several of a number of possible predictors of pregnancy stigmatization. However, future research should explore the impact that other factors, such as the media and popular television shows, might have on attitudes toward pregnant teens.

References


Factors Affecting Teens’ Attitudes | Kuckertz and McCabe


Author Note. Dr. McCabe is also affiliated with Child and Adolescent Services Research Center, Rady Children’s Hospital and Health Center, San Diego, CA.

Jennie M. Kuckertz | University of San Diego

Jennie Kuckertz graduated summa cum laude in 2010 from the University of San Diego (USD) with a BA in psychology and sociology. As an undergraduarte, Ms. Kuckertz was a founding co-president of the University of San Diego’s Psychology Journal Club and was inducted as a member of Phi Beta Kappa in 2010. She worked for 2 years as a research assistant with Dr. Nader Amir at the Center for Understanding and Treating Anxiety, where she assisted in several studies examining cognitive bias modification treatment for anxious individuals. During this time, Ms. Kuckertz had the opportunity to contribute to several published papers and conference presentations. Currently, she is a research associate at the University of Texas Health Science Center at San Antonio where she is doing diagnostic assessment of adolescents who have been previously hospitalized for emotional or behavioral disturbances. She hopes to pursue a graduate degree in clinical psychology.
Rape is a forced and nonconsensual act (Lyon, 2004) that involves the penetration of the anus or vagina by a penis, finger, or object, or the penetration of the mouth by a penis (McCabe & Wauchope, 2005). The purpose of this study was to understand if male rapists vary from other criminals in their perceptions of women and/or how their caregivers treated them. By investigating these perceptions and treatment, researchers can begin to understand what may occur during a rapist’s development. There is no research investigating both rapists’ rearing and perceptions of women; however, there is research concerning each individually. Exploring these two variables together can increase understanding of the influence experiences with caregivers may have on perceptions of women, laying the foundation for further understanding of rapists’ development.

Theoretical Rationale
There are three well-known theoretical models of sexual violence. The first, developed by Malamuth (2003), is the hierarchical meditational confluence model (HMC). The HMC model proposes that sexual aggression develops from an abusive home environment or predisposition to hostility. Experiencing abuse or parental violence can lead the child to develop antisocial behavior or engage in premature sexual experiences. Being prone to hostility can lead the child to develop narcissism, hostility toward women, sexual violence, and a general acceptance of violence against women.

The second model, created by Knight and Sims-Knight (2003), proposed that sexual aggression develops from sexual drive/preoccupation, antisocial behavior, and callousness/unemotionality. Knight and Sims-Knight’s model improved on the HMC model because of its clarification of early childhood experiences. In the model, physical or verbal abuse leads to antisocial behavior and callousness/unemotional responses, both of which lead to sexual coercion.

ABSTRACT. More researchers are investigating factors that lead people to rape, including factors involving perceptions of women or childhood experiences (e.g., Scott & Tetreault, 1987). Despite the fact that childhood experiences influence perceptions of women, there is no research on their relation. We hypothesized that rapists would report more negative parental interactions than other types of criminals. In a between subjects, quasi-experiment, convicted rapists and robbers completed the Attitudes Toward Women Scale (Spence, Helmreich, & Stapp, 1973), Measurement of Parental Style (Parker et al., 1997), and the Balanced Inventory of Desirable Responding (Paulhus, 1991). Rapists reported higher levels of abuse, indifference, and overcontrol than robbers, but there was no difference in attitudes toward women. Our results also revealed rapists had fewer sisters than robbers. Future research should focus on rapists’ family constellation as a whole.
Criminals’ Attitudes Toward Women and Parents | Meyer and Mitchell

The last model, developed by Ward and Beech (2008), is the Integrated Theory of Sexual Offending (ITSO). Ward and Beech argued the model is an improvement on the previous two models because it outlines a network of causal factors comprised of biological, ecological, and neuropsychological systems. The biological factors include genetics and evolutionary mechanisms. The ecological factors include social learning influences from cultural and personal experiences and the physical environment. The neuropsychological factors include motivation and emotion, behavioral controls, action selection, and perception and memory. In sum, the interaction of biological, ecological, and neuropsychological systems can lead to sexual offending.

The HMC (Malamuth, 2003), Knight and Sims-Knight (2003), and ITSO (Ward & Beech, 2008) models suggest that it is not just a single factor that influences a person to commit a sexual offense, such as rape, but several factors interacting. All of the models, however, include family experiences as potentially important factors in a person committing sexual offenses.

In addition to noting the importance of family experiences in committing sexual offenses, researchers have also theorized that perceptions of the environment are important factors in the decision to commit a sexual offense (e.g., Ward & Beech, 2008). Polaschek and Ward (2002) suggested five implicit theories to understand rape-supportive beliefs held by rapists. The implicit theories of Polaschek and Ward evolved from an analysis of scales and research involving attitudinal statements supported by rapists. All five theories are based on rapists’ early family environment, experiences with abuse and/or neglect as a child, social learning, and the attitudes and beliefs of prominent family members. The five implicit theories proposed by Polaschek and Ward are women are unknowable, women are sex objects, male sex drive is uncontrollable, entitlement, and dangerous world. Overall, Polaschek and Ward highlighted that rapists do not hold all of the theories but that the theories they do hold interact to direct information processing. For example, when a man perceives women as sex objects and believes the male sex drive is uncontrollable, he perceives the woman as responsible for the rape.

Polaschek and Gannon (2004) investigated how the five implicit theories developed by Polaschek and Ward (2002) fit with rapists’ accounts of their offenses. Polaschek and Gannon interviewed 37 men serving prison sentences for sexually violating or attempting to sexually violate a person over 16 years of age. The interview focused on the offenders’ background pre-offense, details leading to the offense, the offense itself, and the offenders’ reactions after the offense. Polaschek and Gannon’s results confirmed all five implicit theories, serving as support for and an extension of Polaschek and Ward. Three of the theories were seen in the majority of rapists’ accounts: women are unknowable (65%), women are sex objects (70%), and entitlement (68%). However, the most prevalent finding was how the offenders described women as both malevolent and unpredictable. As a result, Polaschek and Gannon changed the name women are unknowable to women are dangerous to reflect those two elements. Polaschek and Gannon also supported the importance of perceptions of women in rapists’ decision-making.

Based on theories regarding family history (e.g., Ward & Beech, 2008) and rapists’ perceptions (e.g., Polaschek & Ward, 2002; Ward & Beech, 2008), it seems likely that both family history and perceptions of women would influence a rapist’s behavior. There is little research on this possibility, however, with most research focusing on one of the two issues instead of both. Therefore, in the current study, we investigated perceptions of women and parental rearing to test the possibility of a relation between the two.

Family Background
Researchers have investigated the family as a variable in criminals’ development to understand the role of family dynamics in criminal behavior. Bard et al. (1987) collected descriptive statistics from 184 men classified as sexually dangerous and incarcerated in a correctional/mental health facility specializing in the treatment of sexual offenders. The researchers collected data regarding family history, child/juvenile behavioral problems, adult incompetence (psychological or criminal problems in adulthood), frequency of criminal offenses, and clinical symptom variables. They were specifically interested in comparing the frequency of certain characteristics among men convicted of rape and men convicted of child molestation. They found that more child molesters than rapists came from families in which the parents were married throughout the participant’s childhood. However, over half of the child molesters were victims of sexual assault compared to a quarter of the rapists. In the overall sample, the majority of sex offenders
Their findings suggested that rapists may have experienced more negative family histories. His sample consisted of 44 serial rapists and 20 serial robbers selected from 10 prisons. More rapists reported regular parental violence directed at them as children, which played a major role in distinguishing between the two groups.

Bard et al. (1987) and Leonard (1993) both suggested the importance of family dynamics in child development and the effects on children who become criminals, consistent with the theoretical models of rapist development (i.e., Knight & Sims-Knight, 2003; Malamuth, 2003; Ward & Beech, 2008). Although general family dynamics are likely to be important in the development of criminal behavior, attention has begun to shift to relationships between criminals and their caregivers. Giotakos, Vaidakis, Markianos, Spandoni, and Christodoulou (2004) investigated potential differences among rapists, child molesters, and noncriminal controls on several measures of personality, including the commonly used Measurement of Parental Style (MOPS; Parker et al., 1997). Giotakos et al. found that rapists revealed a higher level of abuse from the father, whereas child molesters revealed a higher level of abuse from the mother. Their findings suggested that rapists may experience different parenting styles from their caregivers than other groups.

Lisak and Roth (1990) conducted a study of perceptions of parental relationships with a sample of undergraduate men, half of whom were incarcerated, but self-reported rapists and half of whom were a control group of nonsexually aggressive men. They gave both groups a series of standardized tests to investigate potential differences. When asked about parental relationships, rapists expressed negative feelings about their fathers and ambivalent feelings about their mothers. However, rapists also had higher scores on the Underlying Anger-Hurt Scale (Lisak & Roth, 1988), suggesting that they believed they had been wronged by women in some way in their lives. Finally, Lisak and Roth (1990) found that rapists’ perceptions of their mothers generalized to all women. Specifically, rapists felt entrapped by their mothers because their fathers were not present to help them develop a stable male identity. Because of this entrapment, Lisak and Roth (1990) suggested rapists may develop the attitude that all women are potential enemies, which is consistent with the implicit theory that women are dangerous (Polaschek & Gannon, 2004).

Giotakos et al. (2004) revealed the importance of gathering more information on parental relationships. Previous research has shown that childhood family dynamics can lead to adult behavior patterns. For example, when a child is reared in a home where the mother has psychological problems and the father has a criminal history, the child is more likely to be sexually abused; end up institutionalized as a juvenile; and develop expressive aggression, unsocialized aggression, and sadism in adulthood (Knight, 1999). However, the Giotakos et al. study investigated only sexually offending criminals compared to noncriminal controls. It is important to gather more information on parental relationships within different types of crime in order to determine if the differences found by Giotakos et al. exist only between criminals and noncriminals or if they also exist between sexual offenders specifically and other types of criminals.

### Attitudes Toward Women

In addition to studying perceptions of parental relationships, some researchers have investigated attitudes toward women. Scott and Tetreault (1987) investigated rapists’ attitudes toward women by studying the attitudes of 60 people—20 convicted of rape, 20 convicted of violent nonsex crimes, and a control group of 20 never convicted of a crime. They hypothesized that the rapist group would...
have more conservative views of women, especially regarding sexual behavior, than the other groups. Scott and Tetreault measured the participants’ beliefs about the rights and roles of women in contemporary society with the 25-item Attitudes Toward Women Scale (AWS) created by Spence, Helmreich, and Stapp (1973). Scott and Tetreault found that there was a significant difference in attitudes toward women’s vocational, educational, and intellectual roles; freedom and independence; dating, courtship, and etiquette; drinking, swearing, and dirty jokes; and sexual behavior. The rapists believed women should stay in the home, allow men to take the initiative in relationships and sexual activity, and refrain from drinking and swearing. Scott and Tetreault’s study suggested that rapists perceive women conservatively, which we explored in the current study. These findings relate to Polaschek and Ward’s research (2002), particularly the implicit theory of entitlement, which proposes that rapists feel the need to control the behavior of women.

Harmon, Owens, and Dewey (1995), however, found that rapists were no more conservative than noncriminal controls. They conducted a study of 20 rapists, 21 nonrapist criminals (mostly murderers), and 30 noncriminal controls using a shortened, Anglicized version of AWS (Spence et al., 1973). Overall, the nonrapist criminals had the most conservative attitudes toward women, with no significant difference between the rapists and the noncriminal controls. Harmon et al. suggested that their findings may have contradicted the findings of Scott and Tetreault (1987) due to either differences in the ethnic background of the samples or differences in the nonrapist criminals. The majority of Harmon et al.’s nonrapist criminals were men who had murdered women, whereas Scott and Tetreault’s nonrapist criminals were violent criminals, but had not committed crimes against women.

We combined these areas of research to investigate whether rapists differed from other criminals in their family history (parental rearing), perceptions of women, and family constellation. Based on previous research (e.g., Leonard, 1993), we chose robbers as a comparison group. Robbers were the control group in order to increase the comparison between this study and others because the majority of previous literature has used robbers as the control group for rapists. Participants completed the Attitudes Toward Women Scale (AWS; Spence et al., 1973), Measurement of Parental Style (MOPS; Parker et al., 1997), and Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1991), as well as a demographic questionnaire. These measures provided perceptions of women (AWS), parental rearing (MOPS), socially desirable responding (BIDR) and family constellation (demographics), the dependent variables of interest.

Based on Leonard (1993) and Bard et al. (1987), our first hypothesis was that the rapist group would have higher Mother Abuse and Father Abuse scores on the MOPS than robbers, indicating a greater perception of parental abuse. Based on Lisak and Roth (1990), our second hypothesis was that the rapist group would have higher Mother Overcontrolling scores on the MOPS than robbers, suggesting a greater perception of their mothers as overcontrolling.

Due to the conflicting literature on attitudes toward women, we did not make specific predictions regarding the results of the AWS. Based on Polaschek and Gannon (2004) and Scott and Tetreault (1987), we expected rapists in the current study to show more conservative attitudes toward women compared to robbers; based on Harmon et al. (1995), however, we expected robbers to show more conservative attitudes toward women than rapists. For that reason, we examined the possibility that parental styles would differ in their attitudes toward women. We also explored the possibility that parental styles would be related to attitudes toward women, given that childhood experiences should lead to adult behavior (e.g., Ward & Beech, 2008). Although previous research has not examined parental styles and attitudes toward women together, we expected to see that parental styles and attitudes toward women were related.

Based on Bard et al. (1987), we also decided to explore the potential differences in the number of participants’ brothers and sisters. Because Bard et al. made comparisons only among different types of sexual offenders, we made no specific predictions regarding differences between our two groups.

Method

Participants

The educational director at a State Correctional Institute (SCI) located in Pennsylvania recruited convicted prisoners (N = 63) to participate. No incentives were provided for participation. The participants included 19 men convicted of rape and 44 men convicted of robbery. Of the 19 men
The MOPS contains 30 statements about the participants’ parental rearing experiences for their first 16 years of life (Parker et al., 1997). Participants rate both the mother and father on the same 15 characteristics. An example statement is, “Overprotective of me.” The MOPS measures Indifference, Abuse, and Overcontrol categories.

Participants also completed the Opinion Survey (BIDR), which consisted of 40 statements measuring self-deceptive positivity and impression management (Paulhus, 1991). A person who honestly believes his or her positive claims shows self-deceptive positivity, whereas a person who over-exaggerates how often he or she executes desirable behaviors displays impression management. One statement, for example, is, “I have never damaged a library book or store merchandise without reporting it.” Paulhus (1991) reported the BIDR shows acceptable reliability ($\alpha = .83$) and concurrent validity with the Marlowe-Crowne ($\alpha = .71$); it also shows concurrent validity with the Multidimensional Social Desirability Inventory ($\alpha = .80$; Jacobson, Kellogg, Cauce, & Slavin, 1977). Kroner and Weekes (1996) further found that the BIDR was appropriate for use with offender samples.

Participants also completed a demographic scale, including their race, age, childhood home (indicated as urban or rural), and how many siblings they had (if any). They also provided details about their criminal history, including the crime(s) for which they were convicted; the sex, age, and race of the crime victim (if there was one); and their relationship to the victim.

Procedure

**Institutional Review Board approval.** IRB approval was sought from the University IRB. After a full board review, we received approval to complete the project with the Department of Corrections. In addition to obtaining IRB approval, researchers working with the Pennsylvania Department of Corrections must obtain approval from the Pennsylvania Department of Corrections prior to conducting their research. Due to Pennsylvania Department of Corrections protocols, we did not administer the study to participants. Instead, the educational director and teachers employed by the SCI where we gathered our sample administered the study. We established the following procedure in order to follow the research protocols of the Pennsylvania Department of Corrections.

**Participant procedure.** The educational director and/or teachers asked prisoners meeting the study requirements (convicted rapists and robbers) to participate. The administrator informed participants that this study was investigating their perception of women and parental rearing experiences and that they would be given a packet of surveys to complete. Prisoners who agreed to participate...
Criminals’ Attitudes Toward Women and Parents | Meyer and Mitchell

completed the surveys individually.

The administrator provided participants with a consent form, which the administrator collected before any surveys were provided. Participants took an average of 15 to 30 min to complete the surveys. After completing the last survey, participants read the debriefing statement included in the packet. Participants’ individual packets were folded, inserted, and sealed in individual white letter envelopes in order to maintain anonymity. The administrator thanked and dismissed the participants.

Results

Because this study was based on self-report, we first examined if there were differences between our groups in levels of desirable responding. The results of the study would be confounded if one group was more likely to show desirable responding than the other group. Therefore, we examined differences in both self-deceptive positivity and impression management between rapists and robbers. To determine the appropriateness of an ANOVA or a MANOVA, we correlated the two BIDR subscales, self-deceptive positivity and impression management. Because the two subscales were significantly correlated, r(63) = .58, p < .001, we conducted a MANOVA to investigate differences between rapists and robbers on self-deceptive positivity and impression management. There was no significant difference between rapists and robbers at the multivariate level, F(2, 60) = 0.18, p = .84, \( \bar{\chi}^2 = .006 \), in desirable responding.

Preliminary Analyses

Each of our measures consisted of subscales. To determine the appropriateness of a MANOVA or a series of ANOVAs on those subscales, we conducted correlational analyses for each measure. The AWS subscales (indifference, overcontrolling, and abuse for both mother and father) were correlated to determine if they were interrelated, some of which were (see Table 1). The six subscales of the AWS were correlated to examine if they were interrelated; these subscales were also correlated, some positively and some negatively (see Table 2).

MANCOVAs

MOPS. To test the hypotheses that rapists would have higher Mother Abuse and Father Abuse scores, indicating a greater perception of parental abuse, and higher Mother Overcontrolling scores, suggesting a greater perception of their mothers as overcontrolling, we conducted an analysis with crime type as the independent variable and the MOPS subscales as the dependent variables. Because self-deceptive positivity was correlated with some of the MOPS subscales, we conducted a MANCOVA to determine if crime type was related to parental style, using self-deceptive positivity scores as a covariate. Self-deceptive positivity was not a significant covariate, \( F(6, 55) = 1.47, p = .21, \bar{\chi}^2 = .14 \). Crime type was significant at the multivariate level, \( F(6, 55) = 3.47, p = .006, \bar{\chi}^2 = .28 \). To understand the multivariate effect of crime type on parental styles, we conducted univariate tests for each subscale of the MOPS. The univariate tests showed that crime type was significant for the expressed parental styles of mother indifference, \( F(1, 60) = 8.03, p = .006, \bar{\chi}^2 = .12 \); mother abuse, \( F(1, 60) = 8.22, p = .006, \bar{\chi}^2 = .12 \); mother overcontrolling, \( F(1, 60) = 7.00, p = .01, \bar{\chi}^2 = .10 \); father indifference, \( F(1, 60) = 5.27, p = .02, \bar{\chi}^2 = .08 \); father abuse, \( F(1, 60) = 11.62, p = .001, \bar{\chi}^2 = .16 \); and father overcontrolling, \( F(1, 60) = 13.77, p = .001, \bar{\chi}^2 = .19 \). These tests showed that rapists were more likely than robbers to portray their mothers as more indifferent (\( M = 4.37, SD = 5.05 \) and \( M = 1.41, SD = 3.00 \), respectively), abusive (\( M = 3.26, SD = 4.59 \) and \( M = 0.91, SD = 1.80 \)), and overcontrolling (\( M = 4.26, SD = 2.66 \) and \( M = 2.45, SD = 2.34 \)) toward them. Rapists were also more likely than robbers to portray their fathers as more indifferent (\( M = 5.26, SD = 4.36 \) and \( M = 2.25, SD = 4.70 \)), abusive (\( M = 3.73, SD = 5.05 \) and \( M = 0.82, SD = 1.60 \)), and overcontrolling (\( M = 3.90, SD = 3.31 \) and \( M = 1.48, SD = 1.74 \)) toward them.

AWS. To explore differences between rapists and robbers in attitudes toward women, we conducted an analysis with crime type as the independent variable and the six subscales of the AWS as the dependent variables. Because self-deceptive positivity was correlated with some of the subscales of the AWS, we conducted a MANCOVA, using self-deceptive positivity scores as a covariate. There was no significant influence of crime type at the multivariate level, \( F(7, 54) = 0.65, p = .71, \bar{\chi}^2 = .08 \). There was, however, a significant influence of self-deceptive positivity on perceptions of women, \( F(7, 54) = 2.76, p = .02, \bar{\chi}^2 = .26 \). To understand the multivariate effect of self-deceptive positivity on attitudes toward women, univariate tests were conducted for each subscale of the AWS. They showed that self-deceptive positivity influenced the AWS total score, \( F(1, 63) = 5.91, p = .02, \bar{\chi}^2 = .09 \),
and the Drinking/Swearing/Dirty Jokes Subscale, \( F(1, 63) = 3.99, p = .05, \chi^2 = .06. \) Based on the correlation between self-deceptive positivity and the AWS total score, \( r(63) = -.30, p = .01, \) and Drinking, Swearing, and Dirty Jokes (Subscale 4), \( r(63) = -.25, p = .05, \) as self-deceptive positivity increased, reported attitudes toward women became more liberal, particularly with regard to their rights to drink, swear, and tell dirty jokes.

**MOPS and AWS**

To explore the possibility that parental styles were related to attitudes toward women, we conducted a correlational analysis of the subscales for the MOPS and AWS. Mother overcontrol was significantly correlated with Women’s Marital Obligations (Subscale 6), \( r(63) = .29, p = .03. \) There were no other significant correlations.

**Family Background**

We conducted additional analyses to determine if rapists and robbers differed on certain family background variables. A chi-square analysis showed that a greater percentage of robbers (82%) were reared in an urban environment than rapists (58%), \( \chi^2(1) = 4.01, p = .05. \) A t test, \( t(61) = 2.79, p = .002, \) further revealed that rapists were reared with fewer sisters than robbers (\( M = 1.00, SD = 1.29 \) and \( M = 2.39, SD = 2.05 \), respectively), although there was no significant difference in the number of brothers, \( t(61) = 0.19, p = .85. \) Despite the smaller number of sisters for rapists, there was also no significant difference, \( t(61) = 1.69, p = .10, \) in the overall number of siblings for rapists (\( M = 2.84 \) and robbers (\( M = 4.34 \)).

**Discussion**

Based on previous research, we had two hypotheses based on perceptions of experiences with caregivers. The first hypothesis was that rapists would be more inclined than robbers to report higher levels of abuse from their mothers or fathers. The second hypothesis was that rapists would be more inclined than robbers to report higher levels of overcontrolling from their mothers. The results confirmed both of these hypotheses. Rapists rated their mothers as significantly more overcontrolling and both parents as more abusive than did robbers.

We also examined the issue of differences in attitudes toward women. We found no differences in perceptions of women between rapists and robbers. We also examined the potential relation between parental styles and attitudes toward women. Interestingly, we found only one relation; reported levels of mother overcontrol were related to more liberal views of women’s marital obligations. Additionally, we found that rapists had fewer sisters than robbers.

Our research is consistent with previous findings on rapists’ perceptions of parental rearing. The results are consistent with Lisak and Roth’s research (1990), which showed that rapists viewed their fathers negatively and held ambivalent feel-

<table>
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<tr>
<th>TABLE 1</th>
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<td>Correlations for Measurement of Parental Style (MOPS)</td>
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<tr>
<td>1. Mother Indifference</td>
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<td>2. Mother Abuse</td>
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<td>3. Mother Overcontrol</td>
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<td>4. Father Indifference</td>
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<td>5. Father Abuse</td>
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<td>6. Father Overcontrol</td>
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Note. \( N = 63; \) * \( p < .05, \) ** \( p < .01; \) *** \( p < .001. \)

<table>
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<th>TABLE 2</th>
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<td>Correlations for Attitudes Toward Women Scale (AWS)</td>
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<td>1. AWS Total</td>
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<td>2. Vocat. Subscale</td>
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<td>3. Freedom Subscale</td>
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<td>4. Dating Subscale</td>
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<tr>
<td>5. Drinking Subscale</td>
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<td>6. Sex Subscale</td>
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<td>7. Marital Subscale</td>
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</table>

Note. \( N = 63; \) Vocat. = Vocational. * \( p < .05, \) ** \( p < .01, \) *** \( p < .001. \)
Criminals’ Attitudes Toward Women and Parents

Nations toward their mothers. Rapists in our study not only perceived their fathers negatively, but also perceived their mothers negatively. Some ambivalence, however, may be seen in the fact the effect sizes for the father overcontrol and father abuse scale analyses were larger than the effect sizes for the mother overcontrol, abuse, and indifference scale analyses. Larger effect sizes for father overcontrol suggest that, at least, reported differences in parental styles were greater when considering the fathers. Lastly, the findings are consistent with both Leonard (1993) and Bard et al. (1987) because both found that rapists reported being abused more than their control groups.

Interestingly, rapists rated each parent higher on all three parental styles than robbers, which suggests two possibilities. First, the higher ratings could suggest that rapists truly experience a greater deal of abuse, indifference, and overcontrol from parents. However, the higher ratings could also suggest that rapists, due to being prone to hostility as proposed in the HMC model (Malamuth, 2003), perceive greater persecution from others. As explained in the HMC model, a proneness to hostility can lead to narcissism. The rapists’ perception of greater persecution could be a factor in the decision to rape, as could tendencies toward narcissism. Future research should explore the possibility that rapists feel persecuted by others, have higher levels of narcissism, and/or are both physically and emotionally abused. This research, however, also showed that rapists may differ in the quality of their interactions with their fathers, suggesting that future research should continue to investigate perceptions of both the mother and the father.

Although our results regarding parental style are consistent with previous literature, the literature is less clear for the results on attitudes toward women. Our results contradict the findings of Scott and Tetreault (1987), who found that rapists were more conservative in their attitudes toward women, especially on sexual behavior, than other violent, but not sex-related, offenders. Rapists’ attitudes toward women may also be inconsistent with Polaschek and Gannon (2004), who found that rapists held general implicit theories that they were entitled to treat women however they pleased (a conservative view). However, the results are consistent with the Harmon et al. (1995) findings that showed no differences between rapists and noncriminal controls, but that murderers were more conservative than both of those groups.

Harmon et al. suggested that their results may have contradicted Scott and Tetreault’s due to differences in ethnicity (Harmon et al.’s sample was all White) or differences in the victim genders (Harmon et al.’s nonrapist but criminal sample had largely murdered women) between the samples. Our results suggest that the contradiction is not due to differences in ethnicity. Although our robber group was comparable to Scott and Tetreault’s groups in overall ethnicity, we failed to replicate their findings based on race, suggesting that it is not race alone that led to their rapists showing such conservative attitudes. We do not know the gender of the victims in the Scott and Tetreault study, but, comparing participants who chose female victims to participants who chose male victims in our sample, we also failed to find any significant differences. Our finding is also consistent with other research, such as Epps, Haworth, and Swaffer (1993), who found that there were no differences between adolescent sexual offenders and adolescent nonsexual offenders on the AWS.

The inconsistency in the literature may suggest that rapists are not influenced by attitudes toward women in general as much as victim-specific attitudes. Future research should continue pursuing the issue of victim specific versus general attitudes.

Interestingly, we found only one significant relation between parental styles and attitudes toward women—as the reported level of mother overcontrolling increased, so did the liberalism of attitudes toward women’s marital obligations. Increased liberalism suggests that, as the level of a mother’s (over)control increases, so do perceptions of what women can do within a marriage. The lack of significant correlations, however, raises the question of the role of general attitudes in rapists’ decision-making, as do our findings that rapists and robbers do not differ in general attitudes toward women.

We also found that rapists had significantly fewer sisters than robbers, but no difference in the number of brothers. Although rapists having fewer sisters than robbers may appear inconsistent with Bard et al.’s (1987) findings, it is worth noting that Bard et al. did not provide a comparison group outside of sexual offenders (child molesters and rapists were the groups).

Our findings also suggest an interesting possibility in family dynamics. Perhaps, due to having fewer female influences in the family, rapists fail to learn appropriate methods of interacting with other women. Less interaction with females would
appear consistent with Leonard’s (1993) argument that family interaction deficits contribute to rape. Further, if rapists truly experience abuse from both parents, it is possible that they witness the abuse of the few females in their lives as well, which could further contribute to family interaction deficits. Therefore, researchers should not only concentrate on parents, but also on siblings as well in understanding the family dynamics that occur during rapists’ childhoods.

There were a few limitations in this study. One limitation is that we had to rely exclusively on self-report in measuring attitudes toward women and perceptions of parental rearing. To address concerns about the honesty of participants, we included the BIDR (Paulhus, 1991), which is reliable for use in forensic populations (Kroner & Weekes, 1996). There were no significant differences between our groups in the level of desirable responding, which provided some indication that socially desirable responding—if it occurred—was at least equivalent between the groups.

Secondly, we were unable to directly administer the study due to research protocols set by the SCI at which we collected the data. Many of the surveys had to be discarded due to incomplete data; the loss of data may have occurred because the administrators of the study themselves were unfamiliar with the questionnaires. Related to data collection, the number of participants was low, ostensibly because of participant apprehension over how the information was going to be used. Participant apprehension raises two concerns. First, there may be generalizability issues, as participants who completed the study fully may have been more educated or had less evaluation apprehension than participants who did not complete the study. Second, the low sample size also reduces the power of our statistical analyses, particularly given the need for a multivariate analysis.

Finally, we were unable to match participants in each group on the variable of race. Given that the Scott and Tetreault (1987) and Harmon et al. (1995) samples differed based on race and had conflicting results, we would have liked to be able to examine this inconsistency in more detail. However, analyses based simply on race showed that the conflicting literature is likely not due strictly to racial differences.

Despite these limitations, this study has the possibility of influencing sex offender treatment programs in prisons, parenting programs, and future research on rapists’ perception of women and parental rearing. This study has shown that the rapist’s family constellation is important and that research should not focus solely on the mother. It has also shown that the focus on context-specific characteristics, such as perceptions of the victim, versus general characteristics, such as attitudes toward women, may be important.

Our findings may be helpful in improving current offender treatment programs. At the Pennsylvania SCI where this study was administered, for example, there is an evidence-based cognitive-behavioral model of treatment, which uses a group-only format, as well as a points system (Commonwealth of Pennsylvania, n.d.). Participants must accumulate a percentage of the total possible points to successfully graduate from the program. The participants obtain points by attending group meetings, participating during group, and completing homework assignments. One part of the group includes addressing the client’s history of abuse. In this part of the treatment, efforts could be made to include not only consideration of abuse experienced from one parent, but from both parents, as well as dynamics with any female siblings.

The current study may also influence parenting programs. Our results showed that parenting styles differed between rapists and robbers. Assuming these differences are based on actual experiences and not narcissism, one avenue to reduce sexual offenses may be to work with parenting programs, perhaps by combining some element of existing sexual violence prevention programs. College campuses or prisons hold most of the common sexual violence prevention programs (Holcomb, 2010). Our research has shown the potential importance of parenting styles in the development of a rapist; it is possible that sexual violence prevention training could be integrated into parenting programs. These programs could help parents reduce overcontrol, abuse, and indifference, as well as educate parents about sexual violence. The outcome of this type of program could be a reduction in sexual violence.

Our research has some practical applications, although the findings are in need of replication. In addition to suggesting avenues for future research on general versus context specific differences in rapists, the accuracy of perceptions of parental rearing, and family constellation, focusing on parental rearing and family constellation may help to improve sexual offender treatment programs. The improvement of sexual offender treatment programs is crucial in decreasing the rate of recidi-
Criminals’ Attitudes Toward Women and Parents

vis among rapists, which will increase societal safety and the odds of successful reintegration of sexual offenders upon release. If research on parenting programs to address parental styles and rape could be developed, it has the potential to reduce the amount of sexual violence by reducing the number of first-time offenders as well.

References


Author Notes. Courtney A. Meyer is now at Department of Psychology, Roger Williams University.

This study relies on a revised version of the AWS (Spence, 1973), written at the third grade level. For a copy of the revised version of the AWS, please contact the second author at tmitchel@lhup.edu.

Correspondence concerning this article should be addressed to Tara L. Mitchell, Department of Psychology, Lock Haven University, Lock Haven, PA 17745. Email: tmitchel@lhup.edu
My Advice for Student Authors

1. Strip your manuscript of any identifying information (e.g., title page, Method section, author note) so that I can send it out for blind review. Blind review ensures that reviewers treat all manuscripts equally, because there are no clues about the author or the author’s school.

2. Follow APA style as closely as possible. Despite having used APA style for more than three decades, I still keep my APA manual within arm’s reach when I write. It is a reference book, so it is not surprising if you don’t remember it all! We have a presubmission checklist available on our website that focuses on APA style issues. You and your faculty mentor can bypass the need for a checklist simply by assuring that you have meticulously followed APA style guidelines. Beginning June 1, 2010, all manuscripts follow the 6th edition of the APA style manual.

3. Your research project was based on previous research. For that reason, it is important to stress your new and original contribution to the psychological literature. Publishing a replication of a study that is already in the literature is typically not a good use of journal space, so it is your “job” to sell the reader on the new aspects of your research.

4. If you receive a rejection letter, it will probably disappoint you. However, after your initial disappointment, reread the letter carefully. Determine whether the letter gives you encouragement to revise and resubmit your manuscript. Pay attention to what the editor and reviewers are asking you to do before you resubmit the manuscript. How well and how completely you respond to these prompts will go a long way toward determining whether your revised manuscript is likely to be accepted.

My Advice for Faculty Mentors

1. According to the submission guidelines, the “mentor affirms that it is high-level work.” Thus, it is not likely to be the case that faculty members should encourage all of their students to submit their manuscripts to the Psi Chi Journal of Undergraduate Research. However, I do hope that you will encourage your students with good research projects to submit them to the Psi Chi Journal. Please especially attend to APA style to make the reviewers’ and editor’s jobs easier. It is important to keep the submissions flowing in order to create a high-quality journal.

2. Faculty mentors must walk a tightrope with sponsoring submissions to the Psi Chi Journal. On one hand, in sponsoring the paper, they must attest “that the planning, execution, and writing of the manuscript represent primarily the work of the undergraduate student.” However, the submission guidelines also ask mentors to attest that they have “read and critiqued the manuscript on content, method, APA style, grammar, and overall presentation,” and faculty mentors are eligible for authorship credit on the paper. Thus, I encourage faculty to do their best job of editing the manuscript before the student submits it. As psychologists, we know how important external factors such as grammar, writing style, and adherence to APA format can be in establishing a reviewer’s “feel” for a submission.

3. Include your e-mail address so that I can send you a copy of the decision letter, reviews, and marked manuscript. Some of your most important mentoring may come in helping your student interpret a letter of rejection—there are likely to be important cues regarding resubmission that students might miss if they simply fixate on the rejection message.
PSI CHI AWARDS
Psi Chi sponsors a variety of award competitions each year. Listed below is a brief overview. For more information, please visit www.psichi.org/Awards/

### Graduate/Undergraduate Research Awards

<table>
<thead>
<tr>
<th>Award Name</th>
<th>Submission Deadline</th>
<th>Who Can Apply?</th>
<th>Award Amount / Prize</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Research Awards</td>
<td>Deadlines Vary, Fall/Winter</td>
<td>- Graduate</td>
<td>• $300 each (number varies)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Undergraduate</td>
<td></td>
</tr>
<tr>
<td>Society Annual Convention Research Awards</td>
<td>December 1</td>
<td>- Graduate</td>
<td>• $500 graduate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Undergraduate</td>
<td>• $300 undergraduate</td>
</tr>
<tr>
<td>Bandura Graduate Research Award</td>
<td>February 1</td>
<td>- Graduate</td>
<td>• Travel expense to APS</td>
</tr>
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<td>• Plaque</td>
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<td></td>
<td></td>
<td></td>
<td>• 3yr APS membership</td>
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<tr>
<td>Newman Graduate Research Award</td>
<td>February 1</td>
<td>- Graduate</td>
<td>• Travel expense to APA</td>
</tr>
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<td></td>
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<td>• Plaque</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• 3yr journal subscription</td>
</tr>
<tr>
<td>Allyn &amp; Bacon Psychology Awards</td>
<td>May 1</td>
<td>- Undergraduate</td>
<td>• 1st place—$1,000</td>
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<td></td>
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<td>• 2nd place—$650</td>
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<tr>
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<td>• 3rd place—$350</td>
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<td>Guilford Undergraduate Research Awards</td>
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<td>- Undergraduate</td>
<td>• 1st place—$1,000</td>
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<td>• 2nd place—$650</td>
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<td></td>
<td>• 3rd place—$350</td>
</tr>
<tr>
<td>Diversity Article Awards</td>
<td>July 1</td>
<td>- Graduate</td>
<td>Four $300 awards</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Undergraduate</td>
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</table>

### Chapter and Advisor Awards

<table>
<thead>
<tr>
<th>Award Name</th>
<th>Submission Deadline</th>
<th>Who Can Apply?</th>
<th>Award Amount / Prize</th>
</tr>
</thead>
<tbody>
<tr>
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<td>December 1</td>
<td>- Faculty Advisor</td>
<td>• Travel expense to APA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(chapter nomination)</td>
<td>• Plaque</td>
</tr>
<tr>
<td>Regional Chapter Awards</td>
<td>December 1</td>
<td>- Chapter</td>
<td>Six $500 awards</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Plaque</td>
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<td>Regional Faculty Advisor Awards</td>
<td>December 1</td>
<td>- Faculty Advisor</td>
<td>- Six $500 awards</td>
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<td></td>
<td>(chapter nomination)</td>
<td>- Plaque</td>
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<td>Cousins Chapter Award</td>
<td>February 1</td>
<td>- Chapter</td>
<td>One $3,500 award</td>
</tr>
<tr>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Plaque</td>
</tr>
<tr>
<td>Kay Wilson Leadership Award</td>
<td>April 1</td>
<td>- Chapter President</td>
<td>One $500 award</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(chapter nomination)</td>
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<td></td>
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<tr>
<td>Model Chapter Awards</td>
<td>June 30</td>
<td>- Chapters</td>
<td>$100 each chapter</td>
</tr>
</tbody>
</table>
RESEARCH AWARDS

Regional Research Awards | Deadlines Vary
All Psi Chi members (undergraduate and graduate) are eligible to submit their research for the Regional Research Awards. Up to 78 cash awards of $300 each are presented to students submitting the best research papers to Psi Chi sessions at regional conventions. Award monies are distributed at the conventions following the presentations. Deadlines for submissions vary according to region and sometimes from year to year; check the Psi Chi website for details.

Society Annual Convention Research Awards | Dec 1
All Psi Chi members (undergraduate and graduate) are eligible to submit their research for the Society Convention Research Awards. Cash awards of $300 for undergraduates and $500 for graduates are presented to students submitting the best research for Psi Chi sessions at the APA and APS national conventions. Up to 8 awards are given: 4 for the APA Convention and 4 for the APS Convention. Award monies are distributed at the conventions following the presentations.

Bandura Award | Feb 1
All psychology graduate students who are Psi Chi members and graduate student affiliates of the Association for Psychological Science (APS) are eligible to submit their research for the Albert Bandura Graduate Research Award. The winner receives the following: (1) travel expenses to attend the APS National Convention to receive the award, (2) a three-year membership in APS, including subscriptions to all APS journals, and (3) two engraved plaques, one for the winner and one for the winner’s psychology department as a permanent honor to the winner. This award is presented during the APS opening ceremony at the APS National Convention.

Newman Award | Feb 1
All psychology graduate students are eligible to submit their research for the Edwin B. Newman Graduate Research Award. The winner receives the following: (1) travel expenses to attend the APA/Psi Chi Society Convention to receive the award, (2) a three-year membership in APS, including subscriptions to all APS journals, and (3) two engraved plaques, one for the winner and one for the winner’s psychology department as a permanent honor to the winner. This award is presented during the APA/APF Awards ceremony at the annual APA/Psi Chi Society Convention in August.

Allyn & Bacon Awards | May 1
The Allyn & Bacon Psychology Awards, cosponsored by Allyn & Bacon Publishers, are open to all undergraduate Psi Chi members and are awarded to those who submit the best overall empirical research papers. The awards are $1,000 for first place, $650 for second place, and $350 for third place.

Guilford Awards | May 1
All Psi Chi undergraduate members are eligible to submit their research for the J. P. Guilford Under-graduate Research Awards. Cash awards are $1,000 for first place, $650 for second place, and $350 for third place.

Diversity Article Awards | July 1
Four awards of $300 each are available for the best Eye on Psi Chi articles published by student authors on diversity issues, including but not limited to ethnic minority, GLBT, gender, and physical disability. The submission cannot contain faculty primary authors or coauthors. Both graduate and undergraduate Psi Chi members are eligible for the award.

CHAPTER AND ADVISOR AWARDS

Denmark Award | Dec 1
The Florence L. Denmark Faculty Advisor Award is presented annually to the one Psi Chi faculty advisor who best achieves Psi Chi’s purpose. The award includes (1) travel expenses to attend the APA/Psi Chi Society Annual Convention to receive the award and (2) an engraved plaque. The award is intended to recognize Psi Chi faculty advisors for their outstanding service to the chapter and to Psi Chi.

Regional Chapter Awards | Dec 1
The Regional Chapter Awards provide annual recognition for one chapter in each region that best achieves Psi Chi’s purpose. Each winning chapter receives a check for $500 and a plaque to display in the winning chapter’s department. The awards are intended to perpetuate the chapters, to identify chapters as role models for others, and to promote the purposes of Psi Chi.

Regional Faculty Advisor Awards | Dec 1
This award is presented annually to one Psi Chi faculty advisor from each region who best achieves Psi Chi’s purpose. The award is to recognize and reward actively involved chapter advisors. The winning faculty advisor from each region will receive $500 and a plaque.

Kay Wilson Leadership Award | April 1
The Kay Wilson Leadership Award for Outstanding Chapter Presidents is presented annually to the one chapter president who demonstrates excellence in leadership of the local chapter. The winning Psi Chi chapter officer receives: (1) a $500 cash award, (2) travel expenses for the chapter president to attend and make a short presentation at the APA/Psi Chi Society Annual Convention to receive the award, and (3) an engraved plaque commemorating the award.

Model Chapter Awards | June 30
Model Chapter Awards of $100 each are presented annually to recognize and reward Psi Chi chapters that consistently maintain outstanding records of membership inductions, chapter correspondence, service projects, and other criteria associated with being an outstanding chapter. All chapters submitting evidence of meeting these criteria are designated as winners.
### PSI CHI RESEARCH GRANTS

Psi Chi sponsors a variety of grants each year. Listed below is a brief overview. For more information, please visit [www.psichi.org/Awards/completelist_awards.aspx](http://www.psichi.org/Awards/completelist_awards.aspx)

<table>
<thead>
<tr>
<th>Research Grants</th>
<th>Submission Deadline</th>
<th>Who Can Apply</th>
<th>Award Amount / Prize</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SuperLab Research Grants</strong></td>
<td>October 1</td>
<td>• Graduate • Undergraduate</td>
<td>• SuperLab software • Response pad</td>
</tr>
<tr>
<td><strong>Thelma Hunt Research Grants</strong></td>
<td>October 1</td>
<td>• Faculty • Graduate • Undergraduate</td>
<td>• Two grants up to $3,000 each</td>
</tr>
<tr>
<td><strong>Undergraduate Psychology Research Conference Grants</strong></td>
<td>October 1</td>
<td>• Sponsor(s) of local and regional conference</td>
<td>• Up to $1,000 each (number varies)</td>
</tr>
<tr>
<td><strong>Graduate Research Grants</strong></td>
<td>November 1</td>
<td>• Graduate</td>
<td>• Up to $1,500 each (number varies)</td>
</tr>
<tr>
<td></td>
<td>February 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mamie Phipps Clark Research Grants</strong></td>
<td>November 1</td>
<td>• Faculty • Graduate • Undergraduate</td>
<td>• Up to $1,500 each (number varies)</td>
</tr>
<tr>
<td></td>
<td>February 1</td>
<td></td>
<td></td>
</tr>
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<td>November 1</td>
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<td>• Up to $1,500 each (number varies)</td>
</tr>
<tr>
<td></td>
<td>February 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Graduate Assistantship Grants</strong></td>
<td>January 1</td>
<td>• Graduate</td>
<td>• Eight assistantships of $3,000</td>
</tr>
<tr>
<td><strong>FBI NCAVC Internship Grants</strong></td>
<td>February 1</td>
<td>• Graduate • Undergraduate</td>
<td>• Two grants, up to $7,000 each</td>
</tr>
<tr>
<td></td>
<td>June 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>APS Summer Research Grants</strong></td>
<td>March 1</td>
<td>• Undergraduate</td>
<td>• Six $5,000 grants ($3,500 student + $1,500 sponsor)</td>
</tr>
<tr>
<td><strong>CUR Summer Research Grants</strong></td>
<td>March 1</td>
<td>• Undergraduate</td>
<td>• Two $5,000 grants ($3,500 student + $1,500 sponsor)</td>
</tr>
<tr>
<td><strong>SRCD Summer Research Grants</strong></td>
<td>March 1</td>
<td>• Undergraduate</td>
<td>• Two $5,000 grants ($3,500 student + $1,500 sponsor)</td>
</tr>
<tr>
<td><strong>Summer Research Grants</strong></td>
<td>March 1</td>
<td>• Undergraduate</td>
<td>• Fourteen $5,000 grants ($3,500 student + $1,500 sponsor)</td>
</tr>
<tr>
<td><strong>Faculty Advisor Research Grants</strong></td>
<td>June 1</td>
<td>• Faculty Advisor</td>
<td>• Twelve grants, up to $2,000 each</td>
</tr>
<tr>
<td><strong>STP Assessment Resource Grants</strong></td>
<td>June 1</td>
<td>• Psi Chi Faculty Members</td>
<td>• Three $2,000 grants</td>
</tr>
<tr>
<td><strong>APAGS Junior Scientist Fellowships</strong></td>
<td>June 30</td>
<td>• Psi Chi Members • APAGS Members</td>
<td>• Four fellowships, $1,000 each</td>
</tr>
</tbody>
</table>
RESEARCH GRANTS

SuperLab Research Grants | Oct 1
All undergraduate and graduate Psi Chi members are eligible to apply for these research grants. Grant winners receive a copy of SuperLab experimental lab software and a response pad from Cedrus®.

Thelma Hunt Research Grants | Oct 1
All Psi Chi student and faculty members are eligible to apply for a Thelma Hunt Research Grant. Up to two grants of up to $3,000 each are presented annually to enable members to complete empirical research that addresses a question directly related to Psi Chi.

Undergraduate Psychology Research Conference Grants | Oct 1
The purpose of this program is to provide funds for local/regional undergraduate psychology research conferences. Funding is intended for conferences that will invite student research presenters from at least three schools in the area and will notify all Psi Chi chapters in the geographic area of the conference. The maximum grant for each conference is $1,000.

Graduate Research Grants | November 1 & February 1
The purpose of this program is to provide funds for graduate student members to defray the cost of conducting a research project. Applicants may request up to $1,500 for each project. A total of $20,000 has been allotted for this student grant program.

Mamie Phipps Clark Research Grant | November 1 & February 1
All Psi Chi members (faculty, graduate and undergraduate students) are eligible for the Mamie Phipps Clark Research Grant. Each grant offers up to $1,500 to defray the costs of conducting a research project focusing on ethnic minorities. Total funding available is $10,000 per year, and the program begins in 2012.

Undergraduate Research Grants | November 1 & February 1
The purpose of this program is to provide funds for undergraduate student members to defray the cost of conducting a research project. Applicants may request up to $1,500 for each project. A total of $30,000 has been allotted for this student grant program.

Graduate Assistantship Grants | January 1
This grant provides funding for four teaching and four research graduate assistantships during any academic semester. Each grant recipient will receive $3,000. Applicants must be a graduate student who has yet to graduate and a Psi Chi member to be eligible for the program.

FBI NCAVC Internship Grants | February 1 & June 1
All undergraduate and graduate Psi Chi members who are accepted as FBI NCAVC interns are eligible to apply for this internship grant. Two grants up to $7,000 will be awarded annually for the 14-week unpaid position that allows the intern to conduct research at the FBI NCAVC.

APS Summer Research Grants | March 1
All undergraduate Psi Chi members are eligible to apply for these grants (research must be conducted while still an undergraduate, not after graduation). The purpose of the program is to allow students to conduct research during the summer with a faculty sponsor who is a member of APS. Psi Chi awards six $5,000 grants (a stipend of $3,500 to the student plus $1,500 to the faculty sponsor).

CUR Summer Research Grants | March 1
All undergraduate Psi Chi members are eligible to apply for these grants (research must be conducted while still an undergraduate, not after graduation). The purpose of the program is to allow students to conduct research during the summer with a faculty sponsor who is a member of CUR. Psi Chi awards two $5,000 grants (a stipend of $3,500 to the student plus $1,500 to the faculty sponsor).

SRCD Research Grants | March 1
All undergraduate Psi Chi members are eligible to apply for these grants (research must be conducted while still an undergraduate, not after graduation). The purpose of the program is to allow students to conduct research during the summer with a faculty sponsor who is a member of SRCD. Psi Chi awards two $5,000 grants (a stipend of $3,500 to the student plus $1,500 to the faculty sponsor).

Summer Research Grants | March 1
All undergraduate Psi Chi members are eligible to apply for these summer research grants (research must be conducted while still an undergraduate, not after graduation). The purpose of this program is to provide funds for members to conduct summer research at recognized research institutions. Psi Chi will award 14 grants of $5,000 (a stipend of $3,500 to the Psi Chi student plus $1,500 to the sponsoring faculty member at the research institution each year).

Faculty Advisor Research Grants | June 1
All current faculty advisors and coadvisors who have served an active Psi Chi chapter for at least one year are eligible to apply for these faculty advisor research grants. The purpose of this program is to provide funds for advisors to defray the direct costs of conducting a research project (no stipends included). Twelve grants of up to $2,000 are available annually.

STP Assessment Resource Grants | June 1
All Psi Chi faculty members are eligible for these grants, which support projects to develop assessment tests, instruments, and processes. Psi Chi will award three $2,000 grants.

APAGS Junior Scientist Fellowships | June 30
All Psi Chi and APAGS members entering their first or second year of graduate school are eligible for these fellowships that provide funding for direct costs of psychological science research projects. Applicants must be a member of both organizations at the time of submission to be eligible.