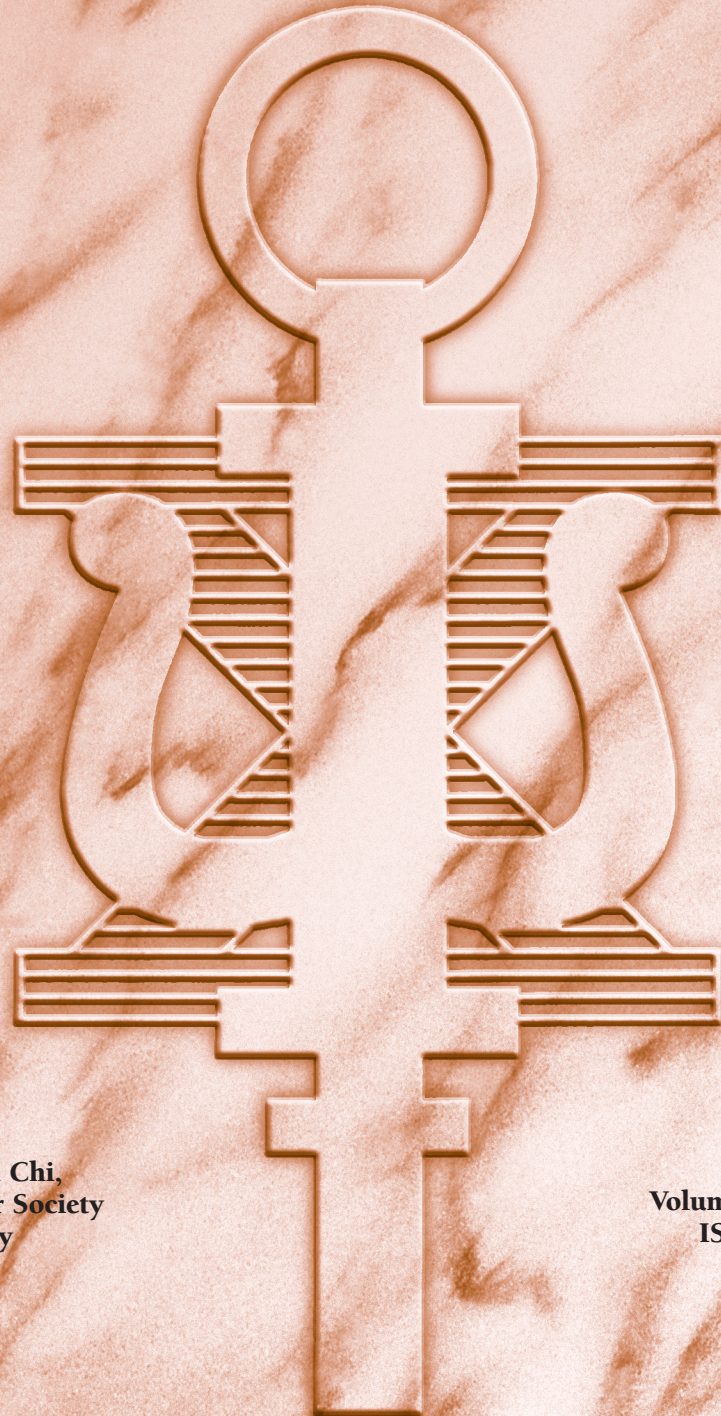


# PSI CHI

*Journal of Undergraduate Research*



Published by Psi Chi,  
The National Honor Society  
in Psychology

Spring 2006  
Volume 11 ♦ Number 1  
ISSN 1089-4136

# PSI CHI

## *Journal of Undergraduate Research*

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Published quarterly by Psi Chi, The National Honor Society in Psychology

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Spring 2006  
Volume 11, Number 1

Published quarterly by  
Psi Chi, The National Honor  
Society in Psychology

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The *Psi Chi Journal of Undergraduate Research* (ISSN 1089-4136) is published quarterly in one volume per year by Psi Chi, Inc., The National Honor Society in Psychology, P.O. Box 709, Chattanooga, TN 37401-0709.

Subscriptions are available on a calendar-year basis only (Spring–Winter). U.S. rates are as follows (four issues): Individual \$20; Institution \$40. For international rates or other information contact: Psi Chi National Office, P.O. Box 709, Chattanooga, TN 37401-0709; telephone (423) 756-2044; fax (toll-free) 1-877-774-2443; e-mail [journal@psiichi.org](mailto:journal@psiichi.org). Printed in the USA. Periodicals postage paid at Chattanooga, TN, and additional mailing offices.

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# The Effect of Temporal Focus on Affective Forecasts Regarding the Outcome of the 2004 Presidential Election

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*Focalism occurs when, as a result of directing a great deal of attention to some event, a person overestimates the impact of that event on his/her future emotional reactions. In the present study, we compared the effectiveness of using a past or future temporal focus as a means to reduce both focalism and inaccurate affective forecasting. Participants' were asked to focus on different events and periods of time before they predicted their emotional reactions to the outcome of the 2004 Presidential Election. Following the election, the participants' predicted ratings were compared with their actual ratings. Evidence of the durability bias was found, but focalism was not reduced by directing thoughts to the past or future.*

The 2004 Presidential election was one of the most divided elections in our country's history. George W. Bush won by merely 3 percentage points in the popular election—51% to 48% (www.cnn.com). Political ads for this campaign were unusually nasty. In fact, some claimed that the negativity of the 2004 Presidential Election was unprecedented (Pesca, 2004). These ads seemed to reflect the country's strong opinions regarding whether Bush or Kerry should be the one to lead the United States through the next four years. The present study examined how people imagined they would react to the results of the 2004 Presidential election and compares these reactions to how they actually felt after the election.

Research indicates that peoples' predictions regarding how they will feel in the future are closely tied to current feelings about specific events (Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998; Schkade & Kahneman, 1998; Woodzicka & LaFrance, 2001). For example, Gilbert et al. (1998) examined Texas voters' affective forecasts in their then upcoming gubernatorial election. An affective forecast occurs when a person predicts what his or her emotional reaction will be to an upcoming event. The researchers found the forecasts were largely inaccurate; participants

whose candidate lost were not as upset as they had predicted, and those whose candidate won were not as happy as they had predicted.

The present study examined the role of focalism in reducing inaccurate affective forecasts. Focalism occurs when, as a result of directing a great deal of attention to some event, a person overestimates the impact of that event on his/her future emotional reactions (Lowenstein & Schkade, 1993). Past research has used two types of temporal focus, past and future, as a means of reducing focalism (Buehler & McFarland, 2001; Wilson, Meyers, & Gilbert, 2001; Wilson, Wheatley, Meyers, Gilbert, & Axsom, 2000). Research examining past focus concentrated on having participants think about similar past events as a way to reduce focalism and thus produce more accurate affective forecasts (Buehler & McFarland, 2001). Research incorporating future focus examined the effect of having participants think about other future events simultaneously with the focal event as a way to reduce

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\*Faculty supervisor

focalism (Wilson et al., 2000). To date, no study has compared these two approaches directly. The current research assessed which focus, if any, is more useful in increasing the accuracy of affective forecasts. Specifically, participants were asked to focus on past elections in which they participated (past focus), other future events occurring simultaneously with the election (future focus), or they were placed in a control group in which they were asked to focus on the upcoming Presidential election (event focus). Our goal in the present research was to compare the effectiveness of these approaches as a means to increase the accuracy of perceptions and decrease a bias that commonly occurs in conjunction with affective forecasting, which is the durability bias.

### **Durability Bias**

Wilson and colleagues (2001) defined the durability bias as the overestimation of the amount of time one's emotional state will be affected by a future event. This misjudgment of emotional reactions is present whether a person thinks of the future event as positive or negative. People usually think that a positive future event will make them happier, and that a negative future event will make them sadder, than the events actually will (Gilbert et al., 1998). Brickman, Coates, and Janoff-Bulman (1978) examined actual reactions to extreme positive and negative events, such as winning the lottery and having a serious accident resulting in paralysis. Contrary to popular belief, they found that these extreme events do not make a person more or less happy than control participants who had neither won the lottery nor had a serious accident that left them paralyzed.

There are several ways in which affective forecasting produces a durability bias (Gilbert et al., 1998). First, when people misconstrue an event, they do not know exactly what the outcome of the event will be. They might think that the outcome of an event will be better or worse than it actually is and thus overestimate their emotional reaction to it. Second, inaccurate theories may lead to a durability bias. Inaccurate theories occur when one cannot recall their emotional experiences from the past. Third, people may be motivated to distort their affective forecasts so that overly positive forecasts may illicit positive responses and overly negative forecasts may prepare them for anticipated negative outcome. Fourth, immune neglect can lead to a durability bias. Immune neglect occurs when a person's psychological immune system rearranges information about an event so that negative events seem less important and positive events seem more important. Finally, Gilbert et al. (1998) also suggested that focalism is a cause of the durabil-

ity bias. Focalism occurs when a person makes an affective forecast by focusing only on that event and not thinking about past experiences or future occurrences that will influence their affective state.

### **Focalism**

When people predict their emotional reactions to events in the future, they often exhibit signs of focalism. Focalism is the tendency for people to consider the consequences of one particular event (the focal event) in isolation from simultaneous events, and therefore fail to recognize the implications of these other events (Wilson et al., 2001). Researchers have found that simultaneous events would likely lessen the consequences of the focal event, but most people fail to recognize this consideration in their forecasts (Buehler & McFarland, 2001; Gilbert et al., 1998; Wilson et al., 2000).

Past research has introduced and tested two proposed solutions as a way to reduce focalism. One solution is to have participants think about other simultaneous future events before predicting their affective forecasts to the focal event (Wilson et al., 2000). A second solution is to instruct participants to think about their emotional reactions to similar past experiences before predicting their affective forecasts to the focal event (Buehler & McFarland, 2001).

Wilson et al. (2000) found that by having participants focus on other simultaneous future events they would exhibit less focalism and have more accurate affective forecast of the focal event. They asked football fans of the University of Virginia to predict their level of happiness on the three days after their upcoming game against the University of North Carolina should their team win or lose. They were also asked how much they would think about the game during those three days. Prior to predicting their happiness level after the game and how much they would think about the game, some of the participants completed a "diary questionnaire," in which they reported how much time they would spend on other activities around game day. The day after the game, researchers asked participants to report their actual happiness and how much they had thought about the game. As expected, participants in the diary condition predicted their happiness as less influenced by the game and their affective forecasts were more accurate.

The second proposed method of reducing focalism involves having participants consider similar past experiences to the focal event. Research by Buehler and McFarland (2001) found that participants considering similar past experiences when making predictions made more accurate affective forecasts. For example, they asked participants to predict the extent to which

they would experience certain positive and negative emotions in response to the upcoming Christmas. To assess the accuracy of their predictions, participants completed a questionnaire within two days following Christmas. As hypothesized, those who considered past Christmases when making predictions gave the most accurate affective forecasts. However, some research has supported the idea that people judge future events as affecting their happiness more than similar past events (Lowenstein & Schkade, 1993). Wilson et al. (2001) reported that to learn from their past emotional reactions people need to do three things. First, they must determine which past experiences are most like the event for which they are predicting their emotional reaction. Second, they need to compare similar past experiences to the event for which they will be predicting. Third, they need to have an accurate memory of what their emotional reactions were in the past. Research suggests that in most cases, people fail to meet one of these three conditions when trying to use past experience to predict future reactions.

As reviewed above, the effects of past and future focus on affective forecasting have been tested in separate studies. However, no study to date has directly compared temporal focus in an attempt to see which, if any, is more effective at reducing affective forecasting. Further, many studies have asked participants to make forecasts regarding events that were not particularly emotionally charged or meaningful to them. Presently we address both of these issues by asking participants to engage in past or future focus regarding an event about which many felt very strongly—the Bush vs. Kerry Presidential Election.

### **The Present Study**

The present study tested whether past or future focus is more effective in increasing the accuracy of affective forecasts regarding the 2004 Presidential Election. This study meaningfully adds to the literature because it directly compares the effects of past, future, and event (control) focus on affective forecasting and the durability bias.

Participants were asked to report how they thought they would feel after the 2004 Presidential election if George W. Bush were to win, or if John Kerry were to win. Before predicting their affective forecasts to the election, participants were assigned to one of three conditions: the past focus condition, the future focus condition, or the event focus condition. Two weeks after the election, participants were asked to report their actual happiness, how much time they spent thinking about the election, and the candidate who won.

We hypothesized that participants in the past focus and future focus conditions would make more accurate affective forecasts than participants in the event focus (control) condition. It was expected by having participants focus on similar past events as the upcoming election, memories of nonextreme responses to elections would mitigate the past focus group's potentially extreme responses to the present election. In addition, it was expected that consideration of the multiplicity of events around the time of the election would cause the future focus group's reactions to the election to be less extreme. We also hypothesized that participants in the future focus condition would exhibit less focalism and make more accurate affective forecasts than participants in the past focus condition. This hypothesis is based on research suggesting that future obligations and events more powerfully influence predictions of happiness than do memories about past events (Lowenstein & Schkade, 1993). Further, research has suggested that for people to learn from their past emotional reactions they need to engage in a substantial amount of cognitive activity (Wilson et al., 2001). Therefore, it is expected that thinking about future events relative to the presidential election will be more effective in reducing focalism than consideration of past election related events.

## **Method**

### **Participants**

One hundred thirty-five participants (37 males, 98 females) were recruited from Washington and Lee University. Ninety-four percent of the participants self-identified as European American, 2% as African American, 2% as Asian American, and less than 2% as Latino American. Participants enrolled in introductory psychology classes received class credit for their participation, and those not enrolled in introductory psychology classes received candy after they participated in the Preelection Questionnaire.

### **Materials**

**Preelection Focus Questionnaire.** A different questionnaire was used for each of the three (past, future, event) preelection focus conditions. Each questionnaire had a similar number of questions and required about the same amount of time to complete. In addition, each questionnaire first asked participants to rate how important the upcoming Presidential election was to them, along with their general level of happiness (by answering the question "Generally how happy do you consider yourself to be?"). The past focus questionnaire prompted participants to think about their thoughts and feelings about past elections in which they voted or cared about. Sample questions included

“In past elections you've voted in (high school, college, past presidential or county elections, etc.) how happy were you after your candidate won?” and “After the results of the 2000 Presidential election were known, how much time did you think about the election and its outcome?” The future focus questionnaire prompted participants to think about events that they would likely be focused on in the days following the election. For example, they were asked to report how much time they would spend socializing with friends, exercising, watching TV, and studying the day after the election. In the event focus questionnaire, participants were prompted to think about the upcoming Presidential election. Sample questions included “Please rate George W. Bush's ability to govern our country in the next four years” and “How important do you think the President's job is?” Ten-point Likert scales were used for each of the above questions.

At the end of each questionnaire, participants were asked to predict how happy they would be if Bush won the election and how happy they would be if Kerry won. Each participant was also asked how much time she/he will spend thinking about the Presidential election results. Demographic information (sex, race, and religion) was also collected at the end of each Preelection Questionnaire.

**Postelection Questionnaire.** The same Postelection Questionnaire was given to participants in each of the temporal focus conditions. First, participants were asked to rate their current happiness. Next, they were asked to rate how much time they had spent thinking about the Presidential election results. They were then asked a question regarding their happiness that Bush was elected. Last, participants were asked to rate how much the outcome of the Presidential election affected their lives. Again, all items were rated on 10-point Likert scales.

### Design

This study employed a 2 X 3 design. The within-subject variables were predicted (preelection) ratings regarding happiness and time spent thinking about the election and actual (postelection) ratings of these same variables. The between-subject variable was focus condition (past, future, or event).

### Procedure

**Part I.** Participants were randomly assigned to the past, future, or event focus condition and were given one of the three Preelection Questionnaires in a large classroom. Before beginning, participants were told that the survey was about voting behaviors and signed an informed consent form.

Subjects were initially asked to report their baseline happiness and the importance of the election. Data for those who reported that the election was not at least moderately important to them (lower than a 5 on the 10-point scale) were discarded. The past focus group was asked to answer questions regarding past elections, and the future focus group was asked to answer questions regarding future events around the time of the election. All subjects then reported how they thought they would feel after the election if Bush were to win, or if Kerry were to win. The event focus group, the control group, was not asked any questions regarding past or future events.

**Part II.** Data from twelve participants were discarded either because the Preelection Focus Questionnaire was incomplete or because the participant rated his or her interest in the election as low. One week after the 2004 Presidential election, the 125 remaining participants were emailed the Postelection Questionnaire. They were asked to complete the short questionnaire and return it to the researcher by the end of the day. Participants who were not asked to fill out a Postelection Questionnaire were emailed a copy of the debriefing form at this time. After the Postelection Questionnaire was returned, the participant was emailed a copy of the debriefing form.

## Results

Eighty-three (66%) of the 125 Postelection Questionnaires were returned. We analyzed these data using four 2 (within: preelection or postelection) X 3 (between: past focus, future focus, or event focus) mixed factor ANOVAs. The analyses were performed on four of the questions asked in both the Pre- and Postelection Questionnaires (see Table 1 for the means and standard deviations of pre- and postelection ratings).

The first 2 X 3 mixed ANOVA examined participants' general happiness before and after the presidential election. Participants were significantly less happy after the election than they were before the election,  $F(1, 80) = 6.53, p < .05, \eta^2 = .08$ . However, there was no interaction between the focus condition and participants' general happiness,  $F(2, 80) = 1.03, p > .05, \eta^2 = .004$ .

Next, we tested the hypothesis that those in the future and past focus conditions would engage in less affective forecasting (as measured by predicted vs. actual happiness ratings regarding President Bush winning the election) than those in the event focus condition. This hypothesis was not supported—the interaction between focus group and time was not significant,  $F(2, 80) = 0.97, p > .05, \eta^2 = .004$ .

Further, the hypothesis that participants in the future and past focus conditions would predict think-

**TABLE 1**  
**Means and Standard Deviations for Preelection and Postelection Ratings**

Question	Predicted		Actual	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Happiness	7.87	1.58	7.00	2.35
Time thinking about election	6.19	2.14	4.13	1.99
Happiness that Bush won	6.83	3.60	6.61	3.60
How much election affected life	5.76	2.15	5.13	2.29

Note. *N* = 83; Ratings made on a 1 (very little) to 10 (very much) scale.

ing less about the election result than those in the event focus condition was not supported,  $F(2, 80) = 0.49, p > .05, \eta^2 = .007$ . However, a significant main effect of time (preelection vs. postelection) was present. Participants reported actually thinking less about the election results than they predicted they would,  $F(1, 80) = 63.04, p < .05, \eta^2 = .44$ .

Finally, the hypothesis that participants in the future and past focus conditions would predict that the election results would affect their lives less than participants in the event focus condition was tested. This hypothesis was not supported. The interaction between focus group and participants predicted or actual rating of how much the election affected their life was not statistically significant,  $F(2, 80) = 0.31, p > .05, \eta^2 = .003$ . Once again, a significant main effect of time (preelection vs. postelection) was present. Participants predicted that the election would effect their lives more than they thought it actually had,  $F(2, 80) = 6.08, p < .05, \eta^2 = .07$ . For each of the dependent variables, we also performed contrasts between the combination of future and past focus conditions and the event focus condition. Again, none of the interactions were significant.

### Discussion

The present study examined how focusing on past, future, or the actual event, in this case the 2004 Presidential election, affected the accuracy of individuals' affective forecasts. The hypothesis that participants in the past focus and future focus conditions would exhibit less evidence of the durability bias by

exercising less focalism and making more moderate affective forecasts than participants in the event focus condition (control) was not supported. Further, the hypothesis that participants in the future focus condition would exhibit less focalism and make more moderate affective forecasts than participants in the past focus condition was not supported. We found the presence of durability bias in participants' predictions, because their actual ratings were significantly lower than their predicted ratings for all but one of the question pairs.

Although there was a significant decrease in participants' overall happiness after the election, there was no significant difference between participants' predicted and actual happiness ratings that President Bush had won the election. Most participants' predicted happiness rating if Bush would win the election was very high (an average of 8 on a 10 point scale), while happiness predictions if Kerry would win the election were significantly lower (an average of 4) indicating that most of the participants were Bush supporters. Therefore, the decrease in overall happiness was probably not related to disappointment that Bush won the election. Rather, participants completed the Postelection Questionnaire the week before Thanksgiving break and were likely busy and under more stress than when they filled out the Preelection Questionnaire earlier in the term. These factors may have led them to rate their overall happiness as lower in the Postelection Questionnaire than in the Preelection Questionnaire.

The other significant main effects demonstrated that the participants exercised the durability bias, because their affective forecasts in the predicted questions were significantly higher than their actual ratings in the Postelection Questionnaire. These results support past research (Gilbert et al., 1998; Wilson et al., 2000; Wilson et al., 2001).

Contrary to our hypotheses, focal condition did not significantly impact durability bias and affective forecasting. Dunn, Wilson, and Gilbert (2003) proposed that when considering the emotional impact of a focal event, people tend to overestimate the importance of factors in their lives that will change as a result of the focal event, rather than factors that will remain stable. What people may not realize is that the stable factors may have a greater effect on their lives than those factors that change. Though participants in the future focus condition were targeted to correct for this misjudgment by focusing on the election as well as other events in the future, they failed to do so because they overestimated the outcome of the election on their lives. Despite our goals to reduce focalism and the durability bias in the future focus group, participants

still demonstrated evidence of the durability bias. Other research by Lowenstein and Schkade (1993) suggested that it is difficult to learn from past experiences. They stated that memories of past events are often wrongly and incompletely remembered, that people are reluctant to adjust these wrong memories, and that certain types of events do not occur frequently enough for people to notice patterns and use these patterns to make accurate predictions. In the present study, participants in the past focus condition were directed to consider past elections in which they had participated in order that they use those models to make informed and accurate affective forecasts about the 2004 Presidential election. However, participants in the past focus condition did not have more accurate affective forecasts than participants in the control condition. Participants may have wrongly remembered how they felt after past elections or simply not connected past elections with the present election. In addition, the 2004 Presidential election was the first election in which most of the participants were eligible to vote. This being the case, they could have overestimated how emotionally invested they would be in the results of the election.

Another reason for the absence of interactions could have been that our questions were not worded properly. Questions for the past focus condition may have failed to motivate participants to put enough time and energy into thinking about the past elections to learn from them and use them to make accurate affective forecasts about the 2004 election. Likewise, the format of the future focus questionnaire did not require participants to actively think about other events and the importance of these events. Had we required participants in the future focus condition to think of and record things they would be doing soon after the election, they may have made more accurate affective forecasts about the election.

Further, aspects of our testing procedure may have made the election so salient in that our efforts to direct their thoughts to past or future events could have been insufficient. The participants completed the pre-election survey on November 1 and 2, the day preceding the election, and the day of the election, when the participants would have been most bombarded with media coverage of the election as well as conversations concerning the election. Furthermore, because we publicized our study as a Voting Behaviors Study, participants may have been primed to think

about the upcoming election, making it more difficult for them to shift their thoughts from the upcoming election.

In sum, the present study found evidence for a durability bias among participants predicting their thoughts and feelings regarding the 2004 Presidential election. Unfortunately, the temporal focus manipulation used in this study did not reduce participants' tendency to give inaccurate affective forecasts. Although the findings of this study did not support our hypotheses, we believe that the question of how to reduce focalism is an important one. With more accurate affective forecasts, individuals may be able to make better judgments and decisions. In addition, by reducing a person's focalism to a particular event, he or she may come to realize that everyday events may be as or even more important to attaining happiness than one isolated and seemingly significant event. It falls to future research to identify ways to aid people in achieving more accurate affective forecasts.

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## The Matching Hypothesis in Reality TV

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*Physical attractiveness is important in choosing a romantic partner. Among other similarities, the matching hypothesis predicts that we will choose partners with similar levels of attractiveness. The present study examines whether the matching hypothesis holds for reality television. Two individuals coded two reality TV shows for physical attractiveness of couples. This archival study provided information about how well a reality television show matched “reality’s” method of choosing a partner. No relationship emerged between physical attractiveness and when the individuals were cut from the shows. Significant positive correlations emerged, however, between ratings of how funny, friendly, competitive, affectionate, and arrogant the individuals were, as well as their level of common interest when they were cut from the shows.*

People in American society are continually bombarded with messages about the importance of physical appearance. These messages appear on television and billboards and are heard on the radio. This emphasis also emerges through people's viewing well-known actors and actresses as ideal people who are thin, physically fit, attractive, and popular. The media tells us that cosmetic/plastic surgery, diets, or expensive products are the paths that should be taken to look like those who are famous. It is hardly ever mentioned how much these famous individuals do to enhance their own beauty.

Nevid (1984) found differences in the physical characteristics men and women found important in a romantic partner. Nevid asked participants, who had a mean age of 21.5 years, to rate various physical characteristics, demographic characteristics, and personal qualities in terms of their importance in a “sexual relationship” and in a “meaningful or long-term relationship” (1984, p. 403). He found that physical characteristics were of greater importance for men than for women when speaking of both types of relationships.

Researchers have widely studied men's interest in physical attractiveness in terms of its importance, its

impact on perceptions, and the role it plays in our choices of a partner. According to Cunningham (1986), men, regardless of ethnicity, preferred women to have large eyes, prominent cheekbones, a small nose, and a wide smile. Women of a normal weight with large breasts and a low waist-to-hip ratio were also appealing to the opposite sex.

In today's society it seems as though a person's face is the first physical feature evaluated. Wickham and Morris (2003) conducted a study of the relationship between facial attractiveness and distinctiveness of unfamiliar faces. They rated distinctiveness in terms of whether the face could have been easily spotted in a crowd and the deviation from an average face. They concluded that as long as an individual had one distinctive physical feature, such as large eyes, they would be easily noticed within a crowd. This one distinctive feature made them stand out in the crowd because it made them different from those faces that were typical (average). This distinctive example of large eyes was one of the features that Cunningham (1986) claimed was attractive to men. Physical attractiveness, perhaps, was so important that people noticed and sin-

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gled out those who were below average or below their standards of what they wanted in a romantic partner.

As mentioned above, an individual's face is one of the many physical characteristics on which people base their first impressions. Attractive individuals are thought to be more likable and better people based on their appearance (Brehm, Miller, Perlman, & Campbell, 2002). According to Eagly, Ashmore, Makhijani, and Longo (1991), good-looking people are thought to be smart, successful, happy, well adjusted, socially skilled, confident, and assertive, but also vain. In terms of personal judgments, physical attractiveness has been found to be more important to men than women. This finding could explain the results of a study that found that 91% of cosmetic surgeries were performed on women in the United States in 1998 (Brehm et al., 2002). In 1998, research showed that cosmetic surgeries had increased 153% and twice as many breast enlargements and liposuctions were done on patients 18 years old or younger than in 1992 (Kalb, 1999).

With the increased attention given to physical attractiveness and its relationship to mate selection, the matching hypothesis was derived. According to the matching hypothesis, individuals will choose a partner with similar levels of attractiveness among other similarities (Brehm et al., 2002). Research has indicated that individuals are attracted to others who are more attractive than they are, but most often the interest is not returned. To avoid rejection, people tend to choose someone similar in attractiveness level to themselves. People resist taking a chance of being rejected; they therefore choose a person that they feel confident will return their interest. Not only do people choose someone who has the same level of physical attractiveness as their own, but they also choose someone with similar personality characteristics, background, and attitudes. For example, according to Botwin, Buss, and Schackelford (1997), people who have similar styles and traits like each other more, especially as they spent more time with them. Additionally, individuals with similar emotional styles are more attracted to one another (Locke & Horowitz, 1990).

Most studies that support the matching hypothesis have been correlational and have focused on actual relationships (e.g., Folkes, 1982). Walster, Aronson, Abrahams, and Rottmann's (1966) classic study examined the dating choices of members of a college dance organization and found that physical attractiveness significantly predicted whether or not someone was asked on a date or a second date, but the participant's attractiveness did not predict that outcome.

The majority of past research in this area has been done on how we choose a romantic partner in reality. "Reality TV" is meant as to be a replica of what

occurs in society. These shows give us something to which we can compare our lives. They are becoming more and more popular, some in the form of game shows, others dating shows, and so on. Most research on reality TV has been devoted to aggression. For example, Cavender, Bond-Maupin, and Jurik (1999) reported that, according to popular discussion, women are vulnerable to victimization, especially girls in their youth (p. 645). These researchers investigated differences in how women were depicted as crime victims from episodes of the first series of *America's Most Wanted (AMW)* and episodes from a more recent series of this show. The present study used procedures similar to those used by Cavender et al.

The matching hypothesis has not been studied in reality TV shows. The present study examined whether or not the matching hypothesis with regard to physical attractiveness is evident in reality television. It was hypothesized that the matching hypothesis would apply to individuals on reality television shows; therefore, the individuals ultimately would choose a romantic partner with a similar level of attractiveness.

## Method

The present study was based on two reality television shows that included choosing a romantic partner, *The Bachelor* and *ElimiDATE*. In the TV ratings of 2001-2002, *The Bachelor* was ranked in the 35th spot and *ElimiDATE* was ranked in the 147th spot. The audience of *The Bachelor* had increased over the past few seasons from 8.7 million to 13.1 million and grown 62% among adults from the ages 18-49 (Rogers, 2004). Because these shows are commonly known as "reality TV shows," individuals look at them as examples of reality.

## Stimuli

*The Bachelor* is a reality TV show in which one man chooses a romantic partner with the intention of marrying her in the future. He chooses from a group of approximately 25 women. They go on dates and also spend time together as a group. The women are the same contestants throughout that particular season. Throughout the season, there are six eliminations in which the man chooses whom he wants to keep and whom he wants to leave the group.

The other reality TV show that was watched was *ElimiDATE*, which is a half-hour show. During the examined show, four single women tried to win the heart of the target male, who was also trying to find a match. They went on a date as a group and as time passed, the target person eliminated the female participants one by one. For this show, the contestants were different for each episode. There were three elimina-

TABLE 1

## Intercorrelations Between Primary and Cross Coder's Ratings of Variables of Interest

Variable of Interest	<i>r</i>	<i>p</i> <
Level of Attractiveness	.20	.17
Bust	.50*	.01
Humor	.45*	.01
Friendly	.64*	.01
Competitive	.64*	.01
Level of Affection	.57*	.01
Level of Arrogance	.68*	.01
Age	.84*	.01
Level of Common Interest	.25	.09

tions throughout each episode, which left one female participant who was the winner.

### Coding Scheme

Before viewing the shows, the researchers devised a coding scheme for each of the variables of interest. Coders were then trained on this scheme. Once both coders felt comfortable with rating each of the variables, they separately watched and rated the target shows. All the participants in each of the shows were coded. Gender was coded as male or female. The coders estimated their ethnicity and if they were unsure, they marked undecided. Age was usually given in these shows. The coders estimated each contestant's height and weight. Physical attractiveness was coded on a scale from 1-10 with 1 denoting *extremely unattractive* and 10 denoting *extremely attractive*. Hair color was coded as brown, blond, black, or red. Hair length was coded as long, medium, or short. Bust size was coded based on the estimated cup size A, B, C, D, or more. Occupation was usually given within these shows. Humor, friendliness, competitiveness, level of affection, common interest, and arrogance was coded on a scale of 1-3 with 1 denoting *below average*, 2 *average*, and 3 *above average*, and if the characteristic was not displayed, it was coded as not applicable. The order in which each person was cut from the choices of potential partners was also coded. For example, if someone was cut at the second elimination process of the show *The Bachelor*, then 2/6 was recorded, with six being the number of total elimination processes. Each person's data were compared to their romantic partner's data for each variable.

### Coding Procedures/ Coders

Two coders separately coded one tape of *The Best of the Bachelor* (which condenses a whole season) and six episodes of *ElimiDATE*. After watching each segment or show, they coded each variable. Coders were free to rewind as needed until all variables were coded.

### Results

The primary coder's data were correlated with the cross coder's data in order to test inter-rater reliability. The variables that were established as reliable were age, bust, humor, friendly, competitive, level of affection, and arrogance. The level of attractiveness and the level of common interest were the two variables that were found to be unreliable (see Table 1). The primary coder's data were used for all other analyses.

Pearson correlational analyses determined the nature of the relationship between the target's attractiveness and the women's attractiveness, and when the individual was eliminated from the program. The correlation between similarity of attractiveness and when the person was cut was not significant,  $r(49) = -.12, p = .40$ .

Because the other variables were ranked, Spearman rho correlation analyses were conducted. This analysis revealed that the rank of the candidates duration as a dating candidate correlated significantly with the candidates' ranks in terms of funniness,  $r^s(49) = .28, p = .04$ ; friendliness,  $r^s(49) = .48, p < .01$ ; competitiveness,  $r^s(49) = .62, p < .01$ ; level of affection,  $r^s(49) = .67, p < .01$ ; level of arrogance,  $r^s(49) = .56, p < .01$ ; and interest,  $r^s(49) = .37, p < .01$ . In addition, age was significantly negatively correlated,  $r^s(49) = -.41, p < .01$ , indicating that the older the contestants were, the earlier they were cut. The variables funny, friendly, competitive, affectionate, interest, and arrogance resulted in positive correlations.

Subsequent analyses included a Stepwise Multiple Regression, with competitive, funny, arrogant, affectionate, attractive, friendly, age, and interest as predictors, and when the individual was cut as the criterion (see Table 2). The first four were found significantly to predict cut in that order, but the other four were not significant predictors. Note that this is the order of strength, and that after the four significant predictors are entered, the variables friendly, age, and interest, which were previously correlated with elimination are no longer significant. Thus, their predictive power overlapped with the other predictors. Note also that the level of arrogance, which was shown to be positively correlated with elimination, is now negative. The arrogance variable therefore appears to be suppressed by the presence of the other predictors (e.g., competitiveness). Hence, when the women are

TABLE 2

**Stepwise Multiple Regression Analysis of Date Preference as Predicted by  
Competitiveness, Funniness, Arrogance, and Level of Affection**

Model	Predictor	Adj. $R^2$	Std Error of Est.	$F$	$p <$	$\beta$	$t$	$p <$
1	Competitiveness	.43	.23	36.66	.01	.66	6.06	.01
2	Competitiveness	.60	.19	36.36	.01	.77	8.11	.01
	Funniness					.43	4.55	.01
3	Competitiveness	.67	.17	33.76	.01	1.75	5.85	.01
	Funniness					.46	5.39	.01
	Arrogance					-1.01	-3.42	.01
4	Competitiveness	.73	.16	34.06	.01	1.66	6.15	.01
	Funniness					.36	4.39	.01
	Arrogance					-1.09	-4.06	.01
	Level of Affection					.30	3.38	.01

competitive, being arrogant appears to be a disadvantage for them. Otherwise, it is a good characteristic to have in the dating process.

### Discussion

It was hypothesized that the target person of the reality TV shows would choose someone with a similar level of attractiveness to their own. The hypothesis was not supported. There was no relationship between the contestant's level of attractiveness and when they were cut from the show. Finding no significant relationship could be due to almost all the participants on the reality shows being attractive. It is important to note, however, that the variable of attractiveness had low inter-rater reliability. Further, there may not be as much variability as there is in real life. Being funny, friendly, competitive, affectionate, interesting, and arrogant were positively correlated with when the individuals were cut. The more the individual showed these characteristics, the later they were cut. Also, the younger the women were, the more likely they were to be chosen. Because of the general lack of support for the matching hypothesis in the present results, we focus primarily on the other exploratory analyses that we conducted.

When conducting the Stepwise Multiple Regression Analysis, the strongest relationship was found between competitiveness and when the individual was cut. It resulted in a positive relation, meaning that the more competitive the individuals were, the more likely they were to be chosen or cut later. Funny was also found

to have a positive relation with when the individual was cut. The funnier the individual was the more likely they were to be chosen. Level of affection was also positively related; therefore, the more affectionate the individual was, the more likely they were to be chosen. A negative correlation was found between the level of arrogance and when the individual was cut. The more arrogant they were, the less likely they were to be chosen.

The present study demonstrates the importance of examining reality TV. There are definitely issues related to social psychology reflected within the results of this study. Perhaps, personality plays a stronger role in mate selection than attractiveness does, or it may be found in other reality shows that similarity in attractiveness does play an important factor in mate selection. Folkes (1982) found a significant relationship between matching in appearance and the steps taken to establish a relationship. However, the present study found something different, no similarities of appearance in the target and the woman chosen. It is important to note that on many of these shows all the contestants are physically attractive, creating a ceiling effect for the matching hypothesis. In this way, again, reality TV does not necessarily reflect reality.

There were several limitations to the present study. The coding for attractiveness and the level of interest were shown to be unreliable. The coders may have been looking for different things when evaluating attractiveness, as well as when evaluating the level of common interest. The positive correlation between

the level of affection and cut could have been due to the producers possibly editing the show to display specific characteristics of the winners versus the losers, because they already knew who won before they edited the show. Therefore, the characteristics of each participant may not have been displayed accurately. Also, one of the stimuli used was a video called the *Best of the Bachelor*, rather than each episode of the season. Therefore, characteristics that influenced the targets choice may not have been present within this video. By only using two different reality shows, we may not have had an accurate representation of reality TV. Also, we only coded one season of each. There may have been variations or changes that the producers or editors of the show made throughout the seasons.

As mentioned before, psychologists should study reality TV shows because they seems to influence many viewers. It is worth examining if reality TV does indeed reflect reality at all. Researchers may want to examine more than two reality TV shows, as well as different types of shows. For instance, it could be that physical appearance and certain personality characteristics become more or less important when the show demands team participation (e.g., *Survivor*) than when it is a dating show. Likewise, physical appearance might have a different impact when the show is based on competency or talents (e.g., *The Apprentice*, *American Idol*). Further research should also utilize more than two coders because personal judgments vary and influence ratings. Finally, future research interested in the dating aspect of these shows should examine other characteristics, such as the seductiveness of clothing or whether the women had large eyes.

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# The Effects of Romantic Involvement on Psychological Well-Being in Late Adolescence

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*Social dating has long been considered a central part of the adolescent experience by psychological theorists. Specifically, Erikson (1968) and Sullivan (1953) theorized that early romantic relationships play an important role in healthy psychosocial development. Moreover, Dunphy (1963) proposed a stage theory in which normative development of interpersonal relationships culminates in late adolescence with involvement in intimate, dyadic romantic relationships. However, little empirical research has been conducted on these theories until very recently. This study extends the line of research in this area by analyzing the relationship between romantic involvement and well-being in late adolescence; whereby well-being is defined as positive self-concept and the absence of depression. Implications of the findings for these theories are discussed.*

Psychological theorists have long considered social dating to play a central role in the adolescent experience. Specifically, Sullivan's Interpersonal Theory (1953) holds that romantic involvement allows adolescents to develop senses of self that, in turn, influence their perceptions of and relationships with others, affecting the course of all subsequent relationships. Moreover, the companionship and intimacy provided by these relationships play an important role in healthy adolescent psychosocial development. In this light, adolescent romantic relationships may be viewed as playing an important role throughout young adulthood (Buhrmester & Furman, 1987; Erikson, 1968; Sullivan, 1953).

Erikson (1968) and Sullivan (1953) both predicted that the development of identity and the estab-

lishment of long-term monogamous relationships would be associated with healthier functioning in late adolescence. Similarly, in describing the development of adolescent romantic relationships, Dunphy (1963) proposed a stage theory in which early adolescence is characterized by same-sex chumships, which progress in middle adolescence to single-gendered cliques interacting in mixed gender groups followed by group dating and culminating in intimate dyadic relationships in late adolescence. Clearly, romantic involvement should be expected to have a great effect on adolescent psychological functioning as adolescents commonly define themselves in terms of their relationships. Thus, the defining of self, which is characteristic of the mid-to-late stages of adolescence, has both cognitive and affective implications for the self. However, despite the theoretical attention to adolescent dating, little empirical research has been conducted to assess the impact of relationships on adolescent psychosocial functioning.

Recognizing the need for empirical support of these theories, Feiring (1996) conducted a qualitative study that provided important information on the structure of middle adolescent dating relationships. Her findings that dating in this age group is primarily characterized by brief, monogamous relationships and

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*Author Note.* This paper is based on a senior honors project completed by the primary author at the University of Tennessee at Knoxville. The Romantic Relationships Questionnaire used in this study was created by members of the Dating Relationships Lab supervised by Deborah Welsh. The authors thank Daniel Niederjohn for his help with data collection and entry, and John Philpot for his advice on statistical analyses. Correspondence concerning this article should be addressed to Deborah P. Welsh, PhD at the Department of Psychology, University of Tennessee, Knoxville, TN 37919. Electronic mail may be sent to [dwelsh@utk.edu](mailto:dwelsh@utk.edu)

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occurs in the context of public, group settings essentially support Dunphy's (1963) stage theory. Accordingly, progression to Dunphy's next stage should be associated with increased psychological well-being, which has been supported by further research linking steady dating in mid-to-late adolescence with higher levels of self-esteem (Samet & Kelly, 1987). Moreover, late adolescents involved in long-term romantic relationships have been shown to experience greater psychological well-being than those with multiple dating partners (Niederjohn, Welsh, & Kawaguchi, 1998). Given these findings, the next logical step in this line of research would be to explore further the overall effect of monogamous dating on individual outcome. That is, we should consider whether involvement in intimate romantic relationships is healthier for late adolescents than not being romantically involved at all. Thus, the present study aims to explore the effect of late adolescent romantic involvement on psychological well-being, as indexed by self-esteem and depressive symptomatology.

Self-esteem has consistently been shown to be inversely related to depression (Orvaschel, Beeferman, & Kabacoff, 1997; Rice, Ashby, & Slaney, 1998; Taylor, Field, et al., 1997). However, nearly all studies denoting this relationship have taken a uni-dimensional view of self-esteem. Furthermore, as it has been argued that the best image of adolescent self-concept is a multidimensional one, a similar view should be taken in assessing adolescents' psychological well-being. Lending additional support for this supposition is the notion that a strict focus on adolescents' overall feelings about themselves provides an inadequate basis for evaluating their adjustment as young people tend to appraise themselves along several different domains. As such, the complexity of self-concept suggests that an individual with a very positive self-image in scholastic ability, for example, might still feel inadequate in another area, such as athletic ability (Cauce, 1987; Harter, 1990; Lau, 1990; Steinberg, 1996). Therefore, exploring the relationships among the various facets of self-concept in relation to depression would be appropriate and much needed in the empirical literature. To this end, Patton and Noller (1994) employed a multifaceted trait model of self-image in their study and found that specific areas of self-image are significantly correlated with depression, thereby suggesting the utility of follow-up investigations into the complexities of the interrelationships they uncovered.

By extending the theories of Sullivan, Erikson, and Dunphy, we can infer that self-concept in the specific area of romantic appeal as well as general feelings of self-worth would be especially salient in the issue of adolescent romantic involvement. Furthermore,

high perceived romantic appeal should be associated with low levels of depression. Therefore, in order to gain a fuller understanding of adolescent functioning and well-being, this study assessed the relationships between self-concept domains, particularly romantic appeal, and depression in addition to taking a multidimensional approach to the examination of the effects of romantic involvement on psychological well-being. Specifically, three hypotheses were proposed for this study. First, late adolescents involved in monogamous relationships should display lower levels of depressive symptomatology than those who are not romantically involved. Second, high self-concept and self-esteem, evidenced by high scores in the domains of perceived romantic appeal and global self-worth, should be associated with involvement in monogamous relationships. Finally, self-perceived romantic appeal should be inversely related to depression.

## Method

### Participants

Approximately 300 undergraduate students volunteered to fill out a questionnaire for nominal course credit in a psychology class at a large southeastern university. After the data were collected, participants 23 years of age and older were excluded from the study as they do not qualify as being in the late phase of adolescence. The resultant sample consisted of 284 students, ranging in age from 17 to 22 years with an average age of 19.07 years. About two-thirds of these participants were female ( $n = 191$ ) as 93 adolescent males participated in this study. The ethnicity distribution of the sample was 87.3% White, 4.6% African American, 4.2% Asian, and 3.9% Hispanic, Native American, and other ethnic groups combined. Of the 256 participants who reported a religious affiliation, virtually all listed Catholicism or Protestantism (16.4% and 78.1%, respectively) with the remainder of the participants identified themselves as Jewish, Muslim, or of some other religion (5.5% combined). Moreover, most of the participants in the study reported relatively high grades in their college courses as indicated by the students' grade point averages (GPAs), which were negatively skewed with a mean of 3.1 on a 4.0 scale.

### Measures

Participants responded to a set of measures included in a questionnaire, which took approximately 20 minutes to complete. Specifically, the questionnaire consisted of a demographic information sheet paired with three assessment measures:

**Self-Perception Profile for Adolescents (SPPA: Harter, 1988).** The SPPA is a widely-used self-report measure designed to assess specific aspects of adoles-

TABLE 1

## Averages and Reliability for the CES-D and SPPA

Scale	Median	<i>M</i>	<i>SD</i>	Cronbach's alpha
CES-D				
Overall	13.0	14.8	8.06	.84
Non-dating group	13.0	15.0	8.03	
Monogamous group	13.5	14.7	8.02	
Combined dating group	13.0	14.6	8.10	
SPPA Subscales				
Scholastic Competence	3.2	3.13	.56	.66
Social Acceptance	3.4	3.25	.46	.62
Athletic Acceptance	3.0	2.73	.85	.88
Physical Appearance	2.8	2.72	.73	.83
Job Competence	3.4	3.27	.45	.49
Romantic Appeal	3.0	2.78	.61	.69
Behavioral Conduct	3.2	3.06	.56	.66
Close Friendship	3.4	3.18	.45	.63
Global Self-Worth	3.4	3.20	.54	.67

Note. The CES-D score is a sum across 20 items with a maximum total score of 60. Lower scores are associated with less depression. Each SPPA subscale is a mean of five items with a maximum possible mean of 4.0. Higher scores are associated with more positive self-concept.

cents' perceived competence in specific self-concept domains. The questionnaire comprises nine subscales with eight of these covering specific domains of self-concept, including scholastic competence, social acceptance, athletic competence, physical appearance, job competence, romantic appeal, behavioral conduct, and close friendship; whereas, the ninth provides a measure of global self-worth. This scale has demonstrated high internal consistency (Cronbach's alphas ranged from .74 to .93) and validity (Harter, 1988). In this study, Cronbach's alphas for the subscales were somewhat lower (see Table 1), yet still acceptable for the domains of interest. Specifically, the romantic appeal ( $\alpha = .69$ ) and global self-worth ( $\alpha = .67$ ) subscales were both shown to be internally consistent.

Unlike items on Likert-type scales, each item on the SPPA consists of two opposing ideas, such as "Some teenagers find it hard to make friends" BUT "For other teenagers it's pretty easy" and "Some teenagers are very hard to like" BUT "Other teenagers are really easy to like." On either side of the item is a set of two boxes, one marked "Really true for me" and the other labeled "Sort of true for me." When the scale is administered, participants are instructed first to decide whether they are more like the teenagers on the right or left side of each item, then to decide how true that chosen side is for them. This structure is intended to imply to the participants that half of all teenagers

agree with the left side, while the other half agree with the right side, thus legitimizing either choice. This is advantageous in that it alleviates the tendency toward socially desirable responses (Harter, 1988).

**Center for Epidemiology Scale of Depression (CES-D: Radloff, 1977).** The CES-D is designed to measure depression in nonclinical populations by assessing the absence of both internalizing and externalizing depressive symptoms. It consists of 20 items scored on a 4-point, Likert-type scale which gauges the number of days in the last week that the respondent experienced the described behaviors. Typical items include "I thought my life had been a failure" and "I had crying spells." This scale has repeatedly demonstrated high validity and reliability; Cronbach's alpha for this study was .84.

**Romantic Relationships Questionnaire.** This measure was created especially for the purposes of this study to gauge dating status (e.g., not dating, dating one person, or dating more than one person), length of current monogamous relationship (if applicable), and recent dating history (i.e., numbers of dating partners and monogamous partners in the past year). Additional items included those referring to the typical setting(s) and activities of dates with the participants' current or most recent partners, such as how often per week the couple would attend school functions or go on a formal date (see Appendix for complete questionnaire).

**TABLE 2****Spearman-Rank Correlation Coefficients  
Relating Self-Concept to Depression**

Variable	<i>r</i>	<i>p</i> <
Scholastic Competence	-.38	.01
Social Acceptance	-.29	.01
Athletic Acceptance	-.15	.03
Physical Appearance	-.47	.01
Job Competence	-.15	.02
Romantic Appeal	-.35	.01
Behavioral Conduct	-.25	.01
Close Friendship	-.13	.04
Global Self-Worth	-.47	.01

**Results**

A series of regression analyses were performed to determine the relationship between dating status and depression. These analyses were conducted both with and without the use of self-concept as a moderating factor. In an attempt to further explain these relationships, regression analyses also were conducted to determine the various domains of self-concept that contribute to late adolescent depression and dating status. As the distributions of most of the variables were quite skewed, robust and nonparametric methods were used for this study, including Spearman-Rank correlation coefficients, Kruskal-Wallis Analyses of Variance (ANOVAs) on ranks, and Tukey's biweight method of robust regression.

For the purpose of analysis, participants were categorized into one of three dating status groups: (a) not currently dating ( $n = 122$ ), (b) dating more than one person ( $n = 31$ ), and (c) dating only one person ( $n = 131$ ). Monogamous relationships tended to be long-term (longer than one year), with a mean duration of 20.75 months and a median of 16 months. When examining the range of scores for the dependent variables assessed in the study, it was noted that participants' responses were skewed toward more positive views of self-concept. Specifically, the medians for the self-concept subscales fluctuated around the value of 3.2, which is considerably above the scale's midpoint of 2.0 (see Table 1); these are also somewhat higher than the means reported by Harter (1988) for the original scale, which all were close to a value of 2.9.

Kruskal Wallis ANOVAs showed no significant relationship between depression and membership in either

the nondating or monogamous relationship group ( $\chi^2 = 0.62$ ,  $p < .431$ ; the multiple-dating category was excluded because of its relatively small size). Similar results were obtained from an ANOVA in which the two dating groups were combined ( $n = 162$ ) and compared to the non-dating group ( $\chi^2 = 0.87$ ,  $p = .352$ ; see Table 1 for descriptions of each group). After verifying that all competence measures were significantly correlated with depression (see Table 2), a stepwise robust regression was performed to determine the specific areas of self-concept (excluding global self-worth) associated with depression in late adolescents. The analysis revealed that five of the domains—scholastic competence, social acceptance, physical appearance, romantic appeal, and behavioral conduct—were significant predictors of depression,  $F(5, 247) = 29.90$ ,  $p < .01$ ; however, the significance of romantic appeal was marginal (see Table 3). When the stepwise regression was rerun, removing this marginal domain from the predictive model, the significance of the remaining variables improved in level of significance, at least  $p < .01$  (see Table 3), and the overall significance of the model remained extremely high,  $F(4, 248) = 35.84$ ,  $p < .01$ . Additionally, the removal of Romantic Appeal from the regression reduced the explanatory value of the model by only one percentage point ( $r^2_{\text{full}} = 0.38$ ,  $r^2_{\text{reduced}} = 0.37$ ). In either case, more than one-third of the variation in depression in the present sample was explained by these four (or five) self-concept domains. Moreover, it is important to note that each domain evidenced a negative relationship pattern with depres-

**TABLE 3****Summary of Hierarchical Regression for  
Predicting Depression With Specific Domains  
of Self-Perceived Competence**

Variable	$\beta$	SE $\beta$	<i>p</i> <
Step 1: $p > .05$ for removal			
Scholastic Competence	-2.12	0.60	.01
Social Competence	-1.71	0.79	.04
Physical Appearance	-2.60	0.47	.01
Romantic Appeal	-1.20	0.60	.05
Behavioral Conduct	-1.77	0.59	.01
Step 2: $p > .01$ for removal			
Scholastic Competence	-2.22	0.59	.01
Social Acceptance	-1.97	0.76	.01
Physical Appearance	-2.99	0.43	.01
Behavioral Conduct	-1.78	0.59	.01

sion; that is, increased feelings of competence in each area are associated with decreased levels of depression.

Finally, a stepwise robust regression was performed in an attempt to relate dating status to self-concept and well-being. Those participants dating more than one person were excluded from the sample due to the small size of that group. Four self-concept domains—scholastic competence, athletic competence, romantic appeal, behavioral conduct—and global self-worth comprised the set of five factors significant in explaining the differences in relational status. Specifically, increased feelings of self-worth in the areas of scholastic competence and romantic appeal were associated with involvement in monogamous relationships, while high scores in the domains of athletic competence, behavioral conduct, and global self-worth were associated with being single. The overall model was highly significant,  $F(5,207) = 21.66, p < .01$ , with these five factors accounting for approximately one-third of the variation in dating status ( $r^2 = 0.34$ ).

### Discussion

Unexpectedly, none of the hypotheses were fully substantiated by the results of the present study. Specifically, dating status did not impact depressive symptomatology; thus, nondaters did not evidence greater levels of depression than daters. Additionally, perceived romantic appeal was only marginally associated with depressive symptoms. While romantic appeal and scholastic competence were positively associated with monogamous dating, two other domains and global self-worth were associated with not dating. The possible reasons for these "negative" associations are intriguing. For example, high feelings of athletic competence naturally were associated with participation in sports,  $F(1, 246) = 88.91, p < .01$ ; so, one might conclude that those with high perceived athletic competence might not have time to date seriously. However, the positive associations of behavioral conduct and global self-worth with nondating status are not as simple to explain. One possible explanation may be that college students with high self-concept in these areas—those who feel they are good people who usually do what is right—might feel "liberated" from social pressures to be involved romantically. Thus, lack of dating for both types of individuals does not impact their overall well-being (i.e., does not cause an increase in depressive symptomatology).

This study has interesting implications for the popular theories posed several decades ago. The assumption through the years has been that theoreticians like Erikson and Sullivan were describing cognitive, emotional, and behavioral patterns that would always be applicable to all adolescents. Given

the results of the present study, however, it is quite likely that their ideas were as much a function of the cultural atmosphere at the time. Specifically, youths of the 1950s and early 1960s were growing up in a culture that expected them to marry young, particularly during late adolescence. Thus, it follows that late adolescents of that era would feel better about themselves when involved in monogamous relationships than if they were not dating; exclusive romantic involvement, after all, is only a couple of short steps from marriage and the fulfillment of society's mandates. In this context, the early developmental theories make perfect sense. Yet, in today's society, there may be different forces at work.

In Erikson and Sullivan's era, adolescence typically ranged through age 18; however, today adolescence extends to approximately 22 years of age as this is when the average late adolescent graduates from college. Thus, marriage also tends to be delayed until individuals have passed through adolescence, and there is somewhat more support in the public opinion for those who do not marry at all. As such, the importance of romantic involvement might be less salient today than it was 40 years ago; for many people, dating is a lower priority now than it was then. For this reason, early theories, such as those of Erikson, Dunphy, and Sullivan, are potentially not as applicable to today's teenagers as they were to the previous generation. However, it is important to note that Erikson himself proposed that identity needs to be achieved in order for one to be able to develop healthy relationships and further stated that identity is as important as relationships in individual psychosocial well-being. Along these lines, the present findings, alternatively, may suggest that as late adolescents are developing a better identity (sense of self), they may not be as prone to depression or low self-concept. In fact, their establishment of identity, or self-concept, appears to enhance their psychological well-being, independent of relational status.

Another factor to be taken into consideration, however, is that the sample for this study was of a fairly specific, homogeneous background. Specifically, all participants were college students who might reasonably be expected to delay marriage until after graduation. Also, their high grade point averages (at least half had GPAs above 3.2) indicate that most were fairly serious students who were committed to their studies; so, schoolwork might take a higher priority for these students than would romantic involvement as they seem to derive more of their present identity from their scholastic achievements as opposed to their dating status. As such, these findings might not generalize well to other adolescents. Thus, a study of the

general population would be useful to determine whether this sample's demographic background may have confounded the analyses.

Finally, reliability issues for this study should be addressed. Specifically, reliability scores for seven of the nine subscales of the SPPA were quite low; so, the measures of self-concept used in these analyses might not be entirely accurate and thus may have altered their outcomes. This is most likely because the SPPA was designed for use with students in the 9th through 12th grades, utilizing characteristic cognitions and behaviors of the middle adolescent phase as opposed to those of late adolescence. Specifically, middle adolescents' ways of perceiving and describing themselves are likely to be different enough from those of late adolescents that the language and breakdown of the SPPA could prove inadequate for assessing college students' self-concepts. As such, the use of the SPPA in assessing domains of self-concept and general feelings of self-worth could be a major factor in explaining the lack of significant findings in this study. Thus, it is recommended that future research in this area employ the Self Perception Profile for College Students, which is similar to the SPPA but tailored more to the cognitive and behavioral tendencies of late adolescents (Neeman & Harter, 1986).

Further research in this area clearly is needed. Specifically, it would be interesting for future studies to address gender differences in the relationships described in this study. Also recommended are studies of these relationships as they apply to the other stages of adolescence (i.e., early and middle) as well as comparisons of these relationships across all three adolescent stages. Moreover, in-depth analyses of developmental theories and their implications for psychological well-being and individuals levels of social adjustment are also warranted. Along these lines, possible revisions of the aforementioned theories from a sociocultural perspective might provide useful under-

standing and open the door to innovative research in the study of the impact of romantic relationships on individual's well-being.

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**APPENDIX**

**Romantic Relationships Questionnaire**

1. Which of the following describes your current dating situation? (circle your response)
  - a. Not dating anyone
  - b. Dating one person exclusively\*
  - c. Dating more than one person

\*If you are dating only one person, how long have you been dating him/her?  
 \_\_\_years\_\_\_months\_\_\_days

2. How many people have you “gone with” during the past year? \_\_\_\_\_
3. How many people have you gone on a date with during the past year? \_\_\_\_\_
4. When you are spending time with your current (or most recent) romantic partner, are you most likely to be:
  - a. by yourselves
  - b. with a group of people
  - c. with other couples
5. How often do (or did) you and your current (or most recent) romantic partner do the following activities together? (please place a check in the box to indicate your response)

	Usually Every Day	2-3 times per week	Once per week	Less than once/week	Never
See each other during school hours					
Attend school functions outside of classes (e.g., sports, clubs, dances)					
Hang out at either partner's house					
Hang out at another friend's house					
Hang out at a public place (e.g., mall, park, tennis courts, pool, etc.)					
Go on a formal date (e.g., going out to dinner, movie, etc.)					
Go to parties					

## Influence of Leader Trust on Policy Agreement

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*Organizations need to know the basis on which new policies are evaluated by employees and the variables that influence the adoption of policies and ideas. Based upon prior research, one factor that may play a significant role in this evaluation is subordinate/leader trust. The present study attempted to ascertain the influence of trust on evaluation of an organizational policy based upon message support. Ninety-three participants (teachers) read a memo indicating support or nonsupport for an organizational policy (new teacher certification) by their direct supervisor (school principal) with accompanying rationale for the position. In addition, participants self-reported their level of trust in their direct supervisor using the Behavioral Trust Inventory (BTI). Results indicate the higher the level of trust in the direct supervisor, the higher the extent of subordinate agreement, regardless of the position taken by the principal. No other variables studied such as length of relationship, years teaching, age, and gender were related to subordinate agreement.*

As public and private sector organizations continue to undergo transformational change, it is important to identify organizational factors that impact employee behaviors and attitudes to change. One such organizational factor is subordinate trust in the direct leader. Trust can be defined as an attitude held by subordinates toward their managers based upon their perceptions, beliefs, and attributions about their managers' benevolence, reliability, openness, and loyalty derived from their observations of their supervisors' behavior (Butler, 1991).

Several researchers have made claim to the importance of trust. For instance, Rotter (1967) concluded that the adaptability of all social groups is dependent upon trust because it affects efficiency and adjustment. Additionally, Brockner, Siegel, Daly, Martin, and Tyler (1997) concluded that a manager's effectiveness depends on the ability to gain the trust of subordinates. In fact, the significance of trust in leadership has been recognized by researchers for at least five decades (e.g., Bass, 1985; Conger & Kanungo, 1987; Dirks & Ferrin, 2002; Rotter, 1967; Shamir, House, & Arthur, 1993; Zand, 1972). In addition, trust is moving from a "bit player to center stage in contemporary organization theory and research" (Kramer & Tyler

1999, p. 594) which can be evidenced by the large number of special issues of journals devoted to the topic of trust (e.g., Rousseau, Sitkin, Burt, & Camerer, 1998).

More importantly, trust has been related to a number of organizational variables. For example, Frost, Stimpson, and Maughan (1978), found trust significantly related to job satisfaction and organizational commitment as well as organizational justice. A recent meta-analysis by Dirks and Ferrin (2002) confirmed the previously mentioned relationships and additionally found trust significantly related to organizational citizenship behaviors, attrition, leader satisfaction, belief in information provided by the leader, and decision commitment. Further research by Clegg, Unsworth, Epitropaki, and Parker (2002) confirmed that trust was a significant determinant of successful implementation of ideas. Clegg et al. (2002) developed two subscales of trust and administered the subscales to 250 design engineers. The trust subscales measured two independent but related dimensions of trust: a measure of organizational receptivity labeled as "trust that is heard" and a measure of leader's willingness to share the benefits of change with subordi-

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\*Faculty supervisor

**TABLE 1****Demographics of School Teachers (N = 93)**

Length of relationship between teacher and principal in years		Age		Years teaching in years	
0-2	37	20s	4	1-5	3
3-4	9	30s	18	6-10	15
5-6	5	40s	20	1-15	11
7-8	13	50s	42	16-20	12
9-10	7	60s	6	20+	49
11+	20	Missing	3	Missing	3
Missing	2				

nates labeled as “trust that benefit” (p. 410). In addition, innovation was defined and measured in two related ways: the number of ideas suggested and the number of ideas implemented. The data confirmed that both dimensions of trust were significantly related to support for innovation and implementation of ideas (Clegg, et al.).

Surprisingly, little research has focused on illuminating how or if leader trust affects subordinate agreement with organizational policy. Understanding the influence of leader trust in these decision-making processes is important in both theory and practice. Persuasion research provides a basis for better understanding the effect of leader trust on subordinate agreement. Priester and Petty (1995, 2003) found that trust influences message elaboration and persuasion. Specifically, their results indicated that low trustworthy endorsers elicit greater elaboration and conversely, while high trustworthy endorsers are more likely to persuade without message elaboration on the part of the recipient (Priester & Petty, 1995).

Subsequent research has demonstrated the effect is generalizable to familiar product endorsers for both relevant and irrelevant products (Priester & Petty, 2003). In short, if one trusts the source of the message, one is less likely to carefully evaluate the merit of the message and is more likely to be persuaded; whereas if one does not trust the source of the message, one is more likely to carefully evaluate the message and instead will base the decision on the message content. Applying

these findings to organizations would help in understanding attitude change of employees regarding new organizational policy agreement.

One dimension of trust that is hypothesized to influence organizational functioning is whether trust in a direct leader influences the decision to agree with an organizational policy. The present research attempted to determine the relationship between subordinate trust in a direct leader and policy agreement. Our hypothesis was based on a previous meta-analysis (Dirks & Ferrin, 2002) which supports the idea that trust in a leader is related to belief in information provided by the leader, and Priester and Petty's (1995) research indicates that trust in a source leads to little analysis of message merit. Specifically, it was hypothesized that the greater the trust in a direct leader, the greater the decision agreement with the direct leader on an important organizational policy.

## Method

### Participants

Ninety-three school teachers (28 men, 55 women, 10 not reporting gender) at a midwestern medium-sized school district were randomly selected from six schools (four high schools and two middle schools) whose principals volunteered to be included in the study. Principals were defined as the direct leaders of the teachers. Teacher demographics including length of relationship with the principal, age, and years teaching, were all collected and analyzed (see Table 1).

## Materials

**Policy memorandum.** To gauge influence of leader trust on policy agreement, a scenario was devised either supporting or not supporting a change in school policy. These scenarios were presented in the form of a memorandum with a response scale at the bottom. The memos were created to be parallel, with a strong attempt to mirror the opposite version of the same terminology. Because of this method of creation, the length and strength of the arguments were comparable. For instance, in the support memo the main supporting line reads, in part: “[Praxis II users] have reported higher satisfaction, higher student performance (above Iowa and the national average).” Whereas in the nonsupport memo the main supporting line reads: “[Praxis II Users] have reported lower satisfaction, lower salaries (compared to the national average), and lower student performance (below Iowa and the national average).” To verify the comparability of the memos, a professor of organizational psychology, the director of human resources, and a former principal of 10+ years (now a professor of education) assisted with the creation of the memos and the finished forms prior to experimentation. Their inter-rater agreement that the memos were equally compelling provides rudimentary evidence of content validity.

Teacher certification has been a salient issue in the Iowa School System. Both support and nonsupport positions for new teacher certification were espoused by the principals to control for initial positions of the teachers because an actual policy issue under consideration was used, and teachers may have positions prior to the study. Each participant was randomly asked to read a memo from his or her principal either supporting or not supporting (both with rationale) required certification of new teachers (see Appendix A and B). Participants were asked to indicate their level of agreement with their principal on a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). This scale was presented on the bottom of both memos and was termed extent of agreement.

**Behavioral Trust Inventory.** In the present study, trust was measured using the Behavioral Trust Inventory (BTI; Gillespie, 2003). The Behavioral Trust Inventory is a new, 10-item measure of trusting behavior in interpersonal work relationships (see Appendix C). On the bottom of the BTI, demographics were asked of participants, including age, gender, how long they have known their principal, and years teaching. Gillespie reports that the BTI demonstrates content and convergent validity using both cross-sectional and longitudinal data. The BTI was designed to measure two dimensions of trust: subordinates' willingness to rely

on their direct leader and disclose information to their direct leader.

Gillespie (2003) defines reliance as: “relying on another's skills, knowledge, judgments or actions, including delegating and giving autonomy, and disclosure as: sharing work-related or personal information of a sensitive nature” (Gillespie, 2003, n.p.). These categories overlap with Zand's (1972) domains of accepting influence and interdependence, and sharing information (Gillespie). The inventory was selected because it offers a brief, valid, and multidimensional measure that assesses trust and is applicable to leader-subordinate work relationships.

## Procedure

Following all APA guidelines concerning the ethical treatments of human participants, a local school district administrator was contacted and provided a full research prospectus, including the specific experimental manipulation that included a small, but necessary degree of deception and the specifics of the debriefing process. Following this, the Human Resource Director of the school district sent out a district-wide email to school principals asking for volunteers. The research prospectus along with the Human Resource Director's comments was passed on to all possible participating principals. Four high school and two middle school principals volunteered for the study. Envelopes containing a cover letter, a policy memorandum, the BTI, and a return envelope addressed directly to the experimenters' college were given to each school. The cover letter asked for participation, outlined a bogus rationale for filling out both the memorandum and BTI, and presented instructions. The order of presentation in all cases was the cover letter first, the policy memorandum second, and the BTI last. Half the envelopes contained a memorandum supporting adopting new teacher certification in Iowa with accompanying rationale, and half contained a memorandum not supporting adopting the new teacher certification policy for Iowa with accompanying rationale. This response was classified as extent of agreement during analyses. School administrators were instructed to place an envelope, which contained the cover letter, memorandum, and BTI, in every other teacher mailbox.

Principals were asked not to discuss related school policy or any aspect of the experiment until the responses were collected. The school administrators were given the envelopes on a Friday and were to place the envelopes in the teacher mailboxes by Monday. Participants were then given a deadline of one school week, with a requested mailby day of Friday. Lastly, all teachers were debriefed by email (principals also

**TABLE 2****Results of Multiple Regression Analysis With Extent of Agreement as the Dependent Variable**

Predictor Variable	$\beta$	$p$
Trust Score on BTI	.22	.02
Memo Type	.11	.31
Gender	.02	.81
Age	-.03	.80
Years teaching	-.06	.56
Length of Relationship	-.08	.47

Note. Trust Score on BTI variable was created by adding responses on all 10-items on the BTI, values were the output from the SPSS multiple regression program using a forward stepwise solution.

received a copy). Based upon school policy, all teachers must check email periodically. Additionally, emails deemed important by anyone are printed and redistributed in the teacher's lounge. Therefore, this means of communication ensured all participants were debriefed appropriately.

## Results

### Analysis

In order to determine the relative contribution of age, years teaching, length of relationship, gender, and the trust composite score in predicting extent of agreement, a multiple regression statistical procedure was used to analyze the data. A forward stepwise multiple regression procedure enters one predictor variable at a time using the variable with the strongest correlation first. Subsequent steps add the variables with the strongest partial correlations until all variables are entered. Only variables that account for a significant portion of the unaccountable variance ( $F$  probability  $< .05$ ) in the predictor variables are used in the final equation. The forward stepwise regression procedure was used to find the "best" linear model: with extent of agreement as the dependent variable, and the trust composite score, and demographic variables as the independent variables.

Forty-five support and 48 nonsupport memos were collected by the response date for a response rate of 38% (93 out of 242 participants responded within the time frame). All 10 questions on the BTI were summed to develop a composite trust score. A  $t$ -test comparison of support ( $M = 4.82$ ,  $SD = 1.68$ ) and nonsupport ( $M = 5.19$ ,  $SD = 2.10$ ) memo type revealed no significant

differences in extent of agreement between the groups,  $t(91) = -.92$ ,  $p > .05$ . Therefore, subsequent analyses were collapsed over memo type. Utilizing a forward step-wise multiple regression procedure, age, years teaching, length of relationship, gender, and the trust composite score were all entered as predictors for the dependent variable, extent of agreement. The trust composite score was the only variable that significantly related to extent of agreement ( $\beta = .22$ ,  $p = .02$ ; see Table 2). Thus, as hypothesized, the greater the trust in a direct leader (trust composite score on the BTI), the greater the decision agreement (extent of agreement) with the leader on the proposed organizational policy (new teacher certification).

## Discussion

Findings for the present study indicate the significant effect that trust, as measured by the BTI, has on extent of agreement, as measured by the agreement selection on the memorandum. No demographic variables were significantly related to either trust, or extent of agreement with a leader. The present research lends support to Brockner et al's. (1997) conclusion that a manager's effectiveness depends partly on his or her ability to gain the trust of subordinates. Clearly trust is related to decision-agreement, which is a component of decision making. Decision making is a paramount component that impacts organizational success, stability, and change. Because trust in leaders has a direct relationship with decision making regarding organizational policy, trust may affect the bottom line.

This study holds many positive implications because of its external validity. The scenario was an actual policy under consideration in which individuals had opinions before the study. The scenario could have been a neutral policy that would have likely yielded greater magnitude in the influence of trust and extent of agreement relationship. However, by using a real issue, the study helps illuminate the influence of trust in an actual organizational setting. The results lend credibility to the idea that a leader can influence subordinate agreement even in situations where subordinates are likely to have already formed opinions.

Although the present study was concerned with the consequences of trust, antecedent variables (e.g., length of relationship with the principal, amount of years teaching) were also measured. Trust was not significantly related to any of these antecedent variables. Specifically, length of relationship with a leader and length of employment in the organization had no significant relationship with trust. These findings mirror previous research. Levin, Whitener, and Cross (2004) conducted a replication study of Levin, Cross, and Abrams (2003) to help identify relationships with

trust. The studies found that perceived trustworthiness had no significant relationship with the subordinate's age, education level, gender, or relationship length, but did significantly correlate with shared perspective. As previously mentioned, Dirks and Ferrin (2002) conducted a meta-analysis of five studies that reported a correlation between length of relationship with a leader and trust. The average corrected correlation between trust and relationship length was not significant. The data indicate that trust does not increase over the course of a relationship. This finding has important implications. If trust can create a significant influence on the decision-making process, and trust is not related to tenure or length of relationship with a leader, then it may be possible for managers to develop trust in a short period of time. The end result may be to increase an organization's ability to change efficiently and effectively by focusing on building trust.

Extent of agreement with the leader in the present study was not significantly related to age, years teaching, or length of relationship. Under conditions of higher trust in a direct leader, there is a higher agreement regardless of age. This finding may indicate that older workers are just as willing to adapt to policy change as younger workers. As a result, organizations may not want to use age as a criterion when predicting perceived attitudes toward policy acceptance and organizational change.

The BTI is a relatively new instrument with limited investigation of its validity. To date, validity data for the BTI are comprised of one validation sample and one cross-validation sample. The present study helps support the validity of the instrument. Because trust has been shown to be related to belief in information, the next logical link would be that trust influences decision making. Although, the purpose of the present study was not to validate the BTI, the current results indirectly support the construct that the BTI measures some dimension(s) of trust. The researchers conducted a confirmatory factor analysis of the BTI, which revealed that willingness to engage in trusting behavior formed two distinct factors, characterized by reliance and disclosure. The results of this factor analysis mirrored findings from Gillespie's (2003) research.

This experiment, as like others, is not without concerns in both design and procedure. A possible source of concern is that teachers may have already been aware of their principal's view regarding new teacher certification. In addition, it is not certain the extent to which the teachers believed the content or source of the memorandum. Moreover, some respondents may have responded to the BTI first, and the

memorandum second, even though this is the reverse order in which they were presented. This reverse ordering could have caused the trust instrument to influence the extent of agreement with the memorandum. Additionally, without knowing the teachers' initial view on the policy of new teacher testing, it is difficult to identify the depth that trust influenced decision-agreement.

A sampling bias could have also been created by the selection of the schools. Only principals who volunteered were used, and the volunteers may have different characteristics from the nonvolunteers. To investigate this potential bias, the mean composite trust score of this sample was compared to the standardization sample of the instrument. The composite trust score, while not normally distributed, is distributed as expected and skewed slightly positive with the average trust of 48.8, which is close to Gillespie's (2003) reported mean of 52.7. Therefore, it is reasonable to conclude that although trust levels would vary between participants who were rating different principals, the respondents do not appear to have been biased in their trust ratings.

Although limitations exist, the present research extends the understanding of the leader trust/subordinate agreement relationship. It may be beneficial to extend the study into the private sector. Additionally, increased understanding of the leader trust/subordinate agreement relationship may help organizations anticipate employee reactions to policy change and plan initiatives that will have a higher probability of acceptance and success. Based on the results, future studies should explore more in-depth the magnitude of the leader trust/subordinate agreement relationship and the relationship between leader trust and the sleeper effect (i.e., if the change in extent of agreement is permanent or temporary). Researching antecedents of trust (e.g., handling subordinate requests, providing greater subordinate latitude in the performance of work, analyzing the way the subordinate sees his/her role within the organization) and other factors that may significantly influence decision-making (e.g., time allotted for decision-making, stress levels, seriousness of error, and whether the decision affects the subordinate directly) would also provide a greater understanding of this area. Finally, this research reveals that trust may be a double-edged sword. While this research supports that trust can positively influence subordinate policy agreement, it also shows that subordinates may minimize message merit and agree to a policy when trust is high. This nonelaborated agreement could lead subordinates to blindly follow and support a disastrous policy.

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**APPENDIX A**


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**Pro Memo**


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# Memorandum

**Date:** 2/17/2004  
**To:** Teachers, Staff, Administration  
**From:** Principal  
**RE:** RE: Praxis II Assessment

Recent press (including our own Sioux City Journal) and attention have been given to Iowa and its teaching standards. In wake of this media surge it is important to explore the issue of mandatory testing. Mandatory testing for new teachers is not a new concept; however Iowa has recently completed the 'norming' for the Praxis II, which means that in this next year Iowa legislature will decide whether or not to institute mandatory testing for new teachers. I felt it my duty to convey to you some of the reasoning why this is a great program and should definitely be used. This testing will support our goals of improving education for all children, uniformly across the state of Iowa.

All new teachers and only new teachers should be required to take the Praxis II Subject Assessment Test. The Praxis II is a standardized test to assess a new teacher's proficiency in the areas of content and pedagogy. The individual would be given a choice as to which content test to take. For example, if an individual wants to teach American History and American Government, the individual would take the 7-12 pedagogy and choose either American History content or American Government content. All other requirements for new Iowa teachers would remain the same. This should take effect for the 2005-2006 school year, all teachers prior to this date should be grandfathered in and not required to test. To say that the national trend is utilizing the Praxis II would be a gross understatement; the Praxis II is used in 38 other states and these states' administration, teachers, parents, and students (where applicable) have reported higher satisfaction, higher student performance (above IA and the national average), a more specialized education, and higher accountability. In addition, recent test takers report having starting salaries above the national average, feeling better prepared, and feeling more valuable as teachers.

Please indicate to me your view on requiring the Praxis II for new teachers, so that I may gauge where our building stands on this issue. Finish the beginning of this sentence by **circling 1** choice from the group below. I \_\_\_\_\_ that we should support the Praxis II as a mandatory requirement for new Iowa teachers.

Strongly Agree	Somewhat Agree	Agree	Neutral	Disagree	Somewhat Disagree	Strongly Disagree

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**APPENDIX B**


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**Anti Memo**


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# Memorandum

**Date:** 2/17/2004  
**To:** Teachers, Staff, Administration  
**From:** Principal  
**RE:** RE: Praxis II Assessment

Recent press (including our own Sioux City Journal) and attention have been given to Iowa and its teaching standards. In wake of this media surge it is important to explore the issue of mandatory testing. Mandatory testing for new teachers is not a new concept; however Iowa has recently completed the 'norming' for the Praxis II, which means that in this next year the Iowa legislature will decide whether or not to institute mandatory testing for new teachers. I felt it my duty to convey to you some of the reasoning why this is a poor program and should definitely not be used. This testing would add further unnecessary barriers, undermine community confidence for our new teachers and would not improve student or teacher education.

No teachers should be forced to take the Praxis II Subject Assessment Test. The Praxis II is a standardized test to assess a new teacher's proficiency in the areas of content and pedagogy. The individual would be given a choice as to which content test to take. For example, if an individual wants to teach American History and American Government, the individual would take the 7-12 pedagogy and choose either American History content or American Government content. This would take effect for the 2005-2006 school year, all teachers prior to this date would be grandfathered in and **NOT** required to test. The Praxis II is just another unnecessary barrier in the already bureaucratic process for new teacher licensure. To think that Iowa teachers don't know enough about the subjects they teach is absurd. The Praxis II is used in several other states and these states' administration, teachers, parents, and students (where applicable) have reported lower satisfaction, lower salaries (compared to the national average), and lower student performance (below IA and the national average). In addition, recent test takers feel ill-prepared and less confident as teachers. Moreover, no research exists that teachers who pass tests perform well in the classroom.

Please indicate to me your view on the Praxis II, so that I may gauge where our building stands on this issue. Finish the beginning of this sentence by **circling 1** choice from the group below. I \_\_\_\_\_ that we should not support the Praxis II as a mandatory requirement for new Iowa teachers.

_____	_____	_____	_____	_____	_____	_____
Strongly Agree	Somewhat Agree	Agree	Neutral	Disagree	Somewhat Disagree	Strongly Disagree

**APPENDIX C****The Behavioral Trust Inventory Principal Version**

Please indicate how willing you are to engage in each of the following behaviors with your Principal, by circling a number from 1 to 7.

How willing you are to do the following with your Principal?		Not at all willing			Completely willing			
1.	Rely on your principal's task related skills and abilities.	1	2	3	4	5	6	7
2.	Depend on your principal to handle an important issue on your behalf.	1	2	3	4	5	6	7
3.	Rely on your principal to represent your work accurately to others.	1	2	3	4	5	6	7
4.	Depend on your principal to back you up in difficult situations.	1	2	3	4	5	6	7
5.	Rely on your principal's work-related judgements.	1	2	3	4	5	6	7
6.	Share your personal feelings with your principal.	1	2	3	4	5	6	7
7.	Discuss work-related problems or difficulties with your principal that could potentially be used to disadvantage you.	1	2	3	4	5	6	7
8.	Confide in your principal about personal issues that are affecting your work.	1	2	3	4	5	6	7
9.	Discuss how you honestly feel about your work, even negative feelings and frustration.	1	2	3	4	5	6	7
10.	Share your personal beliefs with your principal.	1	2	3	4	5	6	7

**OPTIONAL: Please take a moment and complete sample descriptions. This information is used in describing our sample only, and is not intended, nor will it be used to identify any participants, buildings or for any other reason then to describe relevant demographics.**

**Circle one of the following:**

Gender: Male Female

Age: 20s 30s 40s 50s 60s 70s

How many years have you been teaching? 1-5 6-10 11-15 16-20 20+

How long have you known your current principal? 0-2 3-4 5-6 7-8 9-10 11+

# Overt and Covert Racial Attitudes Towards African Americans and Native Americans

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*Contemporary theories of racial attitudes have stated that two distinct forms of racism exist in America today—overt and covert. Recent studies have suggested that racial attitudes towards African Americans have become increasingly covert in their expression while overt racism has declined. However, racial attitudes towards other minority groups, such as Native Americans, have not been consistently studied in this regard. This study examined self-reported overt and covert racial attitudes of 55 White college students towards Native Americans and African Americans. The results showed higher levels of overt and covert racism towards Native Americans as compared to African Americans. Social desirability and socioeconomic status were not related to racial attitudes. Possible reasons for differences in the expression of racial attitudes between the two groups are discussed.*

Since the late 1960's, the expression of overt racism towards African Americans has decreased and support for racial equality in public opinion polls has increased (Greeley & Sheatsley, 1971; Schuman, Steeh, & Bobo, 1985; Henry & Sears, 2002). Despite these reported changes in social attitudes, racism is arguably still a widespread problem in America (Clark, Anderson, Clark, & Williams, 1999; McNeilly et al., 1996; Utsey, 1998). Sigelman and Welch (1993) found that nearly fifty percent of African Americans reported

a belief that negative attitudes towards African Americans were increasing nationally. Thus, this finding is paradoxical to the report that racism is declining across the nation. To account for this discrepancy, researchers have focused on the idea that racism in America has changed to become more covert/subtle and less overt in nature (Krysan, 2000; Pettigrew, 2000; Sears & Henry, 2005).

One contemporary view that distinguishes between overt and covert racial attitudes is symbolic racism theory (Sears & Henry, 2005). Overt racism is similar to "old-fashioned racism" and is characterized by an open support for racial discrimination, the use of pre-Civil War stereotypes, a preference for maintaining distance from other groups through segregation/social distance, and opposition to racial equality (Henry & Sears, 2002). In contrast, symbolic racism is more covert in its expression and is believed to stem from continued problems from the civil rights movement. Symbolic racism is based on the ideas that African Americans do not currently suffer from prejudice or discrimination, and African Americans have achieved equality, but still are not satisfied. Furthermore, African Americans obtained rights/privileges they do not

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*Author Note.* Melissa K. Tibbits was at the University of Tulsa when this study was conducted. She is currently at Pennsylvania State University. Dennis R. Combs is at the Department of Psychology, University of Tulsa (OK).

Funding for this study was provided by an undergraduate research grant to Melissa K. Tibbits from Psi Chi and the University of Tulsa. This research project was conducted as part of the Tulsa Undergraduate Research Program (TURC) at the University of Tulsa. Dennis R. Combs served as the faculty advisor on this project. A portion of this study was presented at the 2004 Oklahoma Psychological Society Annual Conference in Edmond, OK.

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deserve and disregarded traditional values such as work and individualism (Sears & Henry, 2003; 2005).

A second contemporary view of racial attitudes is blatant and subtle racism theory (Pettigrew, 2000; Pettigrew & Meertens, 1995). Blatant prejudice is very similar to the previously stated definition of overt or “old-fashioned” racism. “Subtle prejudice,” like symbolic racism, is rooted in traditional values and involves an overemphasis on presumed cultural differences between ethnic groups and a denial of positive emotions toward minority groups (Pettigrew & Meertens, 1995). For example, one may interpret the high unemployment rate of another ethnic group as an indication that the ethnic group as a whole does not culturally value a strong work ethic and then use this evaluation as a justification for negative feelings towards the ethnic group. Both symbolic racism and subtle racism are consistent with the idea that a new, more covert form of racism exists among Whites (Krysan, 2000).

Although many of the conclusions about contemporary racial attitudes have been drawn from studies of overt and covert racism towards African Americans, very little research has examined racial attitudes towards other minority groups, such as Native Americans (Ancis, Choney, & Sedlacek, 1996). Like African Americans, Native Americans have experienced historical and current struggles with racism (Belcourt-Dittloff & Stewart, 2000). One major concern for Native Americans is the impact that stereotypes have on racial attitudes. Native American stereotypes continue to persist in textbooks, on product labels, as mascots for sports teams, and in the media, and have been characterized as negative and damaging (Ashley & Jarratt-Ziemski, 1999; Merskin, 2001; Trimble 1988).

What is currently known about the racial attitudes of Whites towards Native Americans? The research evidence on this issue has been equivocal. Consistent with the research on African Americans, there is evidence that the overt expression of negative stereotypes and attitudes towards Native Americans has gradually decreased over time (Ancis et al., 1996; Trimble, 1988). In contrast, a recent study found that Whites reported more prejudiced attitudes towards Native Americans than other ethnic groups, suggesting that overt racism towards Native Americans is still quite pervasive (Paniagua, O'Boyle, Tan, & Lew, 2000). Higher levels of overt racism may stem from a lack of familiarity with Native Americans, cultural and religious differences, and socioeconomic factors, but arguably the most important influence on racial attitudes is the presence of Native American stereotypes (Ancis et al.; Farley, 1997; Merskin, 2001). Another unanswered question concerns the level of covert

racism towards Native Americans and if present, how it compares to other minority groups such as African Americans. The authors found no published studies that measured covert racial attitudes towards Native Americans. Clearly, more information is needed to understand better the nature of Whites' attitudes towards Native Americans, and the consequences of these attitudes for Native Americans.

The purpose of this study was to examine levels of overt and covert racism of Whites towards Native Americans and African Americans. We predicted that due to the widespread presence of Native American stereotypes, higher levels of overt/blatant racism would be reported towards Native Americans than African Americans. In addition, White participants were asked to complete a measure of social distance for Native Americans and African Americans in various social roles. Social distance has been considered a form of overt racism in recent research, and we predicted that Whites would report greater levels of social distance towards Native Americans than for African Americans (Ducote-Sabney, 2000; Henry & Sears, 2002). Due to the lack of data on levels of covert racism, we expected both groups would be relatively equivalent on these measures. We assessed covert racism using measures of subtle prejudice and symbolic racism. We also examined the relationship between racial attitudes, social desirability, and socioeconomic status. Since the expression of racism has social and personal implications, we expected a positive relationship between the measures of racism and social desirability (Biernat & Crandall, 1993; Rattazzi & Volpato, 2003; Sears, 1988). There has been inconsistent evidence on the relationship between racism and SES level, so we make no prediction concerning this relationship (Clark et al., 1999).

## Method

### Participants

The participants were 55 White college students (11 male and 44 female) recruited from a private university in Oklahoma. The mean age and educational level of the sample were 20.8 ( $SD = 1.6$ ) and 14.3 years ( $SD = 1.0$ ), respectively. There were more female participants in the sample than male,  $\chi^2(1, N = 55) = 19.0, p = .01$ . Socioeconomic status (SES) was measured with the Hollingshead four-factor index which computes an overall SES score based on level of education, occupation, gender, and marital status (Hollingshead, 1975; Cirino et al., 2002). Because all the participants were college students, SES values were based on parent data. The mean SES score of the sample was 51.2 ( $SD = 10.0$ ; range 21-66), which fell in the middle class level (Hollingshead, 1975). There were

no differences on the racial attitude measures based on gender, so the participants were combined into a single group for the purpose of analysis.

### Measures

**Demographic questionnaire.** All participants completed a demographic questionnaire composed of questions concerning educational level, marital status, age, ethnicity, and information on parental education and occupation to allow computation of the Hollingshead SES index score.

**Marlowe-Crowne Social Desirability Scale - short version.** The Marlowe-Crowne Social Desirability Scale (M-C SDS; Crowne & Marlowe, 1960) assesses social desirability in a variety of populations. The scale measures the tendency to not endorse items about common everyday flaws and behaviors that may potentially lead to an unfavorable assessment by the researchers. Social desirability may be an important component for studies on racism, and it has been argued that college students tend to avoid a direct expression of negative racial statements in research studies (Biernat & Crandall, 1993). For this study, we used a 20-item version developed from the original 54-item scale (Strahan & Gerbasi, 1972). The short version demonstrated comparable psychometric properties to the original scale. Scores on the M-C SDS short version ranged from 0-20, and all items were answered in a true/false format. Higher scores reflected greater levels of social desirability. For this study, the internal consistency of the M-C SDS was good ( $\alpha = .70$ ).

**Blatant and Subtle Prejudice Scales.** The Blatant and Subtle Prejudice Scales assess a person's racial attitudes according to the blatant-subtle theory of racism (as reviewed in Biernat & Crandall, 1993). The Blatant Prejudice Scale is a 10-item scale that measures overt beliefs of threat by minorities, rejection of minorities, and opposition to intimacy with minorities (Pettigrew & Meertens, 1995). The Subtle Prejudice Scale is a 10-item scale that measures a person's belief in traditional values of work, the exaggeration of cultural differences, and the denial of positive emotions towards minorities (Pettigrew & Meertens, 1995). Both scales are rated on a Likert scale ranging from 1 (*strong disagreement*) to 5 (*strong agreement*). Higher scores reflect higher levels of blatant and subtle prejudice, respectively. Previous data on the two scales showed good levels of internal consistency, and the blatant-subtle distinction has been supported by factor analysis (Pettigrew & Meertens, 1995). In addition, blatant prejudice was associated with negative views on immigration policy, more conservative beliefs, and greater outgroup prejudice in a large sample of European participants (Biernat & Crandall, 1993; Meertens &

Pettigrew, 1997). In contrast, subtle prejudice was linked to higher rates of acceptance of outgroup members and less reported discrimination (Meertens & Pettigrew, 1997). In the present study, the internal consistency of the Blatant Prejudice Scale was in the moderate range for both the Native American ( $\alpha = .52$ ) and African American ( $\alpha = .53$ ) versions. The internal consistency of the Subtle Prejudice Scale was good for both the Native American ( $\alpha = .77$ ) and African American ( $\alpha = .81$ ) versions.

**Symbolic Racism 2000.** The Symbolic Racism 2000 scale (SR2K; Henry & Sears, 2002) is a contemporary measure of symbolic racism. Symbolic racism consists of beliefs that minorities make excessive demands, are no longer discriminated against, do not have a strong work ethic, do not take responsibility for their life outcomes, and have advantages based on their ethnicity. The SR2K contains eight items rated on a Likert scale ranging from 1 (*agreement*) to 4 (*disagreement*). Lower scores indicate greater levels of symbolic racism. The SR2K has demonstrated good internal consistency levels in a large sample of college students and underwent extensive psychometric development using factor analytic procedures ( $\alpha = .79$ ; Henry & Sears, 2002). Furthermore, the scale showed minimal correlations with measures of overt racism, thus supporting the discriminant validity of the scale (Henry & Sears, 2002). For the present study, the scale showed good levels of internal consistency for both the Native American ( $\alpha = .75$ ) and African American ( $\alpha = .78$ ) versions.

**Social Scale.** The Social Scale (Byrnes & Kiger, 1988) is a variation of the original Borgardus Social Distance Scale, which has a long history of use in racism research (Bogardus, 1928). The Social Scale measures a person's self-reported comfort level with minority groups in a variety of social roles and can be considered a measure of overt/blatant racism (Biernat & Crandall, 1993; Henry & Sears, 2002). The scale contains eight items rated on a Likert scale ranging from 1 (*very uncomfortable*) to 7 (*very comfortable*). Participants in the present study rated how comfortable they would feel with a minority individual as governor, president, personal physician, renter, spiritual counselor, roommate, date, and dance partner. The scale was constructed so that the roles differed in amount of social contract and intimacy. For this study, we used Native American and African American versions. Because each item represents a different social role, we analyzed the individual items. In previous research, the internal consistency was excellent ( $\alpha = .90$ ), and the test-retest reliability for a 3-week period was good ( $r = .94$ ; Byrnes & Kiger, 1988). For the present study, the scales showed excellent levels of inter-

TABLE 1

## Summary of Correlations

Measure	Measure					
	BPS - AA	SPS - AA	SR2K - AA	BPS - NA	SPS - NA	SR2K - NA
BPS - AA	1.0	.33*	-.26	.39**	.16	.15
SPS - AA		1.0	-.68**	.21	.62**	.59**
SR2K - AA			1.0	-.19	-.50**	.67**
BPS - NA				1.0	.13	.09
SPS - NA					1.0	.61**
SR2K - NA						1.0
SES Index	-.22	-.20	.04	-.18	-.01	.11
Social Desirability	.07	.18	-.08	-.15	.08	.02

Note. BPS-AA = Blatant Prejudice Scale-African American; SPS-AA = Subtle Prejudice Scale-African American; SR2K-AA = Symbolic Racism 2000-African American; BPS-NA = Blatant Prejudice Scale-Native American; SPS-NA = Subtle Prejudice Scale- Native American; SR2K-NA = Symbolic Racism 2000-Native American  
\*  $p < .05$ ; \*\*  $p < .005$  (corrected level)

nal consistency for both the Native American ( $\alpha = .94$ ) and African American versions ( $\alpha = .91$ ).

### Procedure

We recruited participants for a study entitled "Attitudes Towards Others," a title chosen to minimize the possibility of a response bias that may affect research on racial attitudes (see Thompson, Neville, Weathers, Poston & Atkinson, 1990). Participants signed-up on a centralized board placed in the department of psychology. The measures were randomized before administration and several filler scales were included to distract participants from the purpose of the study. Participants received extra credit for their time and effort. Participants were debriefed after completion of the study.

### Results

Data analyses proceeded as follows. First, correlations between the measures of racism, social desirability, and socioeconomic status (SES) were computed. Due to the number of correlations, a corrected probability level was set at .005, and correlations falling above that level were considered to be nonsignificant. Second, comparison  $t$  tests were conducted to determine if differences were present in racial attitudes towards Native Americans and African Americans on the Blatant Prejudice Scale, the Subtle Prejudice Scale, the Symbolic Racism 2000 scale, and the Social Scale.

A summary of correlations for the measures of racism, social desirability, and SES are presented in

Table 1. Social desirability and SES level were not significantly correlated with any of the racism measures. There were significant intercorrelations between the African American and Native American versions of the Blatant Prejudice Scale, the Subtle Prejudice Scale, and the Symbolic Racism 2000 scale. The Symbolic Racism 2000 scale was significantly correlated with the Subtle Prejudice Scale across both the Native American and African American versions. There was a trend for a positive relationship between scores on the African American version of the Blatant and Subtle Prejudice Scales, but this relationship was not found on the Native American version.

Mean scores for the racism measures can be found in Table 2. We used a series of paired  $t$  tests to compare the means on the racism measures. On the Symbolic Racism 2000 scale, there was a trend for greater levels of symbolic racism (i.e., lower scores reflect greater symbolic racism) reported towards African Americans than Native Americans,  $t(54) = 1.7$ ,  $p = .08$ . As predicted, there were significantly higher levels of blatant prejudice reported towards Native Americans than African Americans,  $t(54) = 2.0$ ,  $p < .05$ . Similarly, there were significantly levels of subtle prejudice reported towards Native Americans as compared to African Americans,  $t(54) = 2.8$ ,  $p < .05$ . Thus, participants reported higher levels of blatant and subtle prejudice towards Native Americans than African Americans.

Mean scores for the measure of social distance (Social Scale) are also presented in Table 2. We used

TABLE 2

## Mean Scores for Measures of Racism and Social Distance Scores

	Version	
	Native American Mean (SD)	African American Mean (SD)
<b>Racism Measures</b>		
Blatant Prejudice Scale	21.8 (5.7)	20.0 (5.1)
Subtle Prejudice Scale	23.8 (6.8)	21.6 (6.7)
Symbolic Racism 2000	23.6 (4.0)	22.8 (4.0)
<b>Social Scale</b>		
Governor	6.3 (1.0)	6.3 (1.1)
President	6.0 (1.3)	6.1 (1.3)
Personal Physician	6.3 (1.2)	6.2 (1.2)
Rent a house from me	6.4 (0.9)	6.1 (1.2)
Spiritual Counselor	5.3 (1.9)	5.8 (1.5)
Roommate	6.3 (1.2)	6.2 (1.2)
Date	5.7 (1.8)	5.2 (2.1)
Dance Partner	6.3 (1.3)	6.3 (1.2)

Note. Social Scale rated from 1 (*very uncomfortable*) - 7 (*very comfortable*)

a series of paired *t* tests to compare the means on the Social Scale. Participants reported being significantly more comfortable renting a home to a Native American than an African American,  $t(54) = 2.4, p < .02$ , and more comfortable with the idea of a going on a date with a Native American,  $t(54) = 2.1, p < .05$ , but felt more comfortable with an African American rather than Native American as their spiritual advisor,  $t(54) = -2.6, p < .01$ . No other significant differences were found on the Social Scale.

### Discussion

It has been argued that overtly stereotypical portrayals of African Americans are still present in American culture today, but these stereotypes are also balanced with varied and arguably realistic portrayals of African Americans in a variety of occupations and social roles. On the other hand, stereotypical images of Native Americans in limited roles are nearly exclusively seen in the media and rarely questioned by those outside Native American culture (Ashley & Jarratt-Ziemski, 1999; Merskin, 2001). Whether these portrayals of African Americans and Native Americans merely reflect popular societal attitudes or directly

impact attitudes about the members of these groups are unclear. Still, there is emerging evidence that Whites do tend to express higher levels of prejudice towards Native Americans than African Americans (Paniagua et al, 2000).

In the present study, we predicted that higher levels of overt racism would be expressed towards Native Americans than African Americans. Results from the Blatant Prejudice Scale support this hypothesis; Whites did express greater “blatant” prejudice towards Native Americans. It is possible that these attitudes are based on stereotypical images of Native Americans, which are mainly negative in description (Trimble, 1988). Results from the social distance measure were not as clear. Although participants reported feeling more comfortable with an African American than Native American spiritual advisor, they also reported feeling more comfortable renting a house to and dating a Native American person than an African American. In summary, we found evidence of higher levels of blatant racism towards Native Americans, but this result was not fully supported on the social distance scale.

When interpreting these conflicting results, it may be beneficial to closely examine the kinds of stereotypes associated with Native Americans. One commonly recognized stereotype is that Native Americans have a heightened level of spirituality and connection to nature (Trimble, 1988). Although this stereotype is arguably positive, it does serve to distinguish Native Americans from worshippers of other mainstream American religions, potentially explaining the discomfort with Native Americans as spiritual advisors found in the current study. Similarly, a study on perceptions of Native Americans in different situations found a negative perception for Native Americans who received free health care; all other perceptions were positive (Ancis et al., 1996). Furthermore, other researchers note that although stereotypes of Native Americans have become more positive over time, they are still stereotypes that do not fully encompass the diversity of tribes and individuals present in Native American cultures (Ashley & Jarratt-Ziemski, 1999; Merskin, 2001; Trimble, 1988). Thus, negative perceptions of Native Americans may be present only in specific social situations and roles—a suggestion supported in the present study.

In terms of covert racism, participants reported a higher level of prejudice towards Native Americans than African Americans on the Subtle Prejudice Scale with a trend for differences on the Symbolic Racism 2000. Participants tended to perceive Native Americans as being culturally different, having nontraditional work values, and viewed them less positively than

African Americans. This result supports the idea subtle forms of racism are present in today's society; however, longitudinal studies are needed to determine if this form of racism is actually increasing over time as predicted. We expected that differences would also be found on the measure of symbolic racism due to conceptual similarities with subtle prejudice, but this was not the case. This result could be explained by the fact that the subtle prejudice and symbolic racism scales, though similar, are not identical concepts, a possibility supported by the modest correlation between the two measures. Thus, it is possible that the differences more than the similarities between the concepts are especially important in the perception of Native Americans. Finally, we found no evidence that social desirability or socioeconomic status impacted the results of the study (Biernat & Crandall, 1993; Ratazzi & Volpato, 2003). A more complete examination of the differences between these two theories of racism awaits further research.

The present study has several limitations that should be mentioned. First, familiarity with the Native American population may have been an important factor in the study. In Oklahoma, the Native American population has an increased presence and visibility, and many participants reported significant contact with persons from this group. Consistent with research on stigma, we would predict that direct contact would reduce stereotypes and negative attitudes towards this group (see Couture & Penn, 2003 for a review). The study would have been enhanced if we included a measure of familiarity with Native Americans and African Americans in the study. Second, our sample consisted of college students who may be more liberal and racially tolerant in terms of values (Beirnat & Crandal, 1993). Because political values have been linked to racial attitudes, the inclusion of a measure of liberalism/conservatism would have benefited the study (Henry & Sears, 2002; Sears & Henry, 2003; 2005). Finally, as evident in Tables 1 and 2, the data are attenuated in range, which may have lowered the magnitude of the correlations found in the study.

Despite the limitations of the current study, the findings support the idea that although overtly racist ideas towards African Americans appear to be less prevalent in contemporary America, overt racism towards Native Americans is present. It is hoped that these results lead to a more accurate understanding of racial attitudes in America.

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## Does Making Salient Task Relevance to Group Affiliation Decrease the Performance of Male Athletes on Spatial Tasks?

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*We examined whether highlighting the similarities between the skills needed for sports and the skills used in Mental Rotation (MR) influenced male athletes' performance on spatial tasks. College men, half of whom were athletes, completed MR under two conditions: one which made explicit the analogous nature of the skills needed for both MR and sports, and one which did not. Unlike women in previous studies, male athletes did not underperform when the importance of the MR to athleticism was highlighted. We discuss the results in context of differences between men and women in responses to stereotype threat and in levels of self-confidence.*

The propensity to identify with a particular group is what makes individuals part of society (Reid & Purcell, 2004), but group identification does not come without consequences. *Stereotype threat* describes how people who have a strong group affiliation perceive that they are evaluated based on stereotypes about members of the group, rather than on an individual level (Steele, 1997). Such beliefs (true or not) may be explicit or they may simply be known to exist (i.e., be implicit); either way the beliefs manifest themselves in a fear of conforming to the negative stereotype and validating the negative perception of the whole group (Steele, 1997). Although the effect has been documented most commonly in groups based on gender (e.g., Brown & Josephs, 1999; Schmader, 2002; Spencer, Steele, & Quinn, 1999) and race (e.g., Aronson, Fried, & Good, 2002; Smith & White, 2002; Steele & Aronson, 1995), the effect also occurs to

members of groups resulting from other demographic distinctions, such as SES (Croizet & Claire, 1998) or athleticism (Stone, 2002).

Three conditions must be present in order for stereotype threat to influence individuals negatively. First, the people in the group must know that the stereotype exists even if it is unstated, and that expectations of them are low because of beliefs that people in the group are not skilled in some area (Brown & Josephs, 1999). Second, people in the group must genuinely care that there is a negative stereotype about their abilities (Aronson et al., 1999). Finally, there must be an opportunity for the individuals about whom there is a stereotype to underperform (Steele, 1997). If these conditions are present, performance can be greatly undermined.

Contributing to the pressure some people feel to favorably represent their group is the problem that stereotypes are not always accurate. For example, men are perceived as being smarter than women, but several indicators of intellect, including college GPA, reveal that women are as bright as men (Beyer, 1999). An implicit stereotype threat can be so strong that individuals' performances are influenced whether the stereotype is correct or not, and the more salient the

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*Author Note.* Portions of this work were presented at the 51st annual meeting of the Southeastern Psychological Association, Nashville, TN, April 2005. We are grateful to Sharyn M. Lyons for her assistance in collecting and coding the data, and to Stephanie Valentine and Alvin Owusu for their help with procedure. Correspondence may be directed to cvalenti@catawba.edu or sbrownlo@catawba.edu

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stereotype is, the more likely members of a group may experience threat. Research shows that men are believed to be better at math than are women, so when this stereotype is highlighted to women, they perform worse on math tasks than when this information is either not verbalized or not contradicted (Brown & Josephs 1999; Schmader, 2002; Skaalvik & Skaalvik, 2004; Spencer et al., 1999). Any number of group membership constructs can affect people negatively. For example, informing people that a math and spatial test is diagnostic in describing how adept people are at math/spatial behavior (versus merely telling them that the test was being used to collect nondiagnostic baseline data) negatively impacted the performance of both women *and* Latinos (Gonzalez, Blanton, & Williams, 2002). In sum, the way people perceive themselves and their abilities is often based on the stereotypes that surround them and the groups with which they identify.

Beliefs about our abilities to perform various tasks differ according to gender as men often have more confidence in their abilities than do women (Pallier, 2003; Williams, 1994). Men look at themselves and their capabilities in a more favorable light than do women even if they have not observed that they are actually better at a particular task than women (Skaalvik & Skaalvik, 2004). Because women may internalize stereotype-based beliefs about their gender and may not have as much experience as men at certain tasks that are typically male-dominated (e.g., math or sports), their performance can be decreased because of weak feelings of efficacy (Schmader, Johns, & Barquissau, 2004). Similarly, women do not see themselves as capable with various spatial skills, particularly Mental Rotation (MR; Halpern, 2000). In this particular instance, women have a legitimate concern about their abilities, because there are marked gender differences in the capability to expediently rotate, completely in the mind, two- and three-dimensional items (Voyer, Voyer, & Bryden, 1995). Research shows that men are better at MR than are women, performing rotations faster and more accurately than women (Bodner & Guay, 1997; Masters, 1998; Scali, Brownlow, & Hicks, 2000; Voyer et al., 1995). Although there are several factors to account for the MR performance disparity, two in particular—lack of experience and low expectations—contribute to women's lack of parity with men on MR.

Boys and men have more practice with MR, perhaps because boys more than girls are encouraged to participate in activities that promote spatial imagery, such as sports, and to play with toys that hone these skills (Newcombe, Bandura, & Taylor, 1983; Voyer & Isaacs, 1993). Activity choices are encouraged by par-

ents, who may implicitly steer their children toward gender-typed play choices that may or may not require spatial skills: models for boys, dolls for girls (Beyer, 1999). Also, boys who use spatial skills during leisure may then take academic courses (such as chemistry and physics) that require those abilities (Stericker & LeVesconte, 1982), gaining further experience and confidence. Without experiencing routine successes in the spatial domain, girls may then cultivate a stable, dispositional attribution to lack of ability (Beyer & Bowden, 1997), not only for themselves, but for their entire group (Cadinu, Maass, Frigerio, Impagliazzo, & Latinotti, 2003), leading them to doubt their abilities in the area.

Expectations are crucial to women's performance with MR. For example, merely hearing that a task is "spatial" can cause women to perform worse than men; paradoxically, the same task given the designation "cognitive" will not lead to poor performance (Sharps, Price, & Williams, 1994). Belief that the task is difficult and pressure-filled is exacerbated by explicitly keeping time. The time pressure may further hinder women's abilities, as they are generally more cautious and slow than men at MR, presumably so that they can increase their accuracy (Goldstein, Haldane, & Mitchell, 1990; Scali, Brownlow, & Hicks, 2000). Women under stereotype threat may respond by employing self-handicapping strategies that ensure that they may not do well (Keller, 2002), further confirming their fears. Research clearly shows that women are influenced by beliefs about their lack of ability with MR, and often underperform in response to that expectation.

One activity that may help MR ability, as well as provide confidence in that ability, is athletics. Athletes may be better at MR than nonathletes because athletes have more experience using spatial skills, particularly rotations, than do nonathletes. The day-to-day routines typical for serious athletes afford practice and training in spatial imagery, because shooting, kicking, throwing, and timing all require the ability to judge how a three-dimensional object will change (Ozel, Larue, & Molinaro, 2004). Athletics may therefore mitigate the relationship between MR ability and gender.

To address the question of whether the MR ability of female athletes was higher than that of nonathletes, and whether their MR confidence and capability could be improved by making salient the relevance of MR tasks to sports abilities, Valentine, Owusu, and Brownlow (2004) provided a set of MR tests to female athletes and nonathletes under two conditions. In one, the women were told that the tasks were the kind that draw on the skills that are needed to perform

perceptual and spatial maneuvers that athletes are good at, such as kicking, shooting, and throwing. In the other condition, the women were merely told that they would be performing rotations. The results revealed that the stereotype threat was *not* nullified for female athletes when the analogy between their abilities (i.e., sports) and the components of the task were highlighted; instead, female athletes performed worse than their athlete peers who had not been told that the skills needed were alike. Nonathletes, on the other hand, performed equally, regardless of whether they were told the skills were like those used in sports or not. It is possible that the female athletes underperformed because after being told that they should possess the skills to be successful in the task, a fear of performing poorly was created, which, in turn, would reflect negatively on their individual athleticism, but also on female athletes as a whole.

Our question was whether men, who are more confident in their abilities, might also underperform under similar circumstances, particularly because for many male athletes, identity as an athlete is a major part of the self-concept (see Stone, 2002). We replicated the Valentine et al. (2004) study with male athletes and nonathletes in order to examine whether male athletes, like their female counterparts, would underperform when their group membership was made salient.

## Method

### Participants and Design

A total of 65 men (32 collegiate athletes, 33 nonathletes) volunteered to participate. All were traditional college-aged students, distributed across classes (11 first-year students, 14 sophomores, 24 juniors, 16 seniors). Most ( $n = 44$ ) were self-identified as White, with the remainder Black ( $n = 17$ ), or other/nonidentified ( $n = 4$ ). Students participated for course credit or they simply agreed to perform the experiment for no compensation. We told half of the men that they would be performing rotations, and nothing else. However, we emphasized to the other half that there is a strong relationship between athletic and spatial skills, and that they would be performing rotations. These manipulations resulted in a 2 X 2 (Athletic Identity X Task Relevance to Group Affiliation) between-participants design.

### Stimulus Materials

The men completed eight items taken from the Vandenberg and Kuse Mental Rotations Test (Vandenberg & Kuse, 1978). This test has been used to assess rotational capability in many studies, and shows both high reliability (over .83 via various meas-

ures) and strong relationships with other measures of spatial ability (Vandenberg & Kuse, 1978). For each item on the test, a model figure is shown on the left with four possible rotations presented to the right of the model. Of those four possible rotations, two are correct rotations of the target item. The participants read instructions to “circle any of the four items that are rotated versions of the target item.”

### Dependent Measures

**Scoring of spatial tasks.** Following the procedure of Valentine et al. (2004), we measured how long it took each man to complete his MR task, in seconds, and calculated *raw score* and *adjusted score* for each to determine accuracy. To determine *raw score*, we tallied the number of correct rotations made by participants, with possible scores ranging from 0 to 16. We used an *adjusted score* to account for the tendency to guess and circle many (or all) options (Goldstein et al., 1990). These scores were calculated by subtracting incorrectly chosen items from correctly chosen items, with scores ranging from -16 to 16. Guessing is more common when people are in a hurry or unsure.

**Self-efficacy measures.** Following the procedure of several other researchers (e.g., Scali & Brownlow, 2001; Schmader, 2002; Valentine et al., 2004), we assessed men's perceptions of the tasks and their performance, shortly after they had finished the rotations. The men used 7-point bipolar scales with opposite-meaning endpoints, given in one of two counterbalanced orders, to provide this information. Questions included how pressured the men felt to complete the task accurately and quickly, with both questions bounded by endpoints of 1 (*didn't feel pressured*) to 7 (*felt very pressured*). Other scales with opposite-meaning endpoints, anchored by 1 and 7, were how difficult the task was (*extremely difficult/not difficult at all*), how well the participant did (*very poorly/very well*), how much effort was expended (*didn't try very hard/tried very hard*), how frustrating the task was (*not very frustrating/very frustrating*), and how much the MR tasks called upon skills used daily (*not at all/very much*).

**Background and academic experience.** Experience, training, and practice with spatial tasks—particularly through sports, leisure, and academics—have been shown to improve MR (Brownlow, McPheron, & Acks, 2003; Voyer & Isaacs, 1993). Therefore, participants reported how “good” they were in four different areas, using a 7-point bipolar scale with endpoints anchored 1 (*not good at all*) and 7 (*very good*). The four areas assessed using the scale were (a) math; (b) graphic design, art, line drawing, and the like; (c) sports; and (d) science. The men also indicated how many college chemistry and physics courses they had taken,

TABLE 1

**Means, SDs, Fs for Performance Measures as a Function of Task Relevance to Affiliation and Athletic Identity**

	Task Relevance to Affiliation						F Rel (R)	F Iden (I)	F R x I
	Relevant			Not Relevant					
	Athletes (n = 15)	Non-Athletes (n = 16)	Athletic Identity Total (n = 31)	Athletes (n = 17)	Non-Athletes (n = 17)	Total (n = 34)			
Raw Score	12.20 (2.70)	11.00 (3.71)	11.61 (3.28)	12.63 (3.85)	10.65 (4.24)	11.56 (4.11)	< 1.00	2.89+	< 1.00
Adjusted Score	8.53 (5.44)	7.12 (5.28)	7.78 (5.31)	10.12 (5.89)	6.76 (5.22)	8.39 (5.72)	< 1.00	3.11+	< 1.00
Time in s	400.53 (178.46)	313.38 (146.64)	354.03 (171.44)	313.38 (146.64)	349.06 (162.21)	331.76 (159.19)	< 1.00	< 1.00	2.36

Note. Raw score varies from 0 to 16; adjusted scores from -16 to 16; +  $p \leq .09$ .

whether they had taken organic chemistry (a key academic course requiring MR; Bodner & Guay, 1997), and whether (and for how long) they had played collegiate or high school sports. Finally, the men reported how many hours per week that they played video or internet-based interactive games.

### Procedure

Following the procedure of Valentine et al. (2004), the students participated individually in a private cubicle. After the men heard that they would be performing laboratory tasks and answering questions about their experience, they provided consent. We then read the appropriate instructions to each person according to the condition which he was assigned, telling those men in the condition that did not make relevant the nature of the task to athletic affiliation that they would be “performing MR tasks which measured their abilities to perform complex spatial maneuvers.” Those men assigned to the condition that made salient that the tasks were relevant to athletic affiliation were told the same information, with an addition that the spatial maneuvers “...rely on good perceptual hand-eye coordination, like that which is necessary when you are catching, kicking, shooting, throwing, or hitting some moving object (i.e., ball),” and that “the skills that athletes have and need are similar to those that are needed for these items.”

Participants rang a bell to signal the start and finish of the tasks; the experimenter measured time with a stopwatch. After the MR task, the men completed the questions about their background and percep-

tions of the task. We later debriefed participants in person or by email.

## Results

### Overview

To examine the effects that athletic identity and relevance of the task to athletic affiliation had on the MR performance in male athletes, we entered the three performance measures (raw score, adjusted score, and time), into separate 2 X 2 (Athletic Identity x Task Relevance to Group Affiliation) ANOVAs. The means, SDs, and Fs from these are in Table 1. Following the ANOVAs, two factor analyses (one each for efficacy and background measures) were calculated. These analyses produced factors that were used in correlations with the performance measures in order to assess relationships with MR. Factors correlated to MR ability were used as covariates to see whether the observed patterns remained when aspects of background and self-beliefs were held constant.

### Effects of Athletic Identity and Relevance of Task to MR Performance

As can be seen in Table 1, there were no significant main effects of task relevance to identity for any of the performance measures. However, those men who were athletes ( $M = 12.42$ ) had raw scores that were marginally better than those men who were nonathletes ( $M = 10.82$ ), partial  $\eta^2 = .05$ ; a similar pattern was revealed for adjusted score ( $M_s = 9.35$  vs.  $6.94$  for athletes and nonathletes, respectively), partial  $\eta^2 = .05$ . Time to do the MRs was not affected by the rele-

**TABLE 2****Results of Factor Analysis of Efficacy Measures**

Efficacy Measures	Factor 1 "Rotational Ability"	Factor 2 "Evaluation Concern"	Factor 3 "MR Usage"
Pressure to do Well	-.32	.66*	.16
Task Difficulty	.73*	-.26	.24
How Well Tasks Completed	.88*	-.01	.12
Experience with MR	.41	.50	.59*
Effort Expended	.58	.29	.46
Pressure to be Fast	.17	.84*	-.19
Frustration Experienced	-.85*	.27	.19
Daily Use	-.02	-.15	.88*

Note. Measures marked with stars \* were used to form each factor.

**TABLE 3****Results of Factor Analysis on Background Measures**

Background Indices	Factor 1 "Chemistry Bkgd"	Factor 2 "Athleticism"	Factor 3 "Math/Video Bkgd"	Factor 4 "Science/Art Bkgd"
Math Ability	.06	.05	.81*	.12
Art/Design Ability	-.11	-.01	.15	.84*
Sports Ability	-.05	.78*	.19	.19
Science Facility	.50	-.11	.03	.63*
Number of Chemistry Classes Taken	.91*	-.01	-.60	.02
Organic Chemistry	.86*	.04	.13	-.05
Years Played College Sports	-.17	.85*	.09	-.13
Years Formerly Played College Sports	-.14	.20	-.49	.37
Years Played High School Sports	.31	.72*	-.13	-.10
Video Game Use	.12	.19	.62*	.13

Note. Measures marked with stars \* were used to form each factor; Bkgd = Background.

vance of the task to identity or athleticism, and unlike the findings with female athletes reported by Valentine et al. (2004), there were no significant interactions between these two factors.

**Background and Efficacy Measures**

We then examined whether elements of background of task efficacy mitigated MR performances, by calculating separate Principal Components factor

analyses with varimax rotation on efficacy and background measures. The factors formed are displayed in Tables 2 and 3. The first factor analysis with efficacy produced three factors from the eight original measures that accounted for 72.56 % of the variance. The first we called *Rotational Ability* which included the perception of task difficulty, how well the tasks were completed, and the lack of frustration felt. The second factor was termed *Evaluation Concern* and

TABLE 4

## Correlations of Background and Efficacy Factors with Performance Measures

Factor	Measure		
	Raw Score	Adjusted Score	Time, in s
Rotation Ability	.17	.33**	-.06
Evaluation Concern	-.17	-.15	-.01
MR Usage	-.15	.05	.10
Chemistry Background	-.01	-.01	.13
Athleticism	.24*	.19	.06
Math/Video Facility	.19	.24*	.08
Science/Art Background	-.10	-.02	.01

Note.  $N = 65$ . \*  $p < .05$ , \*\*  $p < .01$ , two-tailed.

included perceived pressure to do well and pressure to be fast. The third factor, named *MR Usage*, included having experience with MR, and how often the skills are called upon daily.

The second factor analysis, using background measures, reduced the 10 measures to four factors which accounted for 66.39 % of the variance. The first factor was named *Chemistry Background* and was comprised of the number of chemistry classes taken and whether organic chemistry was one of the courses. The second factor was termed *Athleticism* and took into account those measures regarding perceived sports ability, number of years playing college sports, and number of years playing high school sports. The third factor was named *Math/Video Background* and included the perception of math ability and the amount of video game use per week. The final factor, named *Science/Art Background*, included a perceived art and design ability coupled with the perception of science facility. We then obtained a score for each factor taking the mean of each item that contributed to it and reversed scoring when a measure was negative.

### Relationship of Factors to MR Performances

Correlations between the three performance measures (raw score, adjusted score, and time), the factors from the background, and efficacy measures for the entire sample are in Table 4. The results showed that only self-reported athleticism was positively related to raw score,  $r(63) = .24$ ,  $p < .05$ , but that no other relationships were significant. Correlations between adjusted score and the factors produced two significant positive relationships, one with rotation ability,  $r(63) = .33$ , and the other with self-reported facility with math/video games,  $r(63) = .24$ , both  $ps < .05$ . These were the only significant correlations found

between adjusted scores and factors. No significant correlations were produced between the time performance measure and the factors.

The 2 X 2 ANOVAs were recalculated holding athleticism, rotation ability and math/video facility constant, because these factors were significantly correlated with performance scores. Only one covariate reached significance in one analysis. Rotation ability was significant to adjusted score,  $F(1, 58) = 5.47$ ,  $p < .02$ , partial  $\eta^2 = .09$ , but no other covariates were significant, all  $F_s(1, 58) < 1.60$ , all  $ps > .20$ . The ANCOVA did not alter the findings concerning the lack of influence of task relevance to identity ( $F_s$  remained  $< 1$ ). However, the marginal influence of athleticism on performance (measured by raw and adjusted score) disappeared when the covariates were added in, all  $F_s(1, 58) < 1$ .

## Discussion

The results of this study revealed that equating the skills needed for MR tasks with those used in sports did not adversely impact male athletes' ability to perform rotations. Athletes performed slightly better than nonathletes, but that small advantage disappeared when rotation ability, self-reported athleticism (based on both experience and self-judgment), and facility with math was held constant. If the men viewed themselves as athletic, they tended to have higher raw scores on MR. If they saw themselves completing the task easily with little frustration as with math and video games, then they made fewer errors of commission (by choosing incorrect items). These findings stand in marked contrast to those reported by Valentine et al. (2004), who found that female athletes performed poorly on MR tasks when they were told that the skills needed for MR were like those that they possessed, but that nonathletes' MR abilities were not influenced by drawing a link between athletic and MR skill. In that study, athletic background was not related to any performance measure, but paralleling these findings, math and chemistry experience were related to MR ability.

Male athletes' MR abilities may not have been influenced by highlighting the relevance of the task to athletic skill, because men are, in general, spatially capable. They have a lot of spatial skill acquired by informal play during childhood and adolescence and are encouraged from a young age to participate in activities (such as sports and toys) that involve using rotation; whereas girls receive less encouragement to do spatially-oriented tasks and games (Newcombe et al., 1983; Stericker & LeVesconte, 1982; Voyer & Isaacs, 1993). With this in mind, men should, in general, be equally good at MR tasks regardless of athletic identity. Because the men were equally good, however, that

does not mean that they were uniformly excelling at the task, as no “ceiling effect” was shown for any group.

A more likely explanation that making salient the relevance of the skills used in the task to the skills needed for sports did not impact male athletes is that they did not experience strong threat. Men are not only superior at rotations (Voyer et al., 1995), but they are accurately perceived by themselves and others as possessing this skill (Halpern, 2000), and therefore may not have been concerned about “showing up” their group (Steele, 1997). Because male athletes did not experience stereotype threat in this situation does not mean that they are generally impervious to threat. Stone (2002), for example, found that some male athletes will perform poorly if they perceive that “natural athleticism” is being tested. Even if the men thought that there was an implicit threat, they would still probably rise to the occasion, either because the task was easy to them (O'Brien & Crandall, 2003), or because highlighting group achievements can lead to increased ability (McIntyre, Paulson, & Lord, 2003). Therefore, the men were probably unconcerned with beliefs about the group and did not self-impose pressure, experience fear of failure, or have low expectations of themselves, so that they could focus fully on the task.

Although our findings are consistent with some of the literature regarding men's performance with MR, there were some methodological problems in our design that, if alleviated, may have provided a clearer pattern of data. For example, one of the experimenters was a collegiate athlete, and those athletes who participated with her (28 participants; identities of whom are not known) may have perceived more pressure to perform well due to an implicit emphasis on group identification than those who participated with the other, nonathlete experimenter. In the Valentine et al. (2004) study, both experimenters were athletes. Beyond this difference in experimenter status, every other aspect of the experiments (from testing venue to stimulus materials) were alike. Second, while we took into account whether men played sports in high school, we did not measure how long they played, nor did we evaluate how important sports was to their life and self-concept. In future research, all this information should be obtained.

Our results suggest that men, unlike women, are able to perform MR tasks even with a stereotype threat “in the air,” and may provide insight as to how to improve women's abilities in this domain. Men know that they can do the tasks and that other men do them. Creating a similar situation for women by providing them with instances of group achievement in MR, along with a clear understanding that their training as athletes has helped shaped their spatial abilities,

may improve their confidence (McIntyre et al., 2003). It is therefore necessary, for both men and women, to increase the recognition that their capabilities to acquire, hone, and employ the skills that will aid their full development that can help them in all cognitive domains—as well as on the playing field.

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Sincere appreciation is expressed for the hard work on the part of the following individuals who served as reviewers for articles processed July to September, 2005. Without the assistance of such dedicated professionals, the *Psi Chi Journal* would not be able to function.

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Psi Chi annually sponsors national undergraduate and graduate research award competitions, as well as research awards for members submitting the best research for the regional and national paper/poster sessions. In addition, Psi Chi also sponsors grant programs to fund student and faculty research. Psi Chi's award and grant programs now provide up to \$250,000 to members annually. Descriptions of the award/grant competitions follow. Further information and submission forms may be obtained from the Psi Chi website ([www.psichi.org](http://www.psichi.org)).

## Guilford Awards

All Psi Chi undergraduate members are eligible to submit their research for the Psi Chi/J. P. Guilford Undergraduate Research Awards. Cash awards are \$1,000 for first place, \$650 for second place, and \$350 for third place. In addition, all winners and their faculty research advisors receive award certificates. The abstracts of the winning papers, as well as photographs and brief biographies of the top three winners, are published in *Eye on Psi Chi*. The deadline for this award is May 1.

## Allyn & Bacon Awards

The Psi Chi/Allyn & Bacon Psychology Awards, sponsored 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. In addition, all winners and their faculty research advisors receive award certificates. The abstracts of the winning papers, as well as photographs and brief biographies of the top three winners, are published in *Eye on Psi Chi*. The deadline for this award is May 1.

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The Psi Chi/Erlbaum Awards in Cognitive Science, sponsored by publisher Lawrence Erlbaum Associates, Inc., are open to all Psi Chi undergraduate and graduate Psi Chi members and are awarded to those who submit the best overall empirical studies in the area of cognitive science. The awards are \$500 for the first-place graduate student and \$500 for the first-place undergraduate student. In addition, the winners and their faculty research advisors receive award certificates. The abstracts of the winning papers, as well as photographs and brief biographies of the top two winners, are published in *Eye on Psi Chi*. The deadline for this award is May 1.

## Newman Graduate Award

All psychology graduate students are eligible to submit their research for the Psi Chi/APA Edwin B. Newman Graduate Research Award. The winner receives the following: (1) travel expenses to attend the APA/Psi Chi National Convention to receive the award, (2) a three-year subscription to an APA journal of the winner's choice, and (3) two engraved plaques, one for the winner and one for the winner's psychology department as a permanent honor to the winner. In addition, the abstract of the winning paper, as well as a photograph and brief biography of the winner, is published in *Eye on Psi Chi*. This award is presented during the prestigious APA/APF Awards ceremony at the APA/Psi Chi National Convention in August. The deadline for this award is February 1.

## Bandura Graduate Award

All psychology graduate students who are Psi Chi members and graduate student affiliates of the American Psychological Society (APS) are eligible to submit their research for the Psi Chi/APS 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. The deadline for this award is February 1.

## Regional Research Awards

All Psi Chi members (undergraduate and graduate) are eligible to submit their research for the Regional Research Awards. Cash awards of \$300 each are presented to students submitting the best research papers to Psi Chi sessions at regional conventions. The number of awards in each region varies based on the size of the region; a total of 78 awards of \$300 each are available for the academic year. Award monies are distributed at the conventions following the presentations. The Psi Chi regional vice-presidents each send a Call for Papers and a letter to the Psi Chi chapters in their respective regions during the fall. These letters include information about the Regional Research Awards, the regional conventions, and submission deadlines for Psi Chi programs. Deadlines for submissions vary according to region; check your fall regional mailing or the Psi Chi website ([www.psichi.org](http://www.psichi.org)) for details.

## **National Convention Research Awards**

All Psi Chi members (undergraduate and graduate) are eligible to submit their research for the National Convention Research Awards. Cash awards of \$300 for undergraduate and \$500 for graduate are presented to students submitting the best research for Psi Chi sessions at the APA and APS national conventions. Up to 16 awards are given: eight for the APA Convention and eight for the APS Convention. Award monies are distributed at the conventions following the presentations. The deadline for submissions to the Psi Chi student sessions at both the APA and APS conventions is December 1.

## **Undergraduate Research Grants**

All undergraduate Psi Chi members are eligible to apply for these undergraduate research grants. The purpose of this program is to provide funds for members to defray the cost of conducting a research project. Applicants may request up to \$1,500 for each project. A total of \$45,000 has been allotted for this student grant program. The deadline for this grant program is October 1.

## **Summer Research Grants**

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 nationally recognized research institutions. During the academic year, Psi Chi will award 10 grants of \$3,500 (a stipend of \$2,500 to the Psi Chi student plus \$1,000 to the sponsoring faculty member at the research institution). The deadline for this grant program is March 30.

## **NSF/REU Grants**

All undergraduate Psi Chi members are eligible to apply for these summer research grants, which are offered by Psi Chi in conjunction with the Research Experiences for Undergraduates (REU) program sponsored by the National Science Foundation (NSF). The purpose of this program is to provide funds for members to conduct summer research at nationally recognized research institutions that have been identified by NSF as REU sites. This research must be conducted while still an undergraduate, not after graduation. Psi Chi will award a total of six grants to fund Psi Chi members who qualify for an NSF/REU grant during the academic year. A total of \$30,000 has been allotted for this grant program. The deadline for this grant program is spring (check Psi Chi website for further details at [www.psichi.org](http://www.psichi.org)).

## **Faculty Advisor Research Grants**

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). Two grants will be awarded annually within each of Psi Chi's six regions, for a total of 12 grants. The maximum amount of each grant will be \$2,000. The deadline for this grant program is June 1.

## **Hunt Research Grants**

All Psi Chi student and faculty members are eligible to apply for a Thelma Hunt Research Grant. Up to three 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. Unlike other national Psi Chi award/grant programs, the Hunt Grants focus on research directly related to the mission of Psi Chi. The deadline for this grant program is October 1.

## **Undergraduate Psychology Research Conference Grants**

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. Funding is not available for conferences intended for students from a single school. If a single school organizes the conference (and invites other schools), the school submitting an application must have a Psi Chi chapter. If a consortium of schools organizes the conference, at least one member of the consortium must have a Psi Chi chapter in order to be eligible to apply. The maximum grant for each conference is \$1,000. The deadline for this grant program is October 1.

## **SuperLab Research Grants**

All undergraduate and graduate Psi Chi members are eligible to apply for these research grants. The purpose of this program is to provide annual grants to aid one undergraduate and one graduate student in conducting computer-based research. Grant winners receive a copy of SuperLab experimental lab software and a response pad from Cedrus®. The deadline for this grant program is October 1.

# PSI CHI

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