EVERYDAY OBAMAS: HOW UNATTAINABLE ROLE MODELS
AFFECT PERFORMANCE UNDER THREAT

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DEDICATION

This thesis is dedicated to my parents and grandparents who have wholeheartedly supported my academic endeavors.
Everyday Obamas: How Unattainable Role Models Affect Performance Under Threat
by
Meghan Elizabeth McDonald
Master of Arts in Psychology
San Diego State University, 2012

Social comparison research shows that when people compare themselves with successful and unattainable others (i.e., engage in an upward comparison), they feel worse about themselves. However, very little social comparison research has looked specifically at how people who are already threatened (e.g., those who are negatively stereotyped) may feel after exposure to unattainable and successful others. Accordingly, the current study directly explores how attainability affects performance under stereotype threat and non-threat conditions. Stereotype threat is the phenomenon by which members of a stereotyped group underperform on certain tasks due to concerns about confirming a group-relevant stereotype. Prior research has found that in stereotype threat situations, threatened individuals perform better following upward comparisons with an ingroup role model—a successful other who shares an important identity (such as gender or race) with the threatened individual. Because of their counter-stereotypical nature, role models are thought to buffer the performance of those experiencing stereotype threat. Although researchers have begun to establish some of the necessary qualities that enable role models to effectively neutralize the effects of stereotype threat, researchers have yet to test whether a role model’s accomplishments must be considered attainable. The current study investigated the effects of role model attainability on performance within a novel stereotype threat paradigm. Participants were 99 SDSU undergraduates. To manipulate stereotype threat, participants were reminded of the negative academic reputation associated with students at their school compared to students at a nearby school (i.e., UCSD). The current study used a 2 (Test Description: threat, no threat) x 3 (Role Model Exposure: no exposure, attainable role model, unattainable role model) between-participants design. It was hypothesized that when individuals were not exposed to a role model, performance would be better in the no threat condition compared to the stereotype threat condition. This hypothesis was supported, suggesting that stereotype threat can be triggered based on school affiliation. In the stereotype threat conditions, it was hypothesized that exposure to either of the role models would increase performance compared to the no role model, threat condition. Moreover, it was expected that the unattainable role model would boost performance even more than the attainable role model. It was found that average performance of the two role model conditions was significantly higher than that of the threat, no role model condition; however, performance did not differ between the two role model conditions. It was hypothesized that in the no threat conditions, exposure to the attainable role model would increase performance relative to the no threat, no role model control condition, whereas exposure to the unattainable role model would decrease performance.
Contrary to the hypothesis regarding the performance of those in the attainable condition, it was found that in the no threat conditions, exposure to both the attainable and the unattainable role models decreased performance. As a whole the results demonstrate that role models are most effective when they are attainable, and that the potential benefits of role model exposure depend on whether the situation at hand is one that is “stereotyped” or not.
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INTRODUCTION

Social comparison research shows that in general when people compare themselves with successful and unattainable others (i.e., engage in an upward comparison), they feel worse about themselves. For example if Marissa (a musician) makes such a comparison with a successful, unattainable other, who is both similar to Marissa (e.g., also a musician) and who excels in a domain important to Marissa (i.e., musical composition) she evaluates herself more negatively as a result (Tesser, Millar, & Moore, 1988).

Although it is established that people often feel threatened by unattainable, successful others (Lockwood & Kunda, 1999), researchers have yet to investigate how people perform following exposure to a person with such characteristics. Moreover, very little research has investigated how threatened individuals (e.g., those who are negatively stereotyped) perform following exposure to an individual who is successful and whose accomplishments could be viewed as unattainable (Marx, Ko, & Friedman, 2009). Accordingly, the current research examined how exposure to successful and unattainable others affects performance when individuals are not threatened compared to when individuals are threatened—that is, when individuals are experiencing stereotype threat. Stereotype threat is a phenomenon defined as the situational pressure posed by the prospect of being seen or treated through the lens of a negative stereotype (e.g., Marx, Brown, & Steele, 1999; Steele, 1997). As a result of this situational pressure individuals unwittingly perform in a stereotype-consistent manner (Spencer, Steele, & Quinn, 1999; Steele & Aronson, 1995).
Festinger’s (1954) social comparison theory makes many specific predictions regarding how people evaluate themselves within a given social context. In general, the theory maintains that individuals seek to accurately evaluate themselves, which often occurs by comparing themselves to similar others. Since the development of social comparison theory, many researchers have replicated and extended Festinger’s work, seeking to determine which conditions result in social comparisons and to understand what influences the direction of these social comparisons (for review see Buunk & Gibbons, 2007).

Specifically, Tesser’s self-evaluation maintenance (SEM) model outlines when social comparisons will result in either contrast or assimilation effects regarding self-evaluation (Blanton, Crocker, & Miller, 2000; Tesser et al., 1988). Contrast means that the effect of the comparison on one’s self-evaluation is in the opposite direction of the comparison. That is, upward comparisons (i.e., those in which the comparison other is better than the self) result in decreased self-evaluations, and downward comparisons (i.e., those in which the comparison other is worse than the self) result in increased self-evaluations. For example when Jen, who received a B on a project, compares herself to a classmate who received an A on the project (i.e., an upward comparison), Jen evaluates her academic ability more negatively. Assimilation, on the other hand, means that the direction of the self-evaluation matches that of the comparison. For instance, when Liz, who also received a B on the project, compares herself to a classmate with an A, she feels more positively about her academic
ability. In the case of assimilation, upward comparisons result in increased self-evaluation and downward comparisons result in decreased self-evaluation.

**Other Similarity and Domain Relevance**

Importantly, the SEM model posits that social comparison outcomes depend on how similar the comparison other is to the individual engaging in the comparison, as well as how important the comparison domain is to the individual (Tesser et al., 1988). When the comparison other is not similar to the individual, self-evaluation will not take place. However, when the comparison other is similar to the individual, self-evaluation becomes contingent on whether the comparison other excels in a domain that is important to the individual or not. Within the social comparison literature, similarity has been operationalized in various ways, ranging from having the same major (Lockwood & Kunda, 1997) to being members of an arbitrary group (Brewer & Weber, 1994). Examples of comparison domains can include academic, athletic, or artistic domains. Ultimately, the SEM model predicts that when the similarity of the other with the individual is high and the self-relevance of the domain is also high, contrast effects will occur.

**Social Comparisons and Other Attainability**

Social comparison literature suggests that whether a comparison other’s accomplishments are viewed as attainable or not also affects whether contrast or assimilation will occur. Though Tesser’s SEM model maintains that contrast will result following an upward comparison with a similar other on a relevant domain, Lockwood and Kunda (1997) argue that assimilation can occur under these circumstances, but only if the comparison other’s accomplishments are also attainable. If the accomplishments are unattainable, individuals will feel threatened. Lockwood and Kunda (1997) exposed participants to a
successful other who shared the same major as the participants and who excelled in the same professions that the participants intended to pursue. These researchers found that an upward comparison with an attainable other resulted in more positive effects on participants’ self-evaluations compared to a comparison with an unattainable other. These findings thus provide support for the notion that comparison others need to be perceived as attainable in order for assimilation to occur following an upward comparison with a similar other in a domain that is important and relevant to the self.

Despite the evidence that people often feel threatened by unattainable, successful others, research has yet to examine how such upward comparisons impact behavior (i.e., performance). Additionally, although researchers have investigated how already threatened individuals (e.g., individuals who are made aware of an existing negative stereotype about a group to which they belong) respond to successful others (Marx & Roman, 2002; Marx, Stapel, & Muller, 2005; McIntyre, Paulson, & Lord, 2003), it is unknown how these threatened individuals would respond to unattainable, successful others as no such research to date has systematically varied other attainability. Being that upward comparisons typically result in contrast regarding self-evaluation, one might intuitively expect that the same will occur regarding performance, and that already threatened individuals would feel even more threatened after exposure to a successful other, leading them to perform even worse on a self- and stereotype-relevant task. Research on stereotype threat and role models (e.g., Marx & Roman, 2002), however, shows the exact opposite effect—that is, exposure to a successful other is beneficial rather than detrimental to performance. This trend has been illustrated specifically in research on how role models can be used as an intervention to stereotype threat.
STEREOTYPE THREAT AND ROLE MODELS

Women often experience stereotype threat because they are negatively stereotyped in math-related areas. As a result, women perform comparatively worse than men on difficult math tasks when stereotype threat is present (Spencer et al., 1999). Prior research has found that in stereotyped contexts, threatened individuals perform better following comparisons with a successful other, provided they share an identity (such as gender or race) with this successful other. This phenomenon is termed the “role model effect” (Marx & Roman, 2002) and has proven to be an effective intervention for counteracting the performance deficits that accompany stereotype threat.

In the first demonstration of the role model effect Marx and Roman (2002) reminded female participants of the negative gender stereotype that women are bad at math and found that women’s math performance was better after interacting with a math-competent female experimenter (an ingroup role model) compared to a math-competent male experimenter (an outgroup role model). It was reasoned that performance was enhanced because the female experimenter represented stereotype-disconfirming information and thus sent the (implicit) message that women can indeed succeed in math.

SOCIAL COMPARISONS WITH ROLE MODELS

The role model effect requires that individuals make an upward social comparison with a successful, and to some extent similar, other. Interestingly, such a comparison has assimilative (i.e., beneficial) effects on performance despite the fact that the SEM model, along with research on self-evaluation, suggests that such comparisons should result in
contrastive (i.e., detrimental) effects. While social comparison research has established that a more successful other is ordinarily considered threatening, stereotype threat research demonstrates that negatively stereotyped individuals may view a more successful other as a role model rather than a threat (Marx et al., 2005). Given the differential effects that occur in stereotyped and non-stereotyped situations regarding self-evaluation as a result of exposure to a successful other, the current study sought to establish if such differential effects also occur regarding performance. More specifically, in the current study the effects of role model attainability on performance were explored under both non-stereotyped (i.e., comparison situations in which stereotype threat is absent) and stereotyped situations. Social comparison research has established that successful others can be seen as non-threatening only if their accomplishments are also attainable; if their accomplishments are unattainable, they will be seen as a threat and will not serve as an inspiring role model. Nonetheless, it is unclear how unattainable others would be perceived by individuals experiencing stereotype threat. Thus, the present research sought to explore this issue.

**ROLE MODEL ATTRIBUTES**

Previous work has established necessary boundary conditions for role models to be successful at neutralizing the negative effects of stereotype threat. Specifically, they must be perceived as competent and an ingroup member, while their successes must be evident and in the domain in which the role model's group is traditionally negatively stereotyped (Marx et al., 2009). Interestingly, the reasons that lead a comparison other to be viewed as a threat in non-stereotyped situations—similarity and success in a relevant domain—are the precise reasons that allow these comparison others to be viewed as inspiring role models in stereotype threat situations. Though it has been established that role models must possess
these three characteristics (competence, shared group membership, and success in a relevant
domain), research has not yet considered whether the successes of these role models must be
considered attainable or not. While attainability seems to determine the direction of self-
evaluation in non-stereotyped social comparisons, it may not play the same determining role
regarding performance within stereotype threat situations.

Although the influence of role model attainability has not been directly assessed in
stereotype threat contexts, there is indirect evidence to suggest that unattainable role models
can be beneficial in stereotype threat situations. Specifically, Marx et al. (2009) documented
what they call the “Obama Effect”—Obama’s position as an inspiring role model for Black-
Americans positively influencing their performance under stereotype threat. Obama’s
successes during the 2008 presidential campaign would easily be considered unattainable for
most of the American population. Nonetheless, when his successes were obvious, such as just
after winning the 2008 election, Black-Americans performed better on a verbal test,
suggesting that he served as a source of inspiring, counterstereotypic information. Although
these results imply that attainability is not a necessary requirement for a role model to be
beneficial in stereotype threat contexts, a pertinent question remains: Was Obama (a well-
known public figure) simply an exception to the rule, or can unattainable (private figure) role
models be equally effective in reducing the effects of stereotype threat?
RESEARCH OVERVIEW

The current research aimed to determine whether successful, yet unattainable role models can serve as “everyday Obamas” for a group that is negatively stereotyped. This question was investigated within the framework of a novel stereotype threat paradigm, which examined the effects of role model attainability on behavior (test performance). To create a stereotype threat situation, participants were reminded about the negative stereotype associated with the school they attend (i.e., San Diego State University; SDSU). More specifically, students participating in the study were reminded of the negative stereotype concerning the intellectual ability of students at SDSU compared to the ability of students from a nearby school (i.e., University of California, San Diego; UCSD). This novel paradigm was chosen to shed light on how school affiliation may trigger stereotype threat. Although the stereotype chosen for the current research is specific to one geographic location, similar stereotypes may operate nationwide; therefore researching such populations adds to the stereotype threat literature, as well as to the practical importance of implementing stereotype threat interventions at an institutional level—a consideration that has not been investigated previously.
PILOT STUDY

A pilot study was conducted to establish whether or not SDSU students are aware of the negative stereotype associated with their school, as well as to assess endorsement of the stereotype. Sixty-six SDSU undergraduates participated for partial course credit. Participants completed the study on computers in individual cubicles. Upon arrival to the laboratory, participants were told that they would be completing a study about college students’ perceptions of various colleges in the San Diego area and that they would be randomly assigned to compare two schools. All participants were then told that they would be comparing SDSU and UCSD.

The first task that participants completed was designed to assess their implicit endorsement of the negative stereotype that SDSU students are academically inferior to UCSD students. This task asked participants to indicate how characteristic 20 different traits are of students at SDSU compared to students at the UCSD. Two traits relating to academic abilities (i.e., studious, intelligent) were used to represent the competence dimension of the Stereotype Content Model (SCM), which posits that group judgments are made along two fundamental dimensions, competence and warmth, and that these dimensions are negatively correlated (Judd, James-Hawkins, Yzerbyt, & Kashima, 2005). Two traits relating to social skills (i.e., outgoing, sociable) were chosen to represent the warmth dimension of the SCM. The four traits of interest were randomly presented alongside filler items (e.g., athletic, obnoxious). Participants responded by using a 7-point scale labeled with the phrases (1) more true of students at SDSU, (4) equally true of students at both schools, and (7) more true of students at UCSD.
Responses to the competence items (i.e., intelligent and smart) were significantly correlated \( (r = .39, p = .001) \). To determine if UCSD students were seen as more competent than SDSU students, an average composite competence variable was created from the responses of the two items. Numbers above the midpoint (4) indicate greater association of competence with students at UCSD, and consequently reflected endorsement of the stereotype that students at UCSD are more academically adept compared to those at SDSU. Results revealed that the mean response to the competence variable (4.86) was significantly higher than the scale’s midpoint (4), \( t(65) = 9.39, p < .001 \), meaning that students at UCSD were more associated with competence than were students at SDSU. Therefore, participants’ responses indicated implicit endorsement of the negative stereotype associated with students at SDSU.

The warmth items (i.e., outgoing and sociable) were analyzed to rule out the possibility of a positivity bias toward students at UCSD. It was expected that while students at UCSD were seen as more academically competent, those at SDSU would be judged as more sociable. The items representative of warmth, sociable and outgoing, were significantly correlated, \( (r = .37, p = .002) \). Therefore, an average composite warmth variable was created from the responses of the two items. Numbers below the midpoint (4) indicate greater association of warmth with students at SDSU. Results revealed that the mean response to the warmth variable (2.71) was significantly lower than the midpoint (4), \( t(65) = 11.07, p < .001 \), indicating that SDSU students were more associated with sociability/warmth than were UCSD students. Unfortunately, and as would be expected given the SCM, the correlation between the competence and warmth variables, did not reach significance \( (r = -.095, p > .05) \), though it was in the direction (negative) consistent with the logic of the SCM.
Nevertheless, these results provide clear evidence that UCSD students were seen as more intelligent in general, and they rule out the possibility that UCSD students were rated more positively overall.

The second task was designed to capture participants’ knowledge of the stereotype about SDSU students and intelligence. Participants were asked to indicate the extent to which people in general would agree with four statements. Two of the statements asked about SDSU in comparison to UCSD, while two asked about California State University schools (CSU schools) relative to University of California schools (UC schools). Within each of the two types of statements, participants were either asked specifically about students at the respective schools or about the schools themselves. Participants responded using a 7-point scale labeled as (1) strongly disagree (4) neither agree nor disagree and (7) strongly agree.

For the statement “In general, people would agree that students at San Diego State University (SDSU) are not as smart as students at University of California, San Diego (UCSD),” the average response (5.08) was significantly higher than the midpoint (4), \( t(65) = 8.05, p < .001 \), reflecting greater agreement. For the statement, “In general, people would agree that San Diego State University (SDSU) is a better school than the University of California, San Diego (UCSD)” the average response (3.48) was significantly lower than the midpoint (4), \( t(65) = 3.30, p = .002 \), reflecting greater disagreement with the statement.

Taken together, these results indicate that there is a common perception that SDSU students are not considered as bright as UCSD students, and that SDSU is generally considered a worse school than UCSD. Thus, participants’ appear to be aware of the negative academic stereotype concerning the students and school they attend.
For the statement, “In general, people would agree that students who attend University of California schools (i.e., UC schools) are smarter than students who attend California State University schools (i.e., CSU schools)” average agreement (5.32) was reliably higher than the midpoint (4), $t(65) = 9.76, p < .001$. For the statement “In general, people would agree that University of California schools (i.e., UC schools) are worse than California State University schools (i.e., CSU schools)”, the average response (2.52) was significantly lower than the scale’s midpoint (4), $t(65) = 9.01, p < .001$ indicating greater disagreement with this statement. These findings suggest that the negative stereotype concerning SDSU in relation to UCSD is part of an even broader stereotype concerning the California State University system as a whole in comparison to the University of California system.

In sum the pilot data demonstrate that SDSU students are not only aware of the negative stereotype associated with their school, but also that they endorse this stereotype to some extent. Thus, there is evidence that the current stereotype threat paradigm should be an effective means to test whether a role model must be perceived as attainable in order to reduce the negative performance consequences of stereotype threat.
HYPOTHESES: PRIMARY STUDY

It was predicted that when SDSU participants were made aware of a negative stereotype regarding the intelligence of the SDSU student body, these participants would perform worse on a knowledge test than those who were not made aware of such a stereotype. This prediction was made based on classic stereotype threat work, which has consistently demonstrated that negatively stereotyped individuals perform worse on a stereotype-relevant task when the associated stereotype is made salient (Spencer et al., 1999; Steele & Aronson, 1995).

In the stereotype threat conditions, it was hypothesized that exposure to either of the role models (regardless of their attainability) would increase performance compared to the stereotype threat condition in which participants were not exposed to information about a role model. Thus, we expected the role model effect to emerge, such that participants’ experience of threat would be alleviated when exposed to a role model (i.e., a successful student who likewise attends SDSU). Moreover, it was expected that exposure to the unattainable role model would boost performance even more than exposure to the attainable role model. This was predicted because the accomplishments of the unattainable student were expected to be even more inspiring than those of the attainable role model.

In the no threat conditions, it was predicted that the attainable role model would enhance performance relative to the no threat, no role model condition. Because participants

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1 The subsequent use of the term role model throughout the paper does not imply that participants will benefit from exposure to these individuals. In some cases, the role model is not expected to benefit participants’ performance; however, the term is used for consistency of referring to conditions.
in the no threat conditions are not negatively stereotyped, comparisons with an unattainable role model should be threatening (Lockwood & Kunda, 1997) rather than inspiring. Unlike those who are already threatened, those in the no threat condition should not benefit from sharing an identity with an unattainable role model. Therefore, compared to the performance of those in the attainable condition, performance should suffer for those exposed to the unattainable role model. Similarly, because the unattainable role model should be seen as threatening rather than inspiring in the no threat condition, performance should likewise suffer for those in the unattainable condition compared to the no exposure condition.
METHODS

PARTICIPANTS AND DESIGN

A total of 99 SDSU undergraduates took part in exchange for course credit. The study consisted of a 2 (Test Description: threat, no threat) x 3 (Role Model Exposure: no exposure, attainable role model, unattainable role model) between-participants design.

PROCEDURE

Prescreen measure. In order to ensure that the role model would be seen as having an important identity in common with the participants, potential participants completed an online prescreen measure that assessed the extent to which they identified with SDSU. Specifically, potential participants were asked about their agreement with the following statement: “I am proud to be an SDSU Aztec.” Response options ranged from (1) strongly disagree to (7) strongly agree. Those who responded with a (5) or greater on the 7-point likert scale were eligible to participate in the laboratory component of the current study.

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2 The number of participants necessary for this study was determined by conducting a power analysis. In order to have a 81% chance of detecting a moderate effect size ($\eta^2 = .075$), 106 participants would be required. Therefore, the total number of participants obtained ($n = 99$) reflects an approximately 80% chance of detecting an effect size of .075.

3 In the initial proposal of this thesis, the design included four role model exposure conditions rather than three. However, for the sake of parsimony and concern for conserving the eligible pool of participants, one of the initial conditions was excluded.

4 Prescreen questions also included a measure ($\alpha = .64$) that asked about the extent to which participants identified with academics more generally. For example an item asked potential participants to indicate their agreement with the statement, “It is important that I do well in my classes”. All participants who were eligible to participate in the laboratory component of the study also appeared to be highly identified with academics.
Upon arriving to the laboratory, participants were directed to individual cubicles with computers and were informed by an experimenter that they would be completing a series of unrelated tasks regarding student life and academics. All subsequent instructions were displayed on the computer screen. First, stereotype threat was activated for those in the threat condition, and all participants were informed that they would take a knowledge test at the end of the study. Participants in the no role model exposure condition were then asked to complete a filler task, while those in the role model exposure conditions completed an impression-formation task. In this task they read an article about a fictitious SDSU student, who varied in attainability. Lastly, participants took the general knowledge test and answered a few demographic questions.

**Test Description Manipulation**

To vary whether participants were experiencing stereotype threat, participants were randomly assigned to one of two test description conditions, a threat-inducing test description or a benign test description. In both description condition, participants read an article and were informed that they would be taking a knowledge exam.

**Threat Manipulation**

The stereotype threat manipulation was presented in the form of an article, supposedly excerpted from a local newspaper. This article contained information about how students at the participant’s school (SDSU) have been consistently outperformed by students at a local school (UCSD) on intellectual tests that require both general knowledge and analytical skills. Additionally, participants were informed that as part of this study they would be taking a difficult general knowledge test, and that their scores on this test would be
compared to the scores of UCSD students to determine the extent of the observed differences in general knowledge (see Aronson et al., 1999, for a similar procedure).

**Test Description Control**

Participants in the no threat control conditions read an article about vegetarianism, so that there was no activation of a stereotype about intelligence nor the possibility of priming the construct of intelligence (for similar procedures see, Marx et al., 2012).

**ROLE MODEL MANIPULATION**

After participants in the current study read about intelligence differences or vegetarianism, those in the role model exposure conditions were asked to complete an impression-formation task in which they read an article about a fellow, same-gender SDSU student (see Lockwood & Kunda, 1999, for a similar procedure). The description of the student varied in attainability, and participants in both the stereotype threat and no threat conditions were randomly assigned to read one of two descriptions—attainable or

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5 The threat manipulation was intended to create the sense that participants were negatively stereotyped on intelligence by virtue of their school affiliation. In order to determine whether this manipulation successfully induced threat based on school affiliation, a pretest was conducted which consisted of a one-way (Test Description: threat, no threat) between-participants design. Nine SDSU undergraduate students participated in this pretest. Participants were informed that the study they were participating in concerned aspects of academics and student life. Then they were exposed to the threat test description (i.e., the article about intelligence differences between SDSU and UCSD students) or the control test description (i.e., the article about vegetarianism).

After reading about the randomly assigned topic, all participants responded to a threat-based concern measure consisting of three items ($\alpha = .88$), which were intended to capture participants’ perceived experience of threat (see Marx et al., 2005, for a similar measure). An example of an item included in the measure asked participants to indicate the extent to which they agreed with the following: “I worry that my ability to perform well on academic tests is affected by being an SDSU student.” The response scale ranged from (1) strongly disagree to (7) strongly agree.

Participants’ threat-based concern responses were averaged to create a composite score. Results indicated a significant difference between the two groups ($t(7) = -2.55, p = .038$), such that those in the threat condition ($n = 4$) reported higher threat-based concerns ($M = 2.93, SD = 1.16$) in comparison to those in the no threat condition ($n = 5; M = 1.42, SD = .16$). This pretesting served as evidence that the threat manipulation used was effective in eliciting stereotype threat based on school affiliation.
unattainable. Attainability was conceptualized as the belief that one could accomplish the same level of success as the role model. Thus, for both role model conditions, attainability was manipulated by varying the overall success of the role model as indexed by the following accomplishments: cumulative GPA, number of majors, length of time to complete degree, current plans after graduation, and level of involvement in extracurricular activities. In addition to this academic, career, and school involvement information, each role model was portrayed as socially competent. This social competence information was included so that both role models would be perceived as well-rounded individuals, who only varied in the extent to which participants felt they could obtain a comparable level of overall success in their own lives as students.

**Attainable Role Model**

Since previous research has shown that role models are beneficial and inspiring when their achievements are slightly above one’s own (Lockwood & Kunda, 1997), the attainable role model’s accomplishments were intended to be slightly above the average SDSU student’s. More specifically, the role model was described as a fourth year senior who currently had a 3.08 GPA and would be graduating with one major from the College of Sciences. (The average GPA for SDSU undergraduates is 2.94.) The student would also be walking in the spring graduation ceremony, but would be taking summer session classes to complete his or her degree. The student expressed plans to apply for jobs in the San Diego area while he or she finished summer classes. In order to convey that the student was socially competent, the attainable role model was portrayed as a student who participates in typical college activities, such as attending basketball games and going to the movies with friends.
Unattainable Role Model

The unattainable role model was depicted as a top SDSU student. This student was a third year senior with a current GPA of 3.93, graduating a year early with a double major from the College of Sciences. Additionally, this student was going to be entering a Ph.D. program in the fall at a school on the east coast. The article about the unattainable role model not only included the same social competence information as that of the attainable role model, but also mentioned that this student was president of the campus-wide honor society.

Role Model Follow Up

After reading the article, participants were asked three items regarding the extent to which they perceived the role model to be attainable ($\alpha = .94$). For example, one of the items asked for agreement on the statement, “The accomplishments of this student are attainable.” Additionally, participants were asked to respond to one item assessing the extent to which the role model was seen as inspiring (i.e., “This student is inspirational for me.”) Response options of the follow up items ranged from (1) strongly disagree to (7) strongly agree.

No Exposure Control

Participants in the no role model exposure conditions were given a visual preference task in which they were shown several pairs of abstract drawings and asked to indicate which picture they preferred. This task served as a filler task for participants who were assigned to the no role model exposure condition in both test description conditions.

General Knowledge Test

Following the test description and role model exposure manipulations, participants took a general knowledge test. The general knowledge test consisted of 24 multiple choice
questions modeled after the questions used in the game Trivial Pursuit (for a similar procedure see Dijksterhuis & van Knippenberg, 1998) and four multiple choice questions modeled after logic questions used on the GMAT. In total, the test questions consisted of four questions from the following categories: Geography, History, Literature, Political Science, Natural Science, and Logic. Performance on the general knowledge test, as measured by the number of questions answered correctly, served as the primary dependent variable. Scores could range from 0-24.

Finally, all participants were asked to provide demographic information (e.g., GPA). After providing this information, participants were fully debriefed and thanked for their time.
RESULTS

MANIPULATION CHECKS

To evaluate whether the role models were seen as was intended, in terms of how attainable and inspiring participants believed them to be, I analyzed participants’ responses to the role model follow up items. It was expected that the unattainable role model would be seen as less attainable, but more inspiring than the attainable role model.

Role Model Attainability

I submitted participant’s role model attainability scores to a 2 (Test Description) x 3 (Role Model Exposure) Analysis of Covariance (ANCOVA), controlling for self-reported GPA. As expected, there was a main effect of role model exposure, such that the attainable role model’s success was rated as significantly more attainable ($M = 6.17$) than the unattainable role model’s success ($M = 5.07$), $F(1, 92) = 18.65, p < .001$ (see Table 1). No other main or interactive effects were significant ($F$s < 2.07).

<table>
<thead>
<tr>
<th>Test Description</th>
<th>No Role Model Exposure</th>
<th>Attainable Role Model</th>
<th>Unattainable Role Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role Model Attainability</td>
<td>NA</td>
<td>6.13</td>
<td>4.86</td>
</tr>
<tr>
<td>Role Model Inspiration</td>
<td>NA</td>
<td>3.72</td>
<td>5.22</td>
</tr>
<tr>
<td>Test Performance</td>
<td>13.33</td>
<td>15.22</td>
<td>14.52</td>
</tr>
</tbody>
</table>

Table 1. Mean Role Model Attainability and Inspiration Ratings, and Knowledge Test Performance Scores as a Function of Role Model Exposure and Test Description
Role Model Inspiration

Participants’ responses to the item assessing role model inspiration were submitted to a 2 (Test Description) x 3 (Role Model Exposure) ANCOVA, controlling for self-reported GPA. Results revealed a main effect of role model exposure, indicating that the unattainable role model was viewed as significantly more inspiring ($M = 5.34$) than the attainable role model ($M = 4.03$), $F(1, 92) = 13.07, p < .001$ (see Table 1, p. 21). No other main or interactive effects were significant ($Fs < 1.49$).

**PRIMARY DEPENDENT MEASURE: KNOWLEDGE TEST PERFORMANCE**

Participant’s performance on the knowledge test was submitted to a 2 (Test Description) x 3 (Role Model Exposure) ANCOVA, controlling for self-reported GPA. The only effect to emerge was the omnibus interaction, $F(2, 92) = 7.04, p = .001$ (see Figure 1).

![Figure 1. Performance as a function of role model exposure and test description conditions.](image)
To interpret this omnibus interaction I conducted tests of simple effects according to my hypotheses.

First, it was necessary to determine whether performance differed between the two no role model exposure conditions. This was done by comparing the test performance of those in the no role model, threat condition to those in the no role model, no threat condition. Participants in the threat condition \((M = 13.33)\) performed significantly worse than those in the no threat condition \((M = 15.55)\), \(F(1, 92) = 5.37, p = .02\). This result provided evidence that activating stereotype threat based on school affiliation can indeed lead to differential performance on a stereotype-relevant task.

The hypotheses regarding the stereotype threat conditions were then evaluated. An orthogonal set of contrasts compared the performance of those who were not exposed to a role model (contrast weight: -2) to the average performance of those in each of the two role model conditions (contrast weights: +1). This comparison revealed that performance in the stereotype threat (no role model) condition \((M = 13.33)\) was lower than the average performance of those in the two role model conditions \((M = 14.87)\), \(F(1, 92) = 3.94, p = .05\). This finding provided initial support for the notion that those experiencing stereotype threat performed better after exposure to a role model, regardless of whether the role model was attainable or not. However, additional results revealed that this effect was driven by performance of those in the attainable condition \((M = 15.22)\), which was marginally higher than that of the no role model condition \((M = 13.33)\), \(F(1, 92) = 3.16, p < .08\). Performance of those in the unattainable condition \((M = 14.52)\) did not significantly differ from the performance of those in the no role model condition \((M = 13.33; F < 1.59)\). Moreover, there was no reliable performance difference between the unattainable role model \((M = 14.52)\) and
the attainable role model ($M = 15.22; F < 1$). These results suggest that a role model’s accomplishments must be considered attainable to be beneficial to those experiencing stereotype threat.

Next, I tested the hypotheses concerning the no threat conditions. It was predicted that performance would be higher in the attainable role model condition as opposed to the no role model condition. However, the results were in the opposite direction, such that performance in the attainable role model condition ($M = 12.56$) was significantly lower than that of the no exposure condition ($M = 15.55$), $F(1, 92) = 8.59, p = .004$. This result is conceptually inconsistent with past social comparison research regarding attainable role models and self-evaluations. Nonetheless, it is not entirely surprising that the current results did not mirror those of past research as the current study assessed performance (i.e., behavior) while past research assessed self-evaluation (i.e., cognition). In the no threat condition, it was also predicted that the performance of those in the unattainable role model condition would be lower than those in the no exposure condition. As hypothesized, performance in the unattainable condition ($M = 12.35$) was significantly worse than performance in the no role model exposure condition ($M = 15.55$), $F(1, 92) = 9.07, p = .003$. The next comparison compared whether the performance of those exposed to the attainable role model was higher than the performance of those exposed to the unattainable role model. Yet, no significant difference was found between these two role model conditions ($F < 1$).

As there were no significant performance differences between the two role models in the threat condition, nor were there any differences between the two role models in the no threat condition, an additional analysis was performed by collapsing across role model attainability. This analysis was intended to evaluate whether there were differential effects of
role model exposure between the no threat and threat conditions. The average role model performance of those in the threat conditions (contrast weights: +1) was compared to the average role model performance of those in the no threat conditions (contrast weights: -1). This analysis revealed that the average performance of those in the threat conditions ($M = 14.87$) was significantly higher than the average performance of those in the no threat conditions ($M = 12.46$), $F(1, 92) = 9.89, p = .002$. This result suggests that exposure to role models benefits performance when individuals are already threatened (i.e., by a negative stereotype) but harms performance when individuals are not threatened.
DISCUSSION

The implications of the present study are threefold. First, the current research demonstrates that performance outcomes following exposure to role models depend on whether the testing situation is “stereotyped” or not. Second this study provided evidence that role models need to be perceived as attainable to be effective buffers against stereotype threat. Additionally, this research was the first demonstration of stereotype threat being triggered by school affiliation.

ROLE MODEL EXPOSURE AND PERFORMANCE

Although there was no support for the hypothesis that the attainable role model would boost performance in the no threat condition, there was a significant effect in the opposite direction, such that exposure to the attainable role model was detrimental to the performance of those who were not experiencing threat. Similarly, the unattainable role model also harmed the performance of those who were not made aware of the negative school-based stereotype. These results serve as evidence that when individuals are not threatened by a negative stereotype, exposure to a similar other who succeeds in an area important to the individual is detrimental to performance, regardless of their level of attainability. As predicted, the attainable role model was able to protect the performance of those experiencing threat. Though the unattainable role model did not protect the performance of those targeted by the negative stereotype in the same way that the attainable role model did, it is important to note that exposure to this role model did not harm performance. Thus, exposure to an unattainable
role model does not harm nor help the performance of those who are negatively stereotyped, but exposure to an attainable one does seem to help an individual’s performance.

**EXTENDING THE SCOPE OF SOCIAL COMPARISON RESEARCH**

It was predicted that the current research, which focused on assessing performance, would produce similar results to that of past social comparison work, which focused on assessing self-evaluations following exposure to an attainable other. However, in contrast to past work regarding role model attainability on self-evaluations (Lockwood & Kunda, 1997), the current study found that exposure to attainable role models was detrimental to participant’s performance. Interestingly, the present findings suggest that exposure to attainable role models (within a non-threat situation) does not affect performance in the same way that it does self-evaluation. It is important to note, however, that the current manipulation of attainability differed from that used in past research. Lockwood and Kunda (1997) manipulated attainability with respect to the age of participants, holding role model attributes constant. The current research, on the other hand, manipulated role model accomplishments as a way to vary attainability. One of the limitations to the current study was that participants’ self-evaluations were not measured following role model exposure. To accurately determine whether exposure to an attainable role model indeed produces differential effects on self-evaluation and performance, it would be necessary to perform a study in which both of these constructs are measured.

**SHEDDING LIGHT ON THE OBAMA EFFECT**

The primary question that this research sought to answer was whether private figure role models with largely unattainable accomplishments are able to serve as everyday Obamas
to those experiencing stereotype threat. Although the unattainable role model in the current study was seen as significantly more inspiring than the attainable role model, the unattainable role model did not buffer performance when individuals were experiencing stereotype threat, suggesting that private figure role models can only be beneficial to individuals who are threatened by a negative stereotype if their accomplishments are attainable. Moreover, the present findings imply that one of the reasons why Obama was a successful role model (Marx et al., 2009) might have been due to his status as a well-known and highly publicized figure.

**CONTENDING WITH A NEW SOURCE OF THREAT**

The finding that stereotype threat can be elicited based on school affiliation is both novel and important. As the pilot study suggested, there is a commonly held stereotype that California State University schools (and their students) are considered inferior to University of California schools. Thus, it is reasonable to believe that similar stereotypes might exist in other regions throughout the nation. As a consequence of being reminded of the negative stereotype associated with their school, students at these supposedly inferior schools may underperform on various academic tasks (e.g., the GRE). Moreover, being stereotyped based on school affiliation may be especially problematic for certain students. First-generation and English as a second language (ESL) students, for instance, may be concerned about their academic performance and intellectual ability, and may also be particularly vulnerable to discrimination based on their performance. Thus, decreased performance associated with institution-based stereotype threat, may not only perpetuate the negative stereotypes regarding these students, but may also lead these students to disengage from academic achievements or higher education more generally (e.g., Major & O’Brien, 2005; Steele, 1997). Future research should further explore the real-world consequences of stereotype
threat that arises based on the stereotypes about one’s school, as well as the types of students who are most negatively impacted by these stereotypes so that appropriate interventions can be established.

**Concluding Remarks**

The results of the current study contribute to both stereotype threat and social comparison research. This work expands on the extant stereotype threat research by demonstrating that stereotype threat can occur based on school affiliation, and that role models must be attainable to be optimally effective. Additionally, the current work suggests that one important factor that influences whether social comparisons lead to assimilative or contrastive outcomes regarding performance is the context in which the comparison is made. When an upward comparison is made in a stereotype threat context, performance is helped; however, when the same comparison is made in a non-threat context, performance is hurt.
REFERENCES


