The Impact of Stereotype Threat in Manual Labor Settings on Hispanic and African American Female Participants

Jennifer L. Flanagan, Raymond J. Green

(Texas A&M University-Commerce, Commerce, TX 75428, USA)

Abstract: Stereotype threat has been shown to cause decrements in cognitive and behavioral tasks in participants in stigmatized groups. Much of the research in stereotype threat has concentrated in the academic realm, but some researchers have studied upper-level and more academically-based job tasks as compared to those blue-collar positions. Stereotype threat has usually involved participants according to racial make-up or gender, but this paper sought to test subjects who were in both stigmatized groups in manual labor settings, and posed the question: Is there a significant difference in how females in two different minority groups react to stereotype threat? The participants, Hispanic and African American undergraduate college students, performed both behavior and academic tasks in a manual labor interview scenario, with about half in each condition (control and stereotype threat condition). Both racial groups had declines in performance between the control and the stereotype threat group, with African American females having more of a decrease in performance when stereotype threat was manipulated.

Key words: demographic economics; labor discrimination

JEL codes: J15, J16, J70, J71, J79

1. Introduction and Literature Review

There's no argument—the workplace is changing. Prior to the Civil Rights Act and establishment of the Equal Employment Opportunity Commission (EEOC), both in 1964, the average workplace was homogenous with regard to anything from gender to race. From the communication to the actual employees, the immigrant workforce of the industrial revolution is now a mesh of employees from various nationalities, races and ethnic groups, with various sexual orientations, disabilities, and capabilities. Even relatively recent changes, such as the influx of immigrants from Latin American and Asian countries, have led to a proactive approach to addressing diversity in the workplace, benefiting companies with a creative edge, giving them the ability to reach previously untapped markets, and to obtain a competitive advantage overall (Roberson & Kulik, 2007). The more diverse a company's workforce, the more diverse and innovative the company's culture, strategic plan, and communication network (Jackson et al., 1991).

Research has shown that minorities have a tendency to be at a disadvantage in the U.S. workforce relative to non-minority workers, and patterns of occupational inequality between the groups continue today (Bound &

Freeman, 1992; Fassinger, 2008; King, 1992). Women, minorities, and immigrants find closed doors to structured career paths, a tendency to underemployment, unequal compensation, unofficial, but real, segregation, inadequate inclusion (e.g., attaining organizational tenure, moving into leadership positions), and underutilization (Brodish & Devine, 2009).

2. What is Stereotype Threat?

Because so many different groups of people come together on the job, so, too, do the preconceived ideas they have about the world in which they live and those with whom they share it. Many of these ideas are based upon stereotypes, or overgeneralizations about a group of people (Mooney, Knox, & Schacht, 2004). People can naturally use stereotypes to describe others, often guiding individuals in filtering sensory information into usable chunks of information. They have expectations about these unfamiliar scenarios and making generalizations about unknown people or groups (Jones, 1990).

There is a difference in being aware of a stereotype and being in fear of a stereotype. The fear is of confirming a stereotype or at least a presumption of a stereotype, and the threat is termed "stereotype threat" (Steele & Aronson, 1995; Steele, 1997), often associated with a group or category, such as cultural, racial, or ethnic group (Brigham, 1971; Barker, 1991; Coon, 1994). A stereotype, whether presumed or not, are viewed in three perspectives: a motivational view, where stereotypes are motivational constructs that often serve intergroup prejudice, and in which stereotypes are used to justify conduct; a socio-culture view, where stereotypes transmit information (often misleading) about a group; and, a social-cognitive view, where stereotypes are structured cognitions about a group (Ashmore and Del Boca, 1981). When a negative self-stereotype is present and activated due to situational cues, consequences occur, such as poor performance and hampering one's ability to succeed (a common central theme in both affirmative action and job discrimination claims).

3. Academic Research

Stereotype threat has been shown to impact performance on academic-based tasks (Steele & Aronson, 1995), on standardized tests (Good, Aronson, & Inzlicht, 2003), in the classroom (Cole, Matheson, & Anisman, 2007; Good, Aronson, & Harder, 2008; Keller, 2007; Neuville & Croizet, 2007), and even in other cultural (Brown & Day, 2006; Klein, Pohl, & Ndagijimana, 2007). Decrements in behavioral performance have also been shown on tasks involving groups of Caucasians in athletics (Stone, Sjomerling, Lynch & Darley, 1999), women in athletics (Stone & McWhinnie, 2008), women in negotiation situations (Kray, Galinsky, & Thompson, 2002), gay men in childcare (Bosson, Haymovitz, & Pinel, 2004), the elderly in memory performance (Levy, 1996), and women in driving (Yeung & von Hippel, 2008).

Much of the research on stereotype threat has centered in academia, and has concentrated on the impact of stereotype threat on cognitive abilities during intellectual tasks. There has been a relative lack of research on behavioral responses in adults to stereotype threat on non-intellectual tasks, although Steele and Aronson (1995) speculated that stereotype threat conditions led to decreased performance of minorities in more than just their specific academic task–that their research could be applied outside of academia. Would research yield the same result for minority women? Given the conditions for stereotype threat, the connection could definitely be made. Individuals under stereotype threat of all groups have been shown to have the same consequences resulting from

the stereotype threat condition, such as decreased performance and the process of self-handicapping. There are also particular conditions which make the impact of stereotype threat more prevalent, such as cognitive load and anxiety, self-fulfilling prophecy, self-esteem and social identity, stigma consciousness, solo status, and collective threat.

4. Targeted Groups

The majority of stereotype threat research has centered on the relationship between African Americans and Caucasians/European Americans, much of this due to the long, dark history in the United States between the two racial groups. These complicated dynamics between Caucasians and African Americans includes eras of racism, prejudice, and discrimination between these two groups, leading to various stereotypes, both positive and negative (Katz & Braly, 1933; McAndrew & Akande, 1995; Devine & Elliot, 1995); however, more recently, as the Hispanic population has increased, the focus of racial cohesiveness has shifted from the traditional pair to that between non-Hispanic and Hispanic groups. In fact, the Hispanic population nearly doubled from 1990 to 2000, with more than 76 percent of the Hispanic population, including those born in and outside of the US, from all nationalities, concentrated in just seven states (California, Texas New York, Florida, Illinois, Arizona, and New Jersey), and with more than half of those living in just two border states: Texas and California (Guzman, 2001). Data from the 2010 Census showed that, of the 308.7 million people in the United States on April 1, 2010, 50.5 million, or 16 percent , were of Hispanic, an increase from 35.5 million (13 percent) in 2000 (U.S. Census, 2010). The Census Bureau projects that the Hispanic population will grow to 102.6 million (about 24 percent) of the U.S. population by the year 2050, and even higher in states like Texas (Day, 1996). This increase can have no other result than to have a significant effect on culture and diversity, especially in the workplace.

5. Consequences of Stereotype Threat

Stereotype threat can impact people in various ways, including decreased performance, self-handicapping, and disengagement.

Performance Decrements. One way to monitor employee performance is to measure productivity, which is efficiency (outputs/inputs) and effectiveness (outputs/goals; Pritchard, 1995). Decreased employee productivity is a decrease in performance. Decrements in performance were shown in the first study of stereotype threat, when African American students performed worse under stereotype threat condition on the Graduate Record Examination (GRE) (Steele & Aronson, 1995). It was ultimately concluded that the stigma of being African American in stereotype threat conditions had an impact on educational outcomes (Steele, 1999). One could conclude that tapping into the sensitivity of a stereotype, whether it is race, gender, culture or sexual orientation, intensifies the effects of stereotype threat on performance. If a minority/stereotyped individual relates to or identifies with the domain of the task (i.e., they excel in math and are testing in math aptitude), performance still decreases under stereotype threat (Stricker & Bejar, 2004; Spencer, Steele, & Quinn, 1999).

As previously mentioned, much of the research regarding stereotype threat has focused on African American performance, as opposed to Hispanics or other racial groups, despite demographic trends in the United States. However, stereotype threat theory has still held strong when studied in Latino populations. Hispanic women had a decrease in performance on analytical tasks when under stereotype threat, which was manipulated by telling one half that the test was an indicator of not only their actual abilities but their liabilities as well, and, telling the other

half nothing of ability or limitations (Gonzales, Blanton, & Williams, 2002). The impact of a stereotype depends on how much one believes the stereotype and the kind of task being performed (Wicherts, 2005; Spencer et al., 1999 and Neuville & Croizet, 2007), such as when female participants taking a math test believed women were not high performers in math. Stereotypes can prompt underperformance in stigmatized groups in the workplace, and this underperformance is thought to be an implicit response to the biased behavior of others outside of the group (Word, Zanna & Cooper, 1974). Stereotype threat can alter subjects' (specifically, minority and female) professional identities and career path aspirations (Steele, James, & Barnett, 2002), and yield poorer performance on job interviews (Word, Zanna & Cooper, 1974), and, ultimately, their potential performance.

Self-Handicapping. Arguably, the most profound effect of stereotype threat is that of decreased task performance, especially in academic settings, but there are also those less-notable affects, one of which being self-handicapping. People can self-handicap, or put up hurdles in the performance process and can allow someone to blame outside, or external, causes. Individuals under stereotype threat have been found to attribute "reasons" and "excuses" for performance decrements (Steele & Aronson, 1995; Keller, 2002), called tasks "tricky" or "unfair" (Keller, 2002), discounted the performance in terms of validity or reliability (Lesko & Corpus, 2006), prepared less (Stone, 2002) or even exerted less effort (Stone, 2002), and the degree to which one self-handicaps impacts the degree of underperformance.

Task Disengagement. When an individual distances themselves from a threatening situation and/or domain, or even expects to work under stereotype threat, they can suggest that poor performance in the situation is not related to their self-worth. In this way, they disengage from the task/situation (Crocker, Major & Steele, 1998; Major, Spencer, & Schmader, 1998). For instance, someone might perform poorly on an intelligence test but discount the poor performance, claiming the test was not really a test of intelligence. The reasoning is, by that individual, that making a connection and causation between the poor performance and anything else besides the stereotype reduces the stress imposed by the stereotype, which protects him or her from the self-evaluative threat posed by the stereotype. This "protection" mechanism (Major et al., 1998), can actually decrease motivation, interest, and achievement (Steele, 1997). Stereotype threat was found to lower motivation in otherwise very motivated and goal-oriented women (Smith, Sansone, & White, 2007). Disidentification is a consequence of disengagement, usually as a coping strategy to prolonged exposure to stereotype threat (Osborne, 2007; Steele et al., 2002). In fact, researchers (Osborne & Walker, 2006; Fryer, 2006; and Zirkel, 2004) found that academically high-achieving African American students who do not disidentify from academics are more likely to face exclusion from their peer-group (i.e., other African American students).

6. Causes and Precursors of Stereotype Threat

A number of explanations have been proposed to explain what causes performance deficits for those under stereotype threat, including cognitive load and anxiety, self-fulfilling prophecy, self-esteem and social identity, stigma consciousness, solo status, and collective threat.

Self-Fulfilling Prophecy. A prediction, based on outside influences which impact the behavior of a person to a degree that the prediction is fulfilled, is self-fulfilling (Merton, 1968; Wilkins, 1976). Behavior confirmation is a specific type of self-fulfilling prophecy in which the expectations of others causes some to believe they fulfill the expected behavior of the stereotype, and even causes others to perform to only those expectations (Snyder, Tanke & Berscheid, 1977). Self-fulfilling prophecy and stereotype threat are often confused and thus used

interchangeably. Self-fulfilling prophecy is basically believing something will happen (based on a prediction, regardless of the validity of the prediction) leading to the outcome actually happening. Negative predictions can be internalized which results in lower self-esteem (i.e., self-hatred). Stereotype threat is different in that it is an external threat involving a situational cue or threat of being stereotyped (Steele, 1999).

Self-Esteem and Social Identity. Self-esteem is a reflection of a person's own self-worth and encompasses past experiences, emotions, and beliefs. (Cohen and Garcia, 2005) related self-esteem to stereotype threat, and concluded that when one is a member of a negatively-stereotyped group, one may define themselves in part due to how the group is defined (the "I am us" mindset). An individual's self-image and self-esteem, according to social identity theory, is made up of both individual and group components, arguing that a person derives one's self-image not only from what they think they should be, but from the group to which they belong (Tajfel & Turner, 1986). People also identify with particular social groups to achieve a sense of who they are, consistent with self-categorization theory, and the identification with a group is usually reflective of the person's beliefs which can increase self-esteem (Turner, Hogg, Oakes, Reicher & Wetherell, 1987).

Social identity also impacts how stereotype threat is interpreted. People take on particular social identities according to the social situation and situational cues they encounter. People are members of several social groups and the situational cues that come with each social group and role associated must be attended to, but variance from the norm of these situational cues can alert to possible dangers (Murphy, Steele & Gross, 2007). One common situational cue, an alert, is that of being outnumbered, either real or perceived. This possible isolation and ostracism causes social identities to become vulnerable when stereotypes are introduced during performance, blatantly or otherwise (Steele & Aronson, 1995).

Anxiety, Stress, and Cognitive Load. Everyone experiences some level of anxiety, which is normal. Increased anxiety impacts cognitive load, the pressure, or load, on working memory during thinking, reasoning, and problem solving (Sweller, 1988). The lower the cognitive load, the better, and increases in cognitive load has negative impacts on working memory. Performance on complex tasks involves working memory, a construct that refers to the processes involved in the temporary storing and manipulation of information. These processes can predict behavior in many different situations (Engle & Kane, 2004, Working memory capacity, which is limited and related to one's ability to handle stress, including stereotype threat (Redick & Engle, 2006; Heitz et al., 2006), is the ability for someone to focus attention on a particular task by eliminating task-irrelevant thoughts (Engle, 2001).

Since working memory has limited capacity, when it becomes overloaded with information (i.e., in a stressful testing situation) test subjects can become frustrated, anxious, and distracted (Schmader & Johns, 2003). Working memory has a limited capacity, and when overloaded, normal anxiety combined with stereotype threat has been shown to lower performance on complex intellectual tasks (Spencer et al., 1999; Stone et al., 1999), and it has been conceptualized (Schmader & Johns, 2003; Croziet et al., 2004) that the increase in fear and/or anxiety leads back to an increase in cognitive load.

Anxiety seems to be a major contributor to the overloading cognitive load in minorities under stereotype threat as well, and anxiety paired with fear can increase cognitive load even more (Osborne, 2001; Wicherts, Dolan & Hessen, 2005). The more anxiety derived from actual experiences, in particular in female and minority members, the lower performance (Bosson et al., 2004), and the reduction of speed and accuracy (Steele & Aronson, 1995).

Stigma Consciousness. Decreased performance is evident when an individual's stereotyped group status is

made apparent by situational cues, and stereotype threat may not be based exclusively on whether one belongs to traditionally stigmatized group, but is a threat against the group to which one belongs (i.e., the social identity one establishes). African-Americans, as well as other minority groups, have been shown to be more sensitive to perceptions of being stereotyped and discriminated against, thus leading to decreased performance (Wiley, 2001) and an increased sensitivity to stereotyping, also known as higher stigma consciousness (Marx & Goff, 2005). For those at threat from stereotypes, many, if not the majority of situations, can hint of possible discrimination and prejudice; the group's members recognize that group membership plays a role in how they interact and how others interact with them. Being aware of being stigmatized is stigma consciousness, and those with high stigma consciousness are more likely than those of low stigma consciousness to perceive and therefore experience stereotyping (Pinel, 1999). This is especially true in minority workers, whether for the individual or group, who has been shown to be more aware of stereotypes in the workforce and usually confirm the stereotype (Pinel, 1999; Pinel & Paulin, 2005). A person's degree of stigma consciousness might actually reflect their interpretation of the experience, evident with women in high stigma consciousness situations such as in the area of sexism. This is impacted if the group has historically been stereotyped and/or discriminated against. There are times when situational cues can heighten the awareness of a stereotype, as well as the effects of stereotype threat.

Solo Status and Collective Threat. Solo status is a situation cue that also heightens stigma consciousness because of a fear of confirming a negative stereotype of one's group; this is more evident when a single member of the group (Pinel and Paulin, 2005) studied the stigma encountered by staff workers in the service industry, and found that these workers indicated high levels of stigma consciousness with respect to being a staff worker and, when appropriate, a woman, the extent to which they felt respected by the people they serve, and intentions to leave the job. Solo status can lead to potential stereotyping (Stangor, Carr & Kiang, 1998), as evident in female subjects who were negatively impacted by stereotype threat when they expected to be stereotyped (Cohen & Swim, 1995). When an individual is the only representative of a stereotyped group, there is a tendency for heightened group identification (Sekaguaptewa, Waldman and Thompson, 2007). Solo status has led to decrements in performance and performance anxiety, but does not necessarily affect intellectual performance unless a strong stereotype is present (Lord & Saenz, 1985; Stangor et al., 1998; Inzlicht & Ben-Zeev, 2000; Beaton, Tougas, Rinfret, Huard & Delisle, 2007).

Stereotype threat also includes threats of others within the group, referred to as collective threat, and stems from the awareness of poor performance of a single person in one's group and that one person's actions confirming the stereotype of the group. In other words, being aware that one might be seen as confirming a stereotype of a group is enough to negatively impact task performance (Cohen & Garcia, 2005). Collective threats harms self-esteem and leads to lower efficacy in domains, higher gender stereotype activation, and greater social distancing. Because individuals can gain a greater sense of self-identity from a positive representation of their group, collective threat can have an even bigger impact (Schmader, 2002). High group identification, though, can also facilitate social support and even higher self-esteem, offsetting the negatives of stigmatization (Branscombe, Schmitt, & Harvey, 1999).

7. Workplace Diversity and Stereotype Threat

The changes in the American workforce are inevitable and pertinent. Diverse workforce, flattened organizational hierarchies, and increased globalization have all played a role. With the increased focus on diversity and diversity training in the workplace, there is a realization of the benefits of such a diverse workplace,

include a creative edge, the ability to reach previously untapped markets, and to obtain a competitive advantage overall (Roberson & Kulik, 2007). The more diverse a company's workforce, the more diverse and innovative the strategic plan, the communication network, and the company's culture (Jackson et al., 1991). Managing such a workplace is tricky, to say the least, and task that should not be taken lightly. Planning is fundamental since a main source of social oppression can be on the job, despite the proactive efforts of a company to promote and nurture diversity (Blustein, 2008).

Minorities and women have a long history of occupational disadvantage in the US, as compared to non-minority and male counterparts (Bound & Freeman, 1992; Fassinger, 2008; King, 1992), especially when measuring performance comparisons. Managers can monitor employees performance various ways, one of which is assessing the industriousness, measured by an employee working constantly, diligently, and consistently (Industrious, n.d.), and productivity, which is efficient and effective (Pritchard, 1995). Academic research found decrements in performance during academic tasks, so a parallel can be made to academic tasks and performance measured in the workplace. But, two questions remain: How does stereotype threat affect simple (i.e., manual labor) work performance, and will the results mirror those in academic settings? If we look at the antecedents of stereotype threat in academic settings as applied in the workplace, we see that it is likely.

Stress, Stigma Consciousness, and Self-fulfilling Prophecy. The reductions of accuracy and speed can be impacted by a reaction to evaluation apprehension (test anxiety), often brought on by stereotype threat. African Americans showed an increase in anxiety during stereotype threat conditions, leading to more exertion but less results (Steele & Aronson, 1995). Evaluation apprehension exists in the workplace in the forms of performance evaluations, micro-managed environments (e.g., manufacturing), during one-on-one training, or even competence testing.

Decrements in performance were found in female-workers in the service industry who are in constant and even chronic stigma conscious situations, especially in customer service skills and attitude towards their positions and/or superiors (Pinel & Paulin, 2005). Such studies indicate that stigma consciousness involved with being in this type of service position predicted intent to leave - the feeling of being disrespected mediated this effect-and that the intention to leave morphed into disgruntled, negative behavior on the job (Pinel & Paulin, 2005).

Stereotypes can also lead to underperformance in stigmatized groups, a phenomenon thought to be a response to behaviors and expectations of those outside of the stigmatized group (Word, Zanna & Cooper, 1974). Stereotype threat can alter one's professional goals and achievements, (for instance, with females under stereotype threat engineering), even though their interests and skills lie in those fields (Steele, James & Barnett, 2002).

Positive Stereotypes and Motivations in the Workplace. As discussed earlier, positive stereotypes can have both positive and negative effects on performance. In the workplace, they can have adverse effects (Cocchiara & Quick, 2004), often causing individuals to set performance goals, many times unrealistic and unattainable, based on the positive stereotype and leading stress trying to live up to the stereotype. This in fact can lead to performance decrements. Negative self-stereotypes establish a negative reference point, thereby leading to the setting of minimal goals in the pursuit of aspirations, many times by changing career or educational paths to suit the need of the stereotype. Stereotype threat can cause those affected to reevaluate career objectives and perhaps even take a different path or make a different decision than they would have if not subjected to the threat of stereotype (Pinel & Paulin, 2005). Positive stereotypes can be used to set positive reference points for goal-setting, as set forth in the regulator focus theory. The stereotype is seen as an obstacle to be overcome, leading to higher goals being set and harder working employees in attaining those goals (Pinel, 1999).

Both negative and positive stereotypes can in turn impact motivations and pursuits. There are two different categories of the pursuit of aspirations: promotion focus and prevention focus. Promotion focus is concerned with attainment of goals and accomplishments, whereas prevention focus is concerned with responsibilities and safety (Seibt and Förster, 2004).

8. Problem Statement

Stereotypes are everywhere and a part of everyday life. With stereotypes comes stereotype threat, ever-present in today's diverse workforce. Just as in educational settings, stereotype threat impacts performance in the workplace, and how one views the world, and themselves, can be affected by stereotypes. Understanding stereotype threat's consequences on stereotyped groups is important, especially when comparing different ethnic groups. The ever-changing workforce dynamic substantiates the need for research in the area of stereotype threat, specifically how employees are impacted. Two hypotheses were tested: African American females will show a decrease in performance while under stereotype threat condition on manual labor tasks; African American females will show a decrease in performance while under stereotype threat condition on the academic task; Hispanic females will show a decrease in performance while under stereotype threat condition on manual labor tasks; and, Hispanic females will show a decrease in performance while under stereotype threat condition on the academic task.

9. Methodology

The ultimate goal is to test stereotype threat in the workplace, a field study; however, legal issues, company human resource policies, and Occupational Health and Safety Administration (OSHA) regulations, could skew the basic study of social cognition and the effect on initial work performance. In laboratory research of this nature, other variables that might have an effect on work performance were eliminated, or were at least controlled. In the field, these factors are not controlled and thus its influence on results is not clear.

10. Participants

Students at Texas A&M–Commerce participated in the study in a classroom on the main campus. Two groups of female college students between the ages of 18 and 40 were studied: 21 Hispanics and 35 African Americans. There were 18 African American females and 11 Hispanic females under stereotype threat, and 17 African American females and 10 Hispanic females in the control group. Participants were not in rooms of mixed race and in fact were brought into the room one at a time. The upper age limit of the participants is based on the fact that laws in the United States and practices in the labor force were different prior to the Civil Rights movement in the 1960's. The researcher wanted to ensure that those chosen for the study did not live through (as adults) these two major transitions in the United States. There were two conditions each racial group was submitted to: one with the introduction of stereotype threat through the presentation of information associated with African-Americans, and one with no information related to race or ethnicity.

11. Conditions and Procedures

There were two conditions presented for each participant group.

Condition 1 Setting and Procedure (Stereotype Threat Presence). In condition 1, various notes were

written on the board at the front of the classroom. Participants in each racial group were introduced to different class notes in Condition 1. For African-Americans females, the notes referred to positive, prominent leaders and figure-heads in the Civil Rights movement of the 1960's in the United States. Hispanic participants were introduced to notes regarding figures in the Hispanic/Latin American Civil and Workers Rights movements in the United States of the early 20th Century. The notes were meant to activate thoughts concerning race and attention was not blatantly drawn to the notes. Participants were facing the notes and asked to wait until the experiment began, as they were left in the room for two minutes before the task began, giving them time to look around the room and notice the notes.

Participants were asked to complete the first of two manual labor tasks. The first task was to sort three distinctively different-sized bolts and screws. Participants were timed and the lower the score (time), the better the results. The second task asked students to spend seven minutes assembling nut-bolt combinations, twisting the nuts completely onto the bolts, and, the more assembled in that period of time, the better the results. For the academic task, students were given 15 minutes to complete a 10-question math worksheet from the TAKS (Texas Assessment of Knowledge and Skills, Texas Education Agency, 2009), with scores being calculated as a percentage out of 100. Experimental sessions were not of mixed-race participants.

Condition 2 Setting and Procedure (Control). In Condition 2, various notes were written on the board in the front of the classroom regarding the Top 15 countries' Gross Domestic Product (GDP), so that students entered the room thinking that there has been an economic classroom lecture. The instructions, tasks, and procedures of the control group (condition 2) remained the same as that of condition 1.

12. Materials

For the first manual labor task, participants received 90 bolts (three different sizes, divided equally). For the second manual labor task, 31 nuts and bolts were provided in groups of three. The math worksheet was derived from basic TAKS math questions, attained from the 2006 11th grade (high school exit exam) online released TAKS test. At the end of all three tasks, a questionnaire was administered, consisting of a two-page document including a page for participant demographic information, and a survey, the Collective Self-Esteem Scale–Race Specific (CSES), which evaluates the degree to which a person identifies with one's race.

13. Results

The total time in sorting bolts and screws, the total number of assembled nut-bolt combinations, and the score on the mathematics test for each racial group were documented during the experiment; African American females were impacted on all three tasks when working under stereotype threat. On the contrary, while Hispanic females were only impacted on the two manual labor tasks while under stereotype threat, but not on the academic task.

Sorting task. On the sorting task, both Hispanic females and African American females were significantly impacted by stereotype threat, $F(1,19) = 9.93$ and $F(1,33) = 15.99$ respectively.

Table 1   Mean Scores for Sorting Task

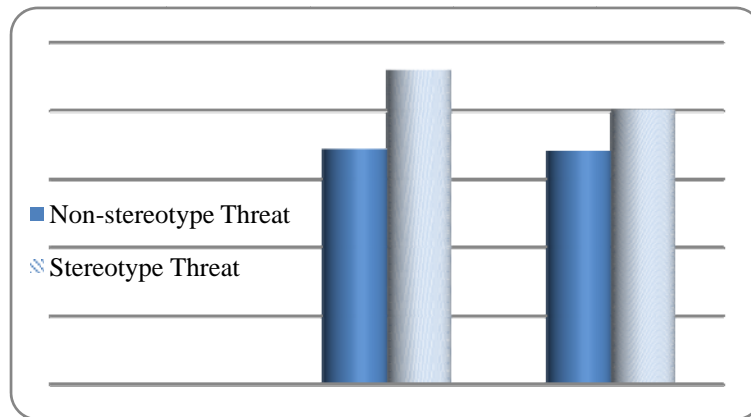| Sorting Task (seconds)	Non-stereotype Threat	Stereotype Threat
African American	68.76	91.94
Hispanic	68.22	80.36

Figure 1   Means of the Sorting Task (Number of Seconds) Under Each Condition

Assembly task. On the assembly portion of the experiment, again, both Hispanic females and African American females were impacted by stereotype threat, $F(1,19) = 4.73$ and $F(1,33) = 21.50$ respectively, with African Americans being more significantly impacted.

Table 2   Mean Scores for Assembly Task

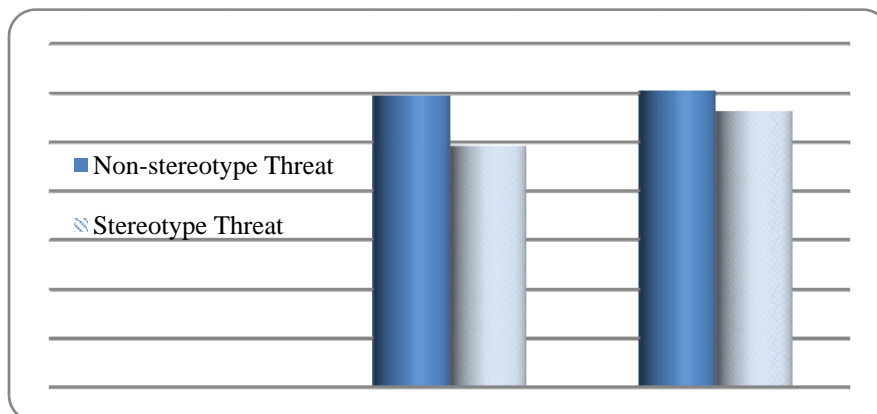| Assembly Task (quantity assembled)	Non-stereotype Threat	Stereotype Threat
African American	29.68	24.53
Hispanic	30.2	28.14

Figure 2   Means of the Assembly Task (Number of Items Assembled) under Each Condition

Math task. African American females, again, were significantly impacted by stereotype threat on the academic portion of the experiment, $F(1,33) = 43.41$, while Hispanic females were not significantly impacted, $F(1,19) = .37$.

Table 3   Mean Scores for Math Assessment Task

Math Assessment (score correct)	Non-stereotype Threat	Stereotype Threat
African American	62.94	34.44
Hispanic	63.33	59.09
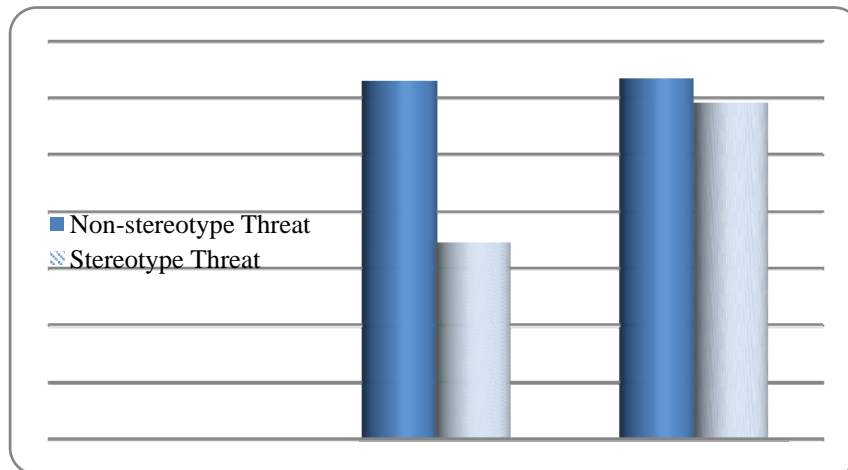
Figure 3   Means of the Math Task (Percent Correct) under Each Condition

Collective Self-esteem Scale (CSES). The CSES (Luhtanen & Crocker, 1992) was used in this study to evaluate the participants' collective self-esteem as categorized by four factors on a scale of 1 (strongly disagree) to 7 (strongly agree): membership self-esteem, private collective self-esteem, public collective self-esteem, and importance of (racial) identity. MANOVA was used to evaluate the CSES grand mean scores with race as the independent variable. Stereotype threat did not impact the CSES scores for either racial group.

Table 4   Collective Self-esteem Scale (CSES) Mean Scores

	Non-stereotype Threat				Stereotype Threat			
	Membership	Private	Public	Identity	Membership	Private	Public	Identity
African American Females	6.56	6.71	4.69	4.97	6.25	5.98	4.47	4.86
Hispanic Females	5.5	5.98	4.78	5.3	5.14	5.7	4.36	4.52

Note: The results of this table are of the Collective Self-Esteem Scale Survey (Race Specific) Importance of Identity subscale and are categorized by race and stereotype threat condition. Scores are based on a scale from 1 to 7.

14. Limitations

Several limitations to the study lead the way to future areas of research and a different perspective when replicating the study. For instance, this study was conducted under controlled settings in laboratory conditions, as compared to in the workplace (i.e., in the field). Field conditions might not require the same manipulation of stereotype threat, as the class notes in this study did, but might offer other ways of stereotype threat manipulation. Additionally, participants were not true workers, as one would find in the field who might not be as educated or motivated as the college students actually studied. Stereotype threat might impact college students differently due to their higher ego, or even uncontrollable circumstances. If this study were replicated in the field with participants more closely reflective of a manual labor worker population, results might vary. There is also a limited number of Hispanics signing up to participate for the lab study.

15. Discussion and Conclusions

The premise surrounding this study was the impact of stereotype threat on work performance in manual labor

settings. Stereotype threat had an obvious and significant impact on performance for African American females on all three tasks, confirming what past research found. Hispanic women, on the other hand, were not impact by stereotype threat on the academic task. Perhaps because stereotypes about Hispanics primarily revolve around work ability and work ethic, as compared to intelligence, a traditionally stereotyped attribute of both African Americans and females. The researcher hypothesis was not rejected, with the exception of Hispanic women on academic tasks.

16. Reducing the Impact of Stereotype in the Workplace

There is a growing importance, as reinforced in this study, for managers to be attentive to workplace diversity issues. The workplace is more diverse than ever, decidedly difference from just a decade ago. Opportunities once closed to many are now available to all, including education regardless of race, gender, or even socio-economic status, communication across borders and time zones, and access to technological advancements that have paved the way for global connectivity. And, specifically, what about the impact of stereotype threat on Hispanics? A recent economic analysis revealed that low-wage Hispanic workers positively impact the US, and their presence has contributed the creation of new jobs. It is estimated that low-wage Hispanic workers could contribute to the nation's economy as much as $800 million each year (May, 2010).

Today's workplace is decidedly different from just a decade ago. This new, diverse workforce is a wonderful advancement of our business practices; however, there is still an undertone of intolerance in the United States. Mangers must understand that stereotypes are inevitable in a diverse workforce, and effective management stems on creating an environment where all employees can be successful (Cox, 1994). There are various ways of addressing stereotypes in the workplace and alter the consequences of stereotype threat, one of which is providing a successful task strategy. Often times, employees work even harder to counteract the stigma of a stereotype (Kray, 2001), but regardless, managers must be ready to address performance decrements, whether actual or predicted, proactively. Managers and project planners can implement plans to interrupt the stereotype threat process, as described by Roberson and Kulik (2007), and continually improve on these techniques as the make-up of the workforce changes. The stereotype threat process involves task difficulty, personal task investment, awareness of stereotype, and reinforcement of the stereotype through situational cues. To interrupt this process, managers can plan to provide a well-laid, tactical plan for completing the task, available and recognizable by all participating.

A proactive approach to heading off stereotype threat is to address stereotypes outright. Negative, and even positive, stereotypes still adversely impact the health and performance of various groups of employees (Cocchiara & Quick, 2004). Although some research indicates addressing stereotype threat actually draws negative attention to stereotype threat in the workplace (Wheeler & Petty, 2001) and can bring about stereotype-consistent behavior (Johns, Schmader & Martens, 2005), similar to characteristics similar to self-fulfilling prophecy, this too can be prevented. It is crucial to develop a more optimistic perspective and prediction of the effect. Stereotype awareness does not mean endorsement (Adler, 2002), and learning about the consequences of stereotype threat can protect individuals against those consequences (Wheeler & Petty, 2001).

Another factor to consider in studies in the workplace is one's motivations and pursuits. Negative self-stereotypes establish a negative reference point, leading to setting the bar low with meeting the minimum goal that can be set, impacting a person's career and educational goals (Pinel, 1999; Pinel & Paulin, 2005). Female minority workers have the impact of both their racial/ethnic category and gender. Focusing on positive

reference points, positive stereotypes for instance, can combat the negative impact of self-stereotyping (Seibt and Förster, 2004).

The complexity and relevancy of the task itself should also be analyzed, as well as diminishing threatening situations, taking the "token" out of the situation, where "token" members, those single members of a minority group placed in stigmatized situations (Roberson & Kulik, 2007). Managers should evaluate the relevancy of the task, focusing on the purpose in non-stereotypical terms, for instance, not concentrating on abilities or academic measures as a measurement of success (Spencer et al., 1999; Roberson & Kulik, 2007).

17. Final Thoughts

Being a minority female is a hard role, especially in the workplace. Even today, when a minority woman breaks the glass ceiling of a major corporation, it is big news. What will it take for that to be just another business story? With the world and our workforce becoming more and more diverse, managers must adapt to the new picture of their workplace family. As the workforce continues to change, so too should the companies for which we all work. Managers must be proactive in addressing diversity within their organization, staying on top of possible issues employees might encounter. It's important to educate others about stereotype threat prior to threatening situations, and ideally, ward off threatening situations before they occur.

A company's long-term organizational health should be a primary goal for managers, and part of a healthy company is having a harmonious workforce. Recognizing, recruiting and meshing workers who can work together for the common good of the organization without letting difference obscure their focus should be the primary goal of every company. Management should actively pursue practices that reflect the ethics of the organization, the corporate structure and behavior desired by employees, and the tolerance expected by society (Chyung, Winiecki, & Downing, 2010). By seeking out cues that heighten tense situations, communicating effectively not only the company stance on discrimination and diversity but each employee's expectations with regard to their own behavior, and promoting tolerance throughout the organization, managers have a lot of influence on the direction of an organization's culture. Diversity awareness and the real issues with stereotyping should not be swept under the rug, and not become a corporate burden, but embraced as a part of a company's organizational structure, set of norms and values, and celebrated as an everyday way of life within the organization.

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