

STEREOTYPE THREAT'S EFFECT ON NON-ATHLETE STUDENTS' INTELLECTUAL ABILITIES

By

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Abstract

Stereotype threat has become widely known to negatively impact humans' abilities to perform. This phenomenon and its counterpart, stereotype lift, are both examined in this study regarding their effects on non-athlete students. Positive stereotypes elicit intelligence threat which, in turn, has led targeted groups to perceive negative stereotypes being expressed as well. Black undergraduates are typically stereotyped as being more athletic, regardless of their athletic ability, than white undergraduates. This can lead to them being misidentified as being a student-athlete on a college campus. To directly determine stereotype effects, this study will examine the effects of misidentifying non-athlete students as student-athletes and measured by having participants complete a verbal anagrams task. Effects will also be examined through questionnaires relating to mind wandering, perceived belonging at one's academic institution, and stereotype distancing. Black, White, and Asian undergraduates will participate in order to examine cross-racial effects. Black participants are expected to demonstrate stereotype threat, White participants are expected to experience stereotype lift, and Asian participants are expected to have a null effect as athleticism is not an inherent stereotype for their ethnicity.

Introduction

Each day, people experience being misidentified whether it be because of their skin color, age, or any of the numerous other traits they exhibit. When incorrectly placed into a stigmatized group that someone does not identify with, several reactions are possible. Will that person get offended? Will that person just stay quiet and let it slide? Will that person confront the incorrect identification? These scenarios are commonplace in many environments. One setting is college campuses where they tend to have diverse student populations which leads to many assumptions being made about the individual students. An example of this occurs when Black students, who do not play sports, are misidentified as an athlete by someone else. How would a student be affected when being identified as a student-athlete when they are not actually a student-athlete? The reaction will likely vary based on each individual, but why do they respond in that way? This study will work to better understand these psychological processes and how they shape non-athlete student participants' responses when misidentified as a student-athlete.

Over time, people have become increasingly aware of themselves and the effects their actions have on others. This self-awareness tends to seep into our interactions with people, affecting these connections. People experience interactions differently depending on their perceptions. For example, by having Black and White participants rate the same pre-recorded interaction between a White actor and Black actor, Czopp (2008) discovered that Black participants evaluated the White actor, and the interaction altogether, more negatively than the White participants. These perceptions are impacted by stereotypes that are salient in people's minds. Stereotypes are standardized ideas that people have about members in a group who share common features. Regarding Czopp's study, stereotypes were being discreetly called upon based

on race. Stereotypes impacted the two different groups in more meaningful ways when handling information that was more personal to the individual.

Studies have recorded behavioral effects that demonstrate stereotyping and personal beliefs that people have. A prime example comes from Goff et al.'s (2008) article that used four studies to examine the effects of stereotype threat on racial distancing. Throughout their studies, participants were given various scenarios then asked to move their chairs to have a conversation with another participant or two whose identity was characterized as being White and/or Black. Results showed that White participants sat further from Black "participants" in each of their four studies demonstrating racial distancing.

By revealing how it takes little information to elicit stereotypes and behavioral responses, it goes to show the importance of understanding stereotyping's effects all around. Those who do not identify with a stigmatized group would still suffer the consequences of being sat further from in a conversation. In the current work, the aim is to understand if non-athlete students suffer the same consequences when stereotyped as student-athletes which typically results in stereotype threat.

Stereotype Threat

There are predominantly two phenomena that are associated with stereotyping's impact – stereotype threat and stereotype lift. Stereotype threat is defined as being at risk to confirm a negative stereotype about one's group (Steele & Aronson, 1995). Walton and Cohen (2003) explained stereotype lift as being "the performance boost caused by the awareness that an outgroup is negatively stereotyped." With positive outcomes not presenting as much of an "issue" for people, stereotype lift has received less attention than stereotype threat; however,

researchers have noticed the need to understand both sides and have examined their effects in multiple domains from sports to academics.

Referencing stereotype threat, people who identify with a stereotyped population perceive others to hold negative thoughts against their group. This, in turn, affects stereotyped populations' own attitudes and behaviors to mitigate the emotions aroused by the threat. These reactions can then transcend into victims experiencing harmful consequences such as weakened performance. One of the most interesting environments to examine stereotype threat is within sports. One study conducted by Stone et al. (1999) had participants read an article detailing an athletic test that was being used for standardized sports psychology. After having read about this test and its relation to sports intelligence, or natural athletic ability, participants completed a miniature golf athletic performance test. Results showed that Black participants performed significantly worse when race or sports intelligence were salient. On the other hand, White participants exhibited worse performances in golf after recognizing that they may confirm the negative stereotype that White people are not athletic. These performance effects tie directly to athletic performance. An additional setting where stereotype threat affects results is within academics.

Within the classroom, students undergo an "interview" by being tested. The pressures associated with answering correctly come from several precursors – knowing the material, future opportunities, and comparisons. The comparisons are most closely related to stereotype threat and when a comparison is salient, negative consequences typically arise. Many studies have demonstrated the negative effects associated with stereotype threat physically and mentally. For example, by having participants complete several problems from the Remote Associates Test (RAT; McFarlin & Blascovich, 1984), Blascovich et al. (2001) found that Blacks demonstrated

higher increases in blood pressure than European Americans when experiencing stereotypes in relation to intelligence tests. This discovery helped to drive researchers' focuses more finitely on stereotype threat's effects on intelligence.

Blascovich et al. (2001) took a look at a general population, but a specific group of people who has demonstrated stereotype threat in the classroom, relating to the current study, is student-athletes. Yopyk and Prentice (2005) took a look at characterizing student-athletes with their athlete identity, student identity, or with no identity before completing questionnaires and a math test. Participants who were identified as athletes exemplified stereotype threat by reporting lower self-regard and performing worse than participants who were identified as students who showed effects of stereotype lift. Those who were primed with no identity had varied results displaying no effects from stereotype threat not stereotype lift. These effects are thought to be driven by the fear of either failing to confirm a positive stereotype or, in this case, the fear of confirming a negative stereotype through one's performance (e.g. student-athletes are dumb). Both of these fears can undermine performance in a variety of ways.

Stereotype Lift

Referencing stereotype lift, participants' athleticism, among many other scenarios, has specifically demonstrated stereotype lift effects in the past. A study by Chalabaev, Stone, Sarrazin, and Croizet (2008) assessed participants' motor performances where participants performed better after being primed with a negative stereotype about the opposite sex. This was measured through the participants' ability to maintain balance through an athletic performance test and demonstrates stereotype lift. This difference in performance helped to reinforce the notion that stereotype lift and stereotype threat are two possible outcomes from stereotypes.

Another area where stereotype lift has been known to produce positive outcomes is within the classroom. Mendoza-Denton, Kahn, and Chan (2008) conducted a study that had Asian students enrolled at an American university complete sample Graduate Record Examination (GRE) math questions (Robinson & Katzman, 1992). They found that the stereotype lift was experienced for men and for Asian students based on the prime they received before answering questions. Those who received a prime bolstering their self-identified groups' abilities answered more questions correctly. It is thought that this occurred because there is a widely held stereotype in America for Asian to be academically high achieving, especially in mathematics (Lee, 1994). Stereotype lift is not as commonly known or researched, but stereotype lift and stereotype threat present important information demonstrating the need for understanding. Despite referencing stereotype threat and stereotype lift in different environments, many past researchers dedicated their studies to examine effects for specific populations, especially by race.

A study by Cheryan and Bodenhausen (2000) made gender and ethnic identities salient through questionnaires before having participants complete a math test. They found that women "choked" when a negative stereotype about their group's math abilities was associated with completing math problems. This was also true for participants who identified as Asian Americans "choked" in the face of a positive stereotype, or a stereotype that reflects what is thought of as a positive attribute (e.g. being good at math). Despite understanding the common stereotype for Asians to be strong math students, their abilities were hindered from the pressure of performing to the point of what they thought others expected.

One may expect positive stereotypes to bolster performance, but many studies have shown how these positive stereotypes ultimately hinder one's performance. To further show this,

Czopp (2008) conducted two studies that investigated the effects of positive stereotypes as stereotypical “compliments.” For the study, Black and White participants watched a White female’s interview responses in Study 1 and an interracial interaction in Study 2. Results indicated that Black participants evaluated the stereotypical “compliments” more negatively than White participants. This goes to show that complimenting others on perceived admirable qualities can actually be perceived as threatening.

Stereotype Threat for Student-Athletes

Ultimately, perceiving a stereotype and translating it to another identity happens in many environments, but a common setting is the classroom. One of the most common identities observed in a classroom is being a student-athlete. Research has shown that student-athletes are commonly stereotyped as being the “dumb jock” and prioritize their athletic career over their academic career by taking easier classes to maintain eligibility (Sailes, 1993). People are aware of this stereotype and specific consequences stem from being categorized as a student-athlete.

To better understand how student-athletes feel about their identity, Martin et al. (2010) completed a study that examined the experiences for Black, male student-athletes attending Pac-Ten universities. They learned that four primary themes arose based on these students’ experiences including having to prove their worth, being perceived as a threat, having to manage time, and taking pride in their hard work. Many of the factors that led to these themes were historical when thinking of stereotypes of Black men being less educated and athletically gifted. Hearing about these experiences illuminates how stereotype threat is a deep-rooted dilemma that is likely affecting populations all over.

Narrowing the focus on Black student-athletes experiencing stereotype threat, Stone, Harrison, and Mottley (2012) conducted a study examining stereotype threat when emphasizing

a student-athlete's identity. During the study, a priming manipulation was introduced by subjecting participants to one of three conditions that made their "athlete," "scholar-athlete," or neutral "research participant" identity salient. In each condition, participants then read that their test scores would be compared to all other student participants who took the test. Following this, participants completed a standardized verbal analogies test. Results indicated that Black participants performed significantly worse than White participants on a verbal analogies task when stereotyped as a scholar-athlete or an athlete. Support for these stereotypes having such a profound effect on Black student-athletes can be found in Siy and Cheryan's (2016) study measuring how people react to different stereotypes, especially seemingly positive stereotypes.

In their study, Siy and Cheryan (2016) conducted five studies to evaluate participants' reactions after hearing a positive stereotype (e.g. "Women are really nurturing."). They found that positive stereotypes could incite a "negative echo" or concurrently elicit negative stereotypes based on participants' evaluations. Participants reported that because other people hold positive stereotypes about them, the other people also held negative stereotypes about them. This was ultimately dependent on whether the participant felt they were directly targeted or not. Black students are commonly stereotyped as being student-athletes and student-athletes are commonly stereotyped as not being as intelligent. By following Siy and Cheryan's (2016) model, an echo comes back that makes Black student-athletes perceive their intelligence being stereotyped on top of their race and student-athlete identity. These stereotypes tend to be deep-rooted from history and previous experiences, but their effects can be long-lasting too.

Many stereotypes have developed over time and become well-known, but stereotype effects can also linger immediately following an interaction in a multitude of ways. Inzlicht et al. (2011) detailed a significant amount of research in an article that outlined the lingering effects of

stereotype threat specifically. These lingering effects stem from the idea of stereotype spillover that leaks into other areas of life. In their article, they discussed how people were less likely to control their behavior, how they demonstrated heightened levels of aggression, and how they had less physical endurance after experiencing stereotype threat. By recognizing the immediate and long-term effects, researchers understand the issue at-hand with stereotyping individuals.

Although, what effects occur when misidentifying people?

Stereotype Threat and Mistaken Identities

This study will examine stereotype threat and stereotype lift's effects following the misidentification of non-athlete students along with their reactions to being mistakenly identified. This line of research stems from previous literature that has discovered effects occurring when stereotypes are made salient for correctly identified populations, but not for people who are incorrectly identified with stigmatized groups. Buck et al. (2013) examined how far people go to avoid being incorrectly identified with a stigmatized identity, homosexuality. Researchers reported that concerns about a not readily identifiable identity, sexuality, led to participants' anxiety and avoidance of people who identified as homosexuals. These results indicated that people avoid members of a stigmatized group to decrease the likelihood of being misidentified as a member of that group. Another example of avoiding interactions to not be stigmatized can be found in interracial interactions where Whites may avoid them to not appear racist.

Reactions to being misidentified may depend upon individual differences in the motivation to challenge the misidentification or confront the person who commits the misidentification. For example, Neel and Shapiro (2012) took to this question by dissecting the lay theories, also known as "implicit theories" (Dweck et al., 1995), of racial bias to predict how

Whites approached interracial interactions. Specifically, they touched on lay theories of malleability (entity versus incremental learning) and how these theories influence perceptions of failure, behaviors engaged in challenging situations, and racial bias in difficult interracial interactions. The researchers found evidence, further supporting previous literature, that Whites' lay theories of racial bias predicted Whites' strategies to handle difficult interracial interactions. Entity theorists preferred performance strategies that masked their weaknesses while exploiting their strengths (e.g. being extra nice) whereas incremental theorists who viewed racial bias as malleable preferred learning strategies (e.g. stepping into the other person's shoes). Neel and Shapiro helped contribute to how different mindsets approach difficult situations, but this study is examining the effects of being mistaken for a stereotypically positive identity, an athlete. What happens when stereotyped individuals confront a "compliment?"

To understand reactions to positive stereotypes, Alt, Chaney, and Shih (2019) examined Asian Americans and African Americans perspective on confronting positive stereotypes by introducing positive and negative stereotypes and measuring perceived evaluative costs, perceived offensiveness, and likelihood to confront prejudice. They found that Asian American and African American *targets* were thought to be less favorable and as bigger complainers when confronting a positive stereotype which may have been because they also found the positive racial stereotype to be less offensive than the negative racial stereotype. To that end, Asian American and African American *participants* anticipated higher evaluative costs to confront a positive stereotype, compared to a negative one, and reported being less likely to confront the positive stereotype. This previous work helps inform hypotheses with this current work as it relates to positive stereotypes and confronting racism.

Confronting racism has shown to occur less in real-world situations than laboratory settings, but it is essential to grasp to better evaluate stereotype threat and stereotype lift's effect on performance (Swim & Hyers, 1999). If confrontation is a potential course of action when being stereotyped, it is another option being added to the cognitive load these individuals are bracing. By filling people's limited amount of available working memory, adding to the plate would decrease individuals' performances, especially in cognitively demanding spaces such as stereotype threat.

The Proposed Study

Overall, the underlying processes of the stereotype threat effects from a mistaken identity are the primary focus of this research. Specifically, this study will investigate if non-athlete students experience stereotype threat or stereotype lift when being misidentified as student-athletes. Participants were subjected to an online verbal anagrams task then introduced to the manipulation by researchers identifying them as a "student" or "student-athlete" verbally and with written study materials. Participants' responses to mind wandering, perceived academic belonging, and stereotype distancing inventories were recorded after completing the verbal anagrams task and experiencing the manipulation. Measurement was primarily concerned with the verbal anagrams task results but better explained through the questionnaires. We expected these effects to largely depend on the race of the participant.

To that end, we hypothesized Black participants being misidentified as student-athletes would experience stereotype threat based on the positive racial stereotype leading to worse performance; White participants would experience stereotype lift, or no effect, due to the student-athlete stereotype being inconsistent with their identity and bolstering their self-esteem.

Asian participants would not be affected due to the student-athlete race-related stereotype not commonly experienced in the United States.

Methods

Participants

To complete this study, researchers from the University of Arizona (UArizona) and University of California – Los Angeles (UCLA) will be recruiting approximately 400 undergraduate students in total. UCLA's staff will recruit 200 of these students through their registrar's office email and postings. Arizona will recruit 200 Introductory Psychology undergraduate students through their department's SONA system. In exchange for participation, students will receive cash through their school account at UCLA and credit for their Psychology course at UArizona.

Study Design and Procedure

This study will follow a 2 (attribution: mistaken identity vs control) x 3 (race: Black, White, or Asian) between-subjects design. Persistence and accuracy in a verbal anagrams task will be the primary dependent measure for intelligence threat. Additional dependent measures will be responses to inventories regarding mind wandering, perceived academic belonging, and stereotype distancing on Likert scales along with their verbal and/or nonverbal reaction(s) to being mistakenly stereotyped.

Participants will be selectively random by only inviting participants who do not identify as competing in university-level, varsity sports, and racially identify as White, African American/Black, or Asian/Asian-American. Included in this pre-screening survey, participants will also share their responses to different items to better understand their magnitude of believing in racial bias lay theories (e.g. *"People have a certain amount of racial bias and they really can't*

do much to change it.”) on a 7-point Likert scale from 1 (Strongly disagree) to 7 (Strongly agree) (Neel & Shapiro, 2012). Lastly, they will respond to the question, “*Have you personally taken part of any Black Lives Matter protests?*”, with “Yes” or “No” to better include information based on recent movements.

From there, eligible participants will individually complete the study and begin the study session by meeting the researcher virtually via Zoom. Throughout the study, participants will speak, see, and chat with the researcher during the Zoom meeting. Any time the participant will be completing a study task, the researcher will turn off each of their microphone and video to provide maximum privacy.

To complete the study, the researcher will greet the participant then send a Qualtrics survey link through the meeting chat function. First, the participant will read through the consent form through the link before continuing the rest of the study. After consenting, the researcher will inform participants about what they will be experiencing throughout the study, mainly that we will be looking at how people solve challenging puzzles. To begin the study, the researcher will provide the participant a code to access the study. After the code is input, the accessed screen will temporarily “load” and the researcher will “take a phone call” while their video is off, but microphone is on, and introduce the attribution manipulation. For those being primed with the stereotype (as student-athletes), the researcher will “answer the phone” and let their contact know that they are setting up a “student-athlete” with the puzzle task and cannot talk at the moment. For those in the control group, the researcher will simply state they are setting up a “student.” While the call comes to an end, the researcher will mute their microphone which will be near the time the study will automatically move forward to the verbal puzzles. The remaining measures will consist of questionnaires that relate to mind wandering, perceived academic

institutional belonging, stereotype distancing, and demographics. Additionally, there are questions to assess if any external distractions were present during the study. Lastly, participants will watch a debrief video that explains the study before their meeting ends with the research assistant.

Materials

Survey Distribution. Participants will complete the study task and questions on their computer through a link provided to them during the Zoom meeting. The survey will be completed through Qualtrics to collect and measure responses to the verbal anagrams task, to the few inventories related to mind wandering, stereotype distancing, demographics, distractions, and a free recall form to assess their memory of the study immediately following the study.

Measures

Verbal Anagrams Task. Participants will be presented with 40 verbal anagrams (e.g. *Seed : Plant :: [Egg] ____ : [Bird] ____*) and will be given 20 minutes to solve as many possible, though they are able to stop at any point. Questions will be presented in a multiple-choice format to fill in the blanks. Participants will be warned in the instructions that the task is meant to be challenging, which means difficulty will vary. After completing the task, feedback will be administered detailing how correctly they completed the verbal anagrams. A pilot study demonstrated that participants averaged completing this portion in 10 minutes. From there, participants will complete a series of questionnaires.

Questionnaire Items. Three questionnaires will be combined to assess mind wandering, perceived academic belonging, and stereotype distancing. First will be items related to mind wandering (e.g. *While completing the puzzle task, to what extent were you distracted?*) rated from 1 (not at all) to 7 (extremely) (Mrazek et al., 2011; Cheryan & Bodenhausen, 2000). Next

will be items related to perceived academic institutional belonging (e.g. *I feel that I am valued in my classes.*) that are rated on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree) (Walton & Cohen, 2007; Goodenow, 1993). Following these, there will be items related to stereotype distancing (e.g. *To what extent do you like basketball?*) being rated on a 7-point Likert scale from 1 (not at all) to 7 (strongly) (Ghavami & Peplau, 2013). Lastly, to assess internal validity, participants will also be asked to evaluate their perceptions of the presenter (e.g. *Would you hire the experimenter?*).

Demographics. At the end of the study, participants will report their race/ethnicity, gender, sexuality, parental education, academic major, and primary campus involvements. The main focus within their demographics will be their race/ethnicity and campus involvements to ensure that the dependent variables (race and that students were being misidentified as non-athlete students) were correctly being measured.

Data Analytic Strategy

The central measures that will be analyzed pertain to the verbal anagrams task and measures for mind wandering, perceived belonging, and stereotype distancing. To analyze the verbal anagrams task's results, scores will be adjusted to only account for attempted questions. Therefore, the final data will include percentages of correct answers by dividing the number of correct answers by attempted questions. This will better account for participants' ability rather than their effort (Stone, Harrison, & Mottley, 2012). The other three items will be all scored on Likert scales then examined using a generalized linear model through SPSS.

Expected Results

At the conclusion of the study, we expect results to support the described hypotheses. Mistaking a student for a student-athlete is expected to activate various effects related to

stereotyping (threat and lift) depending on race. We expect to see Black participants experience stereotype threat, White participants to experience stereotype lift or no effect, and for Asian participants to not be affected. These effects are expected to be shown through each measure built into the study.

Verbal Anagrams Task. Black participants mistaken for student-athletes are expected to experience stereotype threat causing for a worse performance (a smaller percentage of correct answers) on the Verbal Anagrams Task compared to all other attributions. White participants in the manipulated group are expected to experience stereotype lift or perform similarly to their counterparts in the control group. Asian participants are expected to not experience stereotype threat or lift and are predicted to perform similarly to their control group.

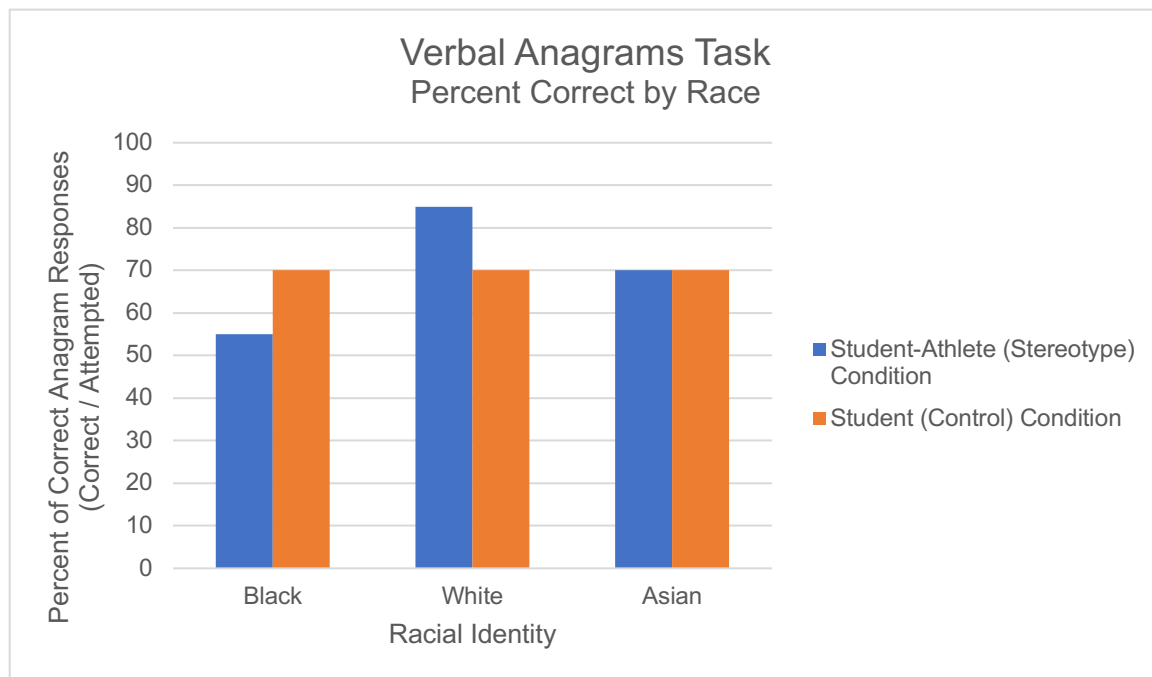


Chart 1: Expected Verbal Anagrams Task percentage of correct answers versus attempted questions by race and condition.

Mind Wandering Items. Mind wandering has been shown to happen when people are under stereotype threat. As such, Black participants are expected to report greater amounts of mind wandering and inability to concentrate. White participants are expected to report fewer, or

similar, amounts while also showing a stronger focus than normal if experiencing stereotype lift. Asian participants are expected to not have differences in mind wandering between the two attributions.

Perceived Academic Belonging at the Institution. Black participants are expected to report lower levels of feeling as though they belong at their academic institution due to stereotype threat.

White participants in the manipulated group are expected to report higher, or similar, levels of feeling as though they belong at their academic institution due to stereotype lift. Asian participants, again, are not expected to report different levels of belonging at their academic institution between groups.

Stereotype Distancing. We also expect Black participants experiencing stereotype threat to report further distancing from the stereotype being questioned. White participants experiencing stereotype lift are expected to report being more closely involved to the stereotype. Asian participants are expected to report similar levels of distancing when rating their preferences to stereotypical items.

Finally, when participants are experiencing stereotype threat, most expected with Black participants, we anticipate participants reporting more negative, less friendly views of the researcher. The opposite is true of the participants experiencing stereotype lift, most likely to occur with White participants. Since Asian participants are not expected to experience stereotype threat or stereotype lift, their reviews of the presenter of the researcher are not expected to have significant variations.

Discussion

The aim of this study is to demonstrate the effects of misidentifying Black, White, and Asian non-athlete students as student-athletes. Following previous literature, Black participants

are expected to experience stereotype threat thus performing worse in the verbal anagrams task along with reporting higher levels of mind wandering, lower levels of perceived belonging, and further distancing from the inflicted stereotype. White participants are expected to experience the opposite effect, stereotype lift. This will lead to better performance on the anagrams task, lower levels of mind wandering, less distancing from the stereotype, and greater perceived belonging. Asian students are not typically stereotyped as “student-athletes” in America; therefore, no stereotyping effects are expected to be observed. This research will ultimately attempt to further contribute to the body of literature surrounding stereotyping.

The study's results will ultimately aim to describe the effect of misidentifying students with a stereotyped population based on their race. Previous work has focused on the effects of stereotypes being made salient to members of the stereotyped group. By examining the effects of misidentifying participants with a group they are not part of, the evidence could show if stereotype threat and/or lift still occur. Additionally, the results will indicate if participants who try to correct the misidentification are affected differently than those who just “brush it off.”

There are several limitations in this study that will hopefully be minimized. Additional scales should be examined to determine participants' current states at the beginning of the study. Alapin et al. (2000) found that fatigue can impair concentration along with increasing likelihood for anxiety. To ensure these results are not confounded, additional measures would need to be analyzed in future work. Furthermore, it would be more concrete to report biological measurements of mind wandering through tests such as EEG (or pupillometry) that map brain (or eye) activity rather than subjective reports. Lastly, this study was adapted to a digital format amid the global COVID-19 pandemic. At this time, there is not an extensive amount of literature examining stereotype threat between two people over a virtual meeting. Being virtual may

impact the size of the effect and should be re-measured and/or compared to studies that follow the same procedure in person to ensure the results are reliable.

By better understanding what exact scenarios affect students, future research will be better suited to mitigate these effects and initiate change to reduce these perceptions. These results will intend to better prepare educators on how to interact with students as not to accidentally interfere with students' performances. Adding to previous research will provide researchers with supplemental information to work toward examining how to assist students manage negative perceptions that arise from stereotyping. Though this study is primarily providing supplemental information to previous work, the results could eventually be instrumental in shaping people's interactions, especially in the classroom.

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