

**PERCEPTIONS OF AMBIGUOUS EVENTS**

by

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A Thesis submitted to the Faculty of the

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Masters in Psychology

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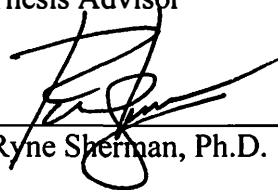
This thesis was prepared under the direction of the candidate's thesis advisor, Dr. Alan Kersten, Department of Psychology, and has been approved by the members of her supervisory committee. It was submitted to the faculty of the Charles E. Schmidt College of Science and was accepted in partial fulfillment of the requirements for the degree of Master of Psychology.

**SUPERVISORY COMMITTEE:**



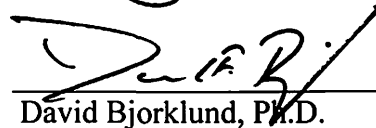
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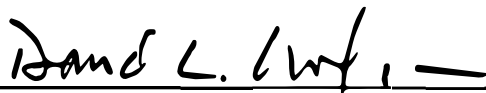
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## **ABSTRACT**

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This study looked at the effects of stereotypes in the media on memory for ambiguous events. The latter were stimuli created to portray individuals of two different racial groups (white and black) in situations that did not necessarily negatively implicate these actors. Two hundred and thirty six participants took part and viewed these events as well as six media clips. Three groups of media clips were shown: clips with black actors, white actors, and both races. A subset of participants, the explicit condition, were asked to rate the media clips for stereotypes, whereas another group, the implicit condition, were instructed that these clips were distractions. The participants' main goal was to remember the ambiguous events they saw and distinguish them from a new set of altered – more negative – events from the old items seen at encoding. A main effect of ambiguous events ethnicity was found, which could be interpreted as participants having more difficulty remembering black actors.

## **DEDICATION**

This manuscript is dedicated to my family and friends. Thank you for the love and support you've provided me throughout my education (also for reading all my papers while I anxiously asked for your opinion). Thank you for understanding me and being there whenever possible. And lastly, thank you for pushing me towards my dreams. I would not have been able to do this without all of you.

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## **INTRODUCTION**

Stereotypes can be defined as beliefs, set by culture, about characteristics of members of social groups (Greenwald & Banaji, 1995). They are ingrained within all cultures and are assumed to be accurate characteristics of groups – even when they are proven not to be. Most are aware of these beliefs and are surrounded by information that may reinforce them – either through casual conversations or while watching a movie. Some stereotypes have more negative consequences than others, as they may cause more harm and be used as justification for negative actions. Studies have shown that stereotypes may be used to comprehend the social world and to make judgments.

Stereotypes are, arguably, ways to conserve cognitive resources by strengthening the relationship between category members and their average characteristics and therefore allowing quicker reactions. For example, seeing a shark's fin circling nearby would make one more apprehensive, even if sharks tend not to attack humans. Within American culture, media portrayals of stereotypes are very common as they are ways to make characters recognizable to their audience. Interestingly, studies have found an association between television habits and beliefs in stereotypes.

### **A Cognitive Understanding of Stereotypes**

#### **Prejudice levels.**

While most are aware of the cultural stereotypes that exist, there are individual differences in how they are applied to real world contexts (Devine, 1989; Lepore & Brown, 1997). Some of those differences are based on the prejudice level of the

individual. For example, a low-prejudice person may be consciously aware of stereotypes, and will therefore perform differently than a person with high prejudice on a task involving memory for people. Sometimes low-prejudice participants may show worse performance in a memory task than high-prejudice participants, but other times these effects are reversed. Performance in these memory tasks is dependent on the individuals that participants are tasked to remember and the degree of prejudice held against these individuals.

In a study looking at bias between Poles and Germans, Sedek, Dabrowska, Maio, and Hecker (2011) found that those who had a higher level of prejudice better remembered relations between the opposing groups. An example of the tasks would be sentences establishing that “Person A is more aggressive than person B” and “Person B is more aggressive than person C.” The test phase would be true or false assertions stating: “Person A is more aggressive than person C” and “Person B is more aggressive than person A.” The differences that were found were accentuated especially if the relations supported the stereotypical beliefs. The high prejudice participants were faster at learning information for all the groups, although they were more accurate at remembering the relations between negatively stereotyped individuals. However, they also performed worse than low-prejudice individuals at remembering the individuals for whom they did not hold strong negative stereotypes. Low-prejudice individuals took more time to study the relationships for both groups, perhaps helping them to accurately remember the given information. The results of this experiment seem to support the efficacy of stereotypes, as they may allow one to process and learn new information faster – as long as that information is congruent with the stereotypes.

Other research debates the validity of stereotypes as processes that are immediately called into use once a group or category is identified (Lepore & Brown, 1999). The recognition of a category and the knowledge of its associated negative stereotypes if systematically linked could bring on a negative effect. However, it is possible that these categories and their alleged characteristics are not perfectly linked. Lepore and Brown (1997) found different performance when priming simply an individual's group membership and when priming the group's stereotypes. After being primed (or not) for the category label "Black people," participants were presented with eight sentences describing attributes of an ethnically ambiguous individual. The participants then rated the individual's personality traits. The high-prejudice participants were more likely to increase ratings of negative attributes and to decrease their rating for positive attributes when exposed to the category label, compared to when they were not primed. The low-prejudice individuals were less affected by the priming. Although all know about the contents of the group stereotypes, the strength of the association between stereotype and group membership is dependent on the prejudice level of the participant.

Research on face processing fails to provide support for automatic processing of stereotypes. Instead, exposure to faces does not lead to categorization of group membership unless it is processed and therefore of interest (Quinn & Macrae, 2005). Participants showed better performance at categorizing by sex during test, if during encoding they were already asked to report the sex of each face. Even with active encoding, participants' performance on the test was increased only if the information was relevant and therefore was attended to.

Prejudice levels are key to understanding and predicting performance in tasks involving memory for people. Performance will fluctuate, depending on the individuals involved and their degree of prejudice. This seems to go along with the idea of stereotypes being a way to expedite our processing. While all know of stereotypes, prejudice implies acceptance of these as truths. This could very much support automatic subscription of these stereotypes. However, some believe that priming or an external stimulus is necessary to bring up those beliefs.

### **Mechanisms of stereotypes**

Although the automaticity and inevitability of stereotyping is debatable, its ability to facilitate retrieval is a consistent finding in the literature, even if it can lead to the creation of false memories. Previous research looking into stereotypes and their implicit effects on memory has been done through the DRM (Deese-Roediger-McDermott) paradigm (Deese, 1959; Roediger & McDermott, 1995). In this paradigm, the participant is given a list of words and is later tested on memory for those words, all of which would fit a theme word that was not present in the encoding list. At testing, participants tend to remember the connecting word despite its absence. Using the DRM paradigm, Lenton, Blair, and Hastie (2001) found more evidence for false memories of stereotypical roles rather than non-stereotypical roles when given a list of words indirectly associated with stereotypes of male and female. The stereotype list in this study would consist of list of careers associated with either males (e.g. lawyer, soldier) or females (e.g. secretary, nurse).

The retrieval induced forgetting (RIF) paradigm has also been used to demonstrate the effects of stereotypes on memory. RIF can be found when testing

memories for associated pairs. The participant reads the list of pairs (e.g. fruit-apple), with one word being the category and the second word being an exemplar, and later on studies the association between one of the exemplars and the category. During testing, other associations (e.g. fruit-banana) would be harder to recognize than the ones that were studied (e.g. fruit-apple), because the studying process inhibited other associations with the main category.

Quinn, Hugenberg, and Bodenhausen (2004), using the retrieval induced forgetting paradigm, found that without the presence of a stereotypic label, the regular practice effects were obtained. The participants were given the name of two individuals: Susan and David. In some cases the names were accompanied with a label (Susan is a feminist; David is an athlete) and in other cases no labels were provided. The participants were then told to try to remember specific traits for each individual (Susan – determined). Some of the traits were negative whereas others were positive. During the testing phase, the participants were asked to recall the traits that had been presented (Susan – de \_\_\_\_). The items that did have a stereotypic label had a moderating effect wherein consistent stereotypic information actually led to facilitation of unpracticed items, whereas inconsistent information underwent the normal forgetting. The consistency of the information depended on the traits learned at practice. If positive attributes were learned at practice, but negative ones were presented in retrieval, then the normal RIF findings were demonstrated.

Using the same paradigm, Dunn and Spellman (2003) demonstrated that if the stereotypes are often repeated – and therefore one is consistently exposed to the stereotypes – they are much harder to inhibit. For high-prejudice participants,

individuating traits were harder to remember than stereotypic ones, whereas a low-prejudice individual was able to suppress the stereotypic information in favor of the individuating traits.

The link between category labels and the corresponding stereotypic information is very strong – as demonstrated by the DRM paradigm. This is made more evident by the RIF paradigm. The ease with which unpracticed items are brought to mind in the presence of a category label suggests that stereotypes are intrinsically linked and readily available for processing. Whether or not this means that stereotypes are brought upon automatically is unclear. While the link between the labels and the stereotypes is clear, the difference between the high-prejudice and low prejudice participants may show the strength of the connection for one group compared to the other. This might be reinforced by exposure to consistent information supporting those beliefs.

### **Media Content**

According to the General Learning Model, a personal variable and a situational variable interact to influence internal state. This is supported by Yao, Mahood, and Linz's (2010) study on cognitive effects of sexually explicit video games. After playing an explicit game – Leisure Suit Larry – for 25 minutes, participants reported an increased tendency to engage in inappropriate sexual advances. In this case the situational variable would be the video game, the personal variable could be considered the participant's willingness to play these video games and the resulting sexual advances would be the modified internal state. It is not difficult to extend the relationship between Yao et al.'s experiment to the proposed effects of stereotypes on memory. Those that tend to watch shows that contain more stereotypical materials may be doing so because of a personal



disposition that attracts them to these materials, but the viewing may be increasing this disposition.

Racial stereotypes in media are constant and repeated, they support already primed ideas, and could potentially make these ideas automatic for retrieval (Gorham, 1999). Given the effects of consistent and persistent exposure to stereotypes, it is important to determine the prevalence of these stereotypes in the media. It has been observed that negative stereotypes are indeed prevalent in the media. When analyzing prime time television shows during a two-week period in March 2007, Turner, Heiserman, Johnson, Cotton and Jackson (2010) found that the characters were predominantly White American (74%), followed by Black American (16%). Hispanics comprised 5% of the characters represented. Of these characters, the Hispanic group was most likely to have an accent and be ridiculed. Black Americans and Hispanics were both more likely to be shown as immoral, despicable, and less intelligent.

Weisbuch, Pauker, and Ambady's (2009) experiments demonstrated the influence of nonverbal cues on perception of characters. They sampled, muted and edited ten seconds of eleven television shows. Participants were to rate the extent to which unseen – i.e., edited out – characters were liked and treated well by others in the show based on nonverbal cues. On average, the black characters were voted to be less favored among other characters by participants. To calculate the influence on viewers' perceptions, the researchers showed either silent “pro-white” or “pro-black” clips to participants. In those clips, the nonverbal cues were favorable toward one group and more negative towards the other. After viewing these clips, the participants' race associations were calculated. The results suggested that attitude toward one group influenced future associations:

Participants in the pro-white condition showed more positive associations towards whites and negative ones towards blacks and vice versa for the pro-black condition. Further research showed that the bias was only evident for the social group participants were exposed to.

Considering these negative portrayals of some ethnic groups, it is important to help understand whether they can affect the perspectives of group members. In a study by Ford (1997), exposure to a comedy skit containing negative stereotypes led to African American targets being estimated as more guilty of a crime than their counterparts. The participants read a vignette about a physical assault and were asked to judge the guilt of the perpetrator. Evidence against the alleged criminal was circumstantial. The race of the accused was controlled by names that bring to mind a social group (Todd or Tyrone). Prior to reading the vignette, participants viewed the comedy skit that portrayed African Americans' negatively or neutrally. The skit may have exaggerated the guilt rating by diminishing the importance of its contents through comedy. In other words, participants may have been more receptive towards the negative stereotype and less analytical because it was a comedy skit.

Using the social cognitive theory as a model, researchers have found a relationship between television consumption and beliefs. This theory suggests that individuals learn behaviors through observing their environment, with the cognitive abilities of each individual mediating that relationship. Those who consume negative images of African Americans held more negative stereotypes of these individuals in real life (Tan, Fujioka, & Tan, 2000). Also using this theory, Pajares, Prestin, Chen, and Nabi (2013) discuss the necessity for the audience member to attend to the stimuli and to see a

portrayal of relevant events. These – among others – allow an effect of media consumption on the audience’s behavior. Viewers of a show or movie would be more likely to be affected by what they are viewing if it is perceived as relevant. Macrae, Bodenhausen, Milne, Thorn, and Castelli (1997) did demonstrate that stereotype activation might only occur when it is socially relevant and therefore adds meaning to a situation. If stereotypes are called upon even if irrelevant then they would be more of a burden than a helpful tool and would not accomplish their purpose of cognitive economy.

Another interesting layer is the fact that sympathy towards another group member is dependent on one’s own group membership (Mastro, Lapinski, Kopacz, & Behm-morawitz, 2009). For example, a white female should show less leniency when attributing guilt to a black male than a black female; the more common characteristics, the stronger the identification. With more disparity between social identities, the higher the likelihood of negative attitudes towards the perceived out-group. Of course, this is dependent on one’s level of identification with one’s own social groups.

The consistent and perpetual media exposure to stereotypes may have an effect on viewers’ perceptions and internal states. These stereotypes and negative attitudes seem apparent even with nonverbal communication and are reinforced by their dismissal through comedy. Careful experimentation reveals the effects of those exposures on the perceptions of others. This seems especially true when socially relevant and about a member of an out-group.

### **Present Study**

Based on the preceding information, the present study examined the effects of stereotypes regarding race and ethnicity on memory for events, using media clips in

which members of a group are performing negative stereotypical actions. The clips were used to prime the participants for stereotypes they may hold. Ultimately, these clips were expected to influence the perception of another set of videos that were presented: the ambiguous events. It has been shown that media priming is stronger in ambiguous situations (Roskos-Ewoldsen & Roskos-Ewoldsen, 2013). In this experiment the ambiguous events depicted a person performing an action that could be interpreted as either negative or neutral. If the media clips do, in fact, influence participants, what they had previously understood as neutral would now be interpreted as negative. Some of the participants viewed the events with media clips that do not contain stereotypical behaviors. These participants, therefore, should be more likely to remember the events as they were presented originally.

Yet, if stereotypes are automatic and inevitable, then the presence and perception of a category is all that would be needed to create a reaction. Conversely, if stereotypes are non-automatic, then it would be necessary to prime the categories and the behaviors. This experiment was designed to test whether all that is needed to activate a stereotype is the presence of the group members. Given that none of the target individuals in the ambiguous events behaved in a way that was explicitly congruent with their group's stereotype, the events and behaviors themselves did not allude to these conceptions. Consequently, if participants did not accurately remember the events as presented to them, but rather demonstrated a similar pattern as the groups viewing the priming clips, it would allow us to conclude that stereotypes are brought forward by the simple act of categorization.

Performance based either on the presence or absence of the priming media clips allowed one to manipulate and observe the effects that television or film watching could have on our perceptions of real life events. There is limited research that looks at the effects of stereotyping on multiple videos – and therefore, the effects on memory for the actions of multiple individuals. Most look at either the effects of lists of words, or trait judgments for a set of pictures, or a single video – consequently, one or two individuals. This limitation is consequential since it may not show the extent of the effects of stereotyping on memory for individuals' actions.

As was previously mentioned, knowledge of stereotypes does not necessarily translate into behavior (Devine, 1989). Because of this, it is important that the participants undergo a test of associations to assess their prejudice level, in this case the Implicit Association Test. Prejudice levels may cause a difference in results, as a high prejudice individual will likely be more affected by priming than a low-prejudice participant.

## **METHOD**

### **Participants**

Two hundred and thirty six undergraduates (74 males, 154 females) at Florida Atlantic University participated in this experiment in partial fulfillment of general psychology course requirements. One participant was American Indian or Alaskan Native, 9 were Asian, 60 were Black, 119 were white, five participants preferred not to answer, and 35 participants chose Other Ethnicity. Two hundred and nineteen participants were between the ages of 18 to 21, four were between 22 to 25, five were between 26 to 30, and one was between 31 and 40.

### **Stimuli**

Participants were shown 16 ambiguous events (AE) on a 1920x1080 screen, eight of which portrayed black actors and another eight portrayed white actors. A total of eight males and eight females were used as actors, with four actors of each gender being white and four actors being black. Each video featured one actor taking part in an ambiguous event. The ambiguity of these events stemmed from the nature of the situation shown in the videos. The actor's behavior throughout the video was designed to be interpreted as neither negative nor positive. Other actors were also present during some of the ambiguous events to provide context. For example, in one of the events a woman goes towards a bathroom and opens her medicine cabinet, she notices that her medication is used up, and then she walks away (for a full list of descriptions see Appendix A). The actions viewed were performed by different actors for different participants, in order to

control for any stereotypes that might have been unintentionally evoked by an individual actor. The scene with the medication was played both by a white female and a black female. Each participant only viewed that specific scene once played by only one of these actresses. Two sets of videos were constructed from these scenes, with one set involving eight black actors and eight white actors taking part in the various scenes, and the other set reversing these assignments. One set of the 16 neutral videos lasted a total of 542 seconds, while the other set of neutral videos lasted 554 seconds.

The Visual Paired Associates (VPA) Test presented participants with a box filled with a color next to a box with a simple line drawing. Participants were shown a single pair for three seconds, after which a second pair was presented. A total of six pairs were shown to participants. After the presentation of all six pairs, the participants are asked to practice by typing in the color they believed was associated with the line drawing being shown. After five seconds, regardless of whether or not the participant correctly answered, the stimulus disappeared and was replaced by the name of the correct color. This encoding and practice session was done three times. At the end of the encoding process — approximately ten minutes later — participants underwent a testing session which consisted of showing the line drawings. Participants were instructed to type in the color that they believed was associated with each drawing. They were shown all six line drawings and were given five seconds to type their answers before the stimuli disappeared. Their answers were not corrected at testing.

After the ambiguous events, participants viewed six media clips (MC). A total of 22 media clips were chosen (Appendix B), eighteen of which were shown in the encoding session. They were divided by the ethnicity of the target: six clips featured black actors

and six featured white actors. The six clips featuring black actors lasted a total of 295 seconds, with the shortest clip being 23 seconds long and the longest being 77 seconds. For the six clips featuring white actors, the total length is 291 seconds long, with the shortest clip being 18 seconds long and the longest being 74 seconds. The MC following the ambiguous events showed stereotypes of one of these two social groups depending on the condition. In the black condition, only the clips featuring black actors were shown. In the white condition, only the clips featuring white actors were shown. In the control condition, three clips showed black actors and three showed white actors; these were chosen so as to not evoke any stereotypes. The control clips lasted a total of 305 seconds, with the shortest clips being 30 seconds long and the longest being 80 seconds. Following retrieval and prior to doing the IAT, participants were shown 4 videos that were meant to neutralize any potential negative effects of the previous stereotypes. Those four clips lasted a total of 263 seconds. The participants also took part in the Wisconsin Card Sorting Task (WCST), which asked the participants to sort cards based on color, shape, and number.

Later on in the experiment, the participants either viewed the original video shown earlier or an altered one. Ten videos shown were negative (“new”) items, and six were old items they had seen. The alterations stemmed from the actors overall change in behavior and facial expressions that were meant to be interpreted as more negative and suggestive of a bad behavior. Using the same example as above, the difference between the negative and neutral events came from the woman’s nervous mannerisms while walking towards and away from the bathroom and her reaction when seeing an empty medicine bottle, perhaps suggesting an addiction.



The Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) presented images of people that are either black or white and two attributes: one good (marvelous, superb, pleasure, beautiful, joyful, glorious, lovely, wonderful) and the other bad (tragic, horrible, agony, painful, terrible, awful, humiliate, nasty). This study used the stimuli based on Nosek et al. (2007). The images shown to the participants were twelve pictures of male and female white and black individuals, cut out from their eyebrows to the upper lip. These images are associated with an attribute at the beginning of a task, which is shown either on the right side or the left side of the screen. Participants are asked to quickly connect the category with words associated to this attribute by pressing either the “e” key for the left side or the “i” key for the right side. The associations are switched throughout the test and are compared to see which ones have a quicker response time.

### **Procedure**

Participants in the experimental conditions were not told the purpose of the study. They were instructed that the test was designed to assess how well they could remember people’s actions, with the Media Clips serving no other purpose than to distract them from the AEs.

Before encoding, participants underwent a computerized version of the Visual Paired Associates (VPA) test from the Wechsler Memory Scale-Revised. All three experimental conditions saw the entire set of ambiguous events, but they differed in the ethnic group featured in the media clips. In the black condition, the six media clips showed black actors behaving in a stereotypically negative light. In the white condition, these media clips showed white actors acting stereotypically. And, finally, the control

condition showed six clips depicting non-stereotypical behavior, separated into three clips portraying Blacks and three clips portraying Whites. Participants also took part in a vocabulary test and filled out a demographic questionnaire. Afterwards, memory for the ambiguous events was tested by showing either the original video shown at encoding or an altered video. The participants stated whether or not the events they saw at testing were the same as the ones seen earlier. The dependent variable, therefore, was the proportion of "yes" responses to the question "Did you see this same video in the first part of the experiment?" When this question followed an original video (or an old video) the correct answer was "yes". However, if it instead followed an altered video (therefore new), "yes" would be incorrect.

At the end of retrieval, the IAT was given to assess prejudice level. The response time is said to indicate which associations are stronger. For example, if the participants were quicker to associate positive words to blacks and negative words to whites, then it would be assumed that this participant had a positive association to African American individuals and a negative one towards white individuals.

After undergoing the memory test and the IAT, the participants were asked to complete a survey. The survey inquired upon the participant's familiarity with the media clips shown and the participants' television and movie viewing habits (Appendix C). The participants also had a multiple choice test for their memory of the media clips they saw at encoding. Appendices D, E, and F provide the questions asked to the participants.

To control for and measure the efficacy of the MCs, some participants were told the true purpose of the experiment and of the media clips. They were also told that some of the MCs may or may not contain stereotypes and were asked to say if there were

stereotypes in the MCs that they viewed. In these explicit stereotype conditions, the participants were asked to rank the actions in each MC on a scale of 1 to 5, where "1" is not at all stereotypical and "5" is extremely stereotypical. Apart from these differences, they underwent the same process as the participants in the implicit experimental conditions and the implicit control condition, first viewing the ambiguous events and later being tested for their memory of these events.

### **Design**

This was a mixed design experiment with one between-subjects independent variable being media clip presentation, with three levels (Black, White, and Control conditions). A second between-subjects independent variable was instructional condition, with two levels (explicit stereotype vs. implicit stereotype condition). Within-subjects independent variables were item type (new vs. old item) and the ethnic group of the ambiguous events actor (Black and White). The level of prejudice was used as a covariate. The dependent variable was the proportion of "yes" responses to the test items.

## RESULTS

### Media Clip Ratings

An analysis of variance (ANOVA), indicated a significant effect of media clip ethnicity on explicit ratings of stereotypes ( $F(2, 87) = 4.018, p < .05$ ). A post hoc comparison between the media clips with black actors ( $M = 3.44, SD = .70$ ) and the ones featuring white actors ( $M = 2.93, SD = .91$ ) showed a significant difference ( $p < .05$ ), with higher ratings of stereotypical content in the media clips featuring black actors. There was also a significant difference between the rating of the media clips with black actors and the control video clips involving both groups ( $M = 2.96, SD = .78; p < .05$ ). There was not a significant difference between the white media clips and the control media clips ( $p = .991$ ).

### Rates of False Identification for Ethnicity

Memory performance for the ambiguous events was measured by observing the rate of false recognition of the new events. Zero would indicate that participants correctly identified the new items and positive numbers would indicate some degree of false recognition of the new items as old, up to a maximum of one, indicating that all of the new items were falsely recognized as old. This was done because there was variability in the number of old items given in the different conditions. Doing an analysis looking at the difference between the correct proportions and the incorrect yes responses may have added errors to the analysis.

A repeated measures ANOVA with no covariate showed a main effect of ambiguous events ethnicity ( $F(1, 174) = 8.648, p < .05$ ). Participants incorrectly identified the black actors ( $M=.40, SD=.303$ ) more than the white actors ( $M=.34, SD=.30$ ). No main effect was found for the condition ( $F(1, 174) = .071, p = .791$ ) as well as for the media clip ethnicity  $F(2, 174) = .081, p = .922$ . The interaction between media clip ethnicity and condition also produced no significant effects ( $F(2, 174) = .611, p = .544$ ). Table 1 shows participant's performance for actors' ethnicity

The IAT did not account for any of the variance, since no significant effect was found when it was included in the analysis ( $M= .35, SD= .46; F(1, 173) = 0.0, p = .989$ ). Table 4 provide IAT measures for the different conditions.

### **Rates of False Identification for Actors of Different Genders**

For this analysis, the number of old items was consistent for both males and females. Because of this we analyzed the false identification rate based on the difference between the proportions of correct responses and the proportions of incorrect responses. With this new measure, the meaning of a score of zero and of one changed, where a zero now signifies no discrimination of old and new items and a one would mean that a participant perfectly discriminated old and new items.

There was a significant difference in participants' responses ( $F(1, 215) = 21.487, p < .001$ ), with the males ( $M= .44, SD= .39$ ) being more likely to be false recognized than the females ( $M= .56, SD= .33$ ). The analysis also shows an interaction that approaches significance between gender and media clip ethnicity ( $F(1, 215) = 2.657, p = .072$ ). Table 2 represents the data looking only at actors' gender.

### **Rates of False Identification Based on Gender and Ethnicity**

Because of the above findings, we ran another analysis to look at participants' false identification based on the actors' ethnicity and gender. Some of the conditions involved no old items for the black males, and others showed no old items for white males. These conditions were also the ones that had the most new items. Because of this, in this analysis the rates of false identification were calculated with only the incorrect yes responses. The repeated measures ANOVA also yielded significant main effect ( $F(3, 651) = 11.302, p < .001$ ) for this analysis. Table 3 shows the data divided based on gender and ethnicity. A pairwise comparison showed that participants were more likely to falsely recognize black males than black females ( $p < .05$ ) as well as white females ( $p < .001$ ). White males were also more likely to be falsely recognized than white females. The comparison approached significance when looking at participants' false recognition of black females compared to white females ( $p = .083$ ).

## **DISCUSSION**

### **Effectiveness of the IAT**

Performance on the IAT appears to have been unrelated to memory performance. It was originally predicted that the IAT would be used essentially as a control for participants' own biases. It is debatable, however, whether this test actually does measure individuals' implicit associations. Some have criticized it for measuring states instead of the traits it is thought to measure (Fiedler, Messner & Bluemke, 2006) and previous research has shown that simple instructional changes will yield different results in the IAT (Wallaert, Ward, & Mann, 2010). In this study, we were careful to not provide any additional instructions that could alter the results of the IAT. However, this experiment does show clips that were rated as being stereotypical, which might have skewed the results of the IAT and therefore the participants' true underlying biases (assuming the IAT does actually measure people's traits and not states).

### **Effectiveness of Media Clips**

While there were differences in the ratings of the stereotypes depicted in the different sets of media clips, the clips chosen not to evoke stereotypes were rated to be "somewhat stereotypical" by the participants (see Figure 3). It is possible that these clips do not, in fact, evoke stereotypes and that it is the very act of asking that made participants search for any potential stereotypes in these clips. However, it is also possible that the clips shown do portray stereotypes held by American culture. Because of this uncertainty, it is unclear whether the control clips should in fact be considered

controls for the clips that were chosen to portray stereotypes. Overall, there was a difference found between the media clips featuring black actors compared to the ratings for the other two types of media clips. The former was rated as portraying more stereotypes, but all the media clips were rated close to a three, which was understood to mean “somewhat stereotypical.”

### **Comparison of the Implicit v. Explicit Conditions**

The differences between the implicit conditions and the explicit conditions in their memory performance were not significant (see Figure 1). This was unexpected, as it seemed likely that if one had to perform the extra task of rating the clips, they would then be more preoccupied while watching them than those participants in the implicit condition. The participants in the explicit condition could be considered active perceivers of these media clips. The literature on passive versus active perceivers seems to support the notion that while not more accurate in their responses than active perceivers, passive perceivers are more confident and therefore less resistant to change in their perceptions of others (Waggoner, Smith, & Collins, 2009). The implicit condition arguably should have rendered participants as more passive perceivers of the media clips. This passivity would have made them more malleable to the effects of the media clips, and possibly more resistant in their perceptions of the ambiguous events. The interaction between condition and media clip ethnicity was not significant so we cannot draw this conclusion.

### **False Identification Rates**

However, we did find an effect for the false alarm rates between the ambiguous events featuring white actors and those featuring black actors, with there being more false alarms with the black actors, implying that participants are more likely to falsely



recognize the latter as behaving in a negative light (see Figure 1 and 2). Because of this finding we conducted another analysis looking at participants' response based on gender (see Figure 5). This revealed a similar main effect, with men being more likely to be falsely recognized than women. Further analysis shows that even more specifically, black men were more likely to be falsely recognized than any other group (see Figure 6 and 7). Considering that the majority of our participants were women and the largest racial subset was white, this is not necessarily surprising. Past research does show that the fewer common characteristics one holds with a member of a group, the easier it is to attribute guilt (Mastro, Lapinski, Kopacz, & Behm-morawitz, 2009). This seems a particularly compelling interpretation as the actors most similar to the demographics of our sample size were more likely to be correctly identified. The actors holding at least one of these characteristics (female or white) were remembered equally.

### **Future research**

It is possible that the lack of findings in this research is due to issues with the stimuli created and chosen. The ambiguous events do show an appropriate level of correct recognition without showing a ceiling or a floor effect. This was a major concern, as some of the differences between the old and the new videos are minor and might even be considered negligible. An ANOVA comparing the different tests given to the participants does show that one particular group of new videos featuring the white actors seems to allow for an easier discrimination between the old and the new videos compared to the other sets of test stimuli. It is possible that some of the differences created for the new videos were easily recognizable, and lacked the subtlety of the others. This might

also explain the main effect of ethnicity found for the false alarm rate in the ambiguous events.

The media clips were rated as somewhat stereotypical by most participants. It might be beneficial to use clips rated as more stereotypical. This might show more of an effect on the memory for the ambiguous events. Using media clips that were rated beforehand as being non-stereotypical for a control condition would allow for more analysis on the automaticity of stereotyping. The lack of true control clips in this experiment limited the possible analyses of effects of stereotypes. An experiment involving the ambiguous events along with a secondary task that is known to be taxing would be interesting. This would allow one to look at performance for the ambiguous events when participants are using an extensive amount of cognitive resources, compared to participants with few or no distractions.

All that being said, with improvements, it may be possible to find significant effects using this paradigm. While many of the analyses were non-significant, it could be that with minor modifications and more careful selection an effect will be found. When considering the most recent issues surrounding discrimination within the United States — issues hinging upon the portrayal of Black Americans in the media — a study looking at how negative portrayals can exaggerate underlying biases is important. If it can be shown that participants being more passive about their viewership experience were more likely to make mistakes when tested on their memory, it could be said that stereotypes are automatically brought upon to preserve cognitive functions. However the act of stereotyping might still be controllable if given a task that took more cognitive effort to

process. Empirical support towards this hypothesis would be the first step towards understanding any needed changes in our quotidian viewing habits.

## **APPENDIXES**

**Appendix A. Ambiguous Events Description**

**Appendix B. Media Clips Descriptions**

**Appendix C. Memory for Ambiguous Events Questionnaire**

**Appendix D. Memory for Media Clip Conditions 1 and 4**

**Appendix E. Memory for Media Clip Conditions 2 and 3**

**Appendix F. Memory for Media Clip Conditions 5 and 6**

## APPENDIX A. Ambiguous Events Descriptions

### **Scene 1**

Target is somewhere public on a computer. Someone walks behind them and touches targets shoulder, target closes the screen.

*Neutral:* Person is trying to pay attention to the conversation.

*Negative:* Person is hiding something illicit.

### **Scene 2**

A person is in a diner and finished eating, she receives a check, looks at it and looks back to the waiter.

*Neutral:* Person is anxious to leave but will pay the check.

*Negative:* Person walks away without paying.

### **Scene 3**

When walking in a park, the target sees a homeless man on the floor. Will he give money?

*Neutral:* Person seems more sympathetic and lingers around man.

*Negative:* Person almost ignores man and only stops briefly.

### **Scene 4**

A student is in a library. They are looking for a desk. They come across one that is full of items. One of these is a computer. They look at the computer.

*Neutral:* Person will move along.

*Negative:* Person may do something illegal or take the space for themselves.

### **Scene 5**

A person drops their wallet on the floor. Target finds it, looks inside, and sees cash along with contact information.

*Neutral:* Finding the wallet doesn't get any real reactions.

*Negative:* When finding the wallet, actor is more suspicious and seems dismissive of the contact information

### **Scene 6**

Person walks into the bathroom, checks medicine cabinet, takes a bottle, looks into it and finds it empty. Person looks disappointed.

*Neutral:* the fact that the bottle is empty doesn't really bother the person. Maybe a little disappointed.

*Negative:* the fact that the bottle is empty is almost devastating. There should be more nervous mannerisms.

### **Scene 7**

A customer is looking through a selection of jewelry, and picks up the items that they are interested in. They look at it for a bit.

*Neutral:* Customer is only interested and his simply looking at the item.

*Negative:* Customer will steal the jewelry.

### **Scene 8**

A student is taking a makeup exam with their TA. Phone rings teacher checks it and walks out. Target student is shown looking at his/her backpack that is next to him/her.

*Neutral:* Student is only looking at the backpack. Less nervous mannerisms.

*Negative:* Student's face is more nervous.

### **Scene 9**

Student is studying for an exam. He or she receives an email from a friend with previous test questions for the same class.

*Neutral:* Student's facial reaction is more neutral, maybe a little angry.

*Negative:* Student's facial reaction is more nervous and considering.

### **Scene 10**

A person is running down a park.

*Neutral:* Person is jogging.

*Negative:* Person is running as if trying to run away from someone.

### **Scene 11**

Teacher (or TA) is grading papers, however he or she is continuously sipping from a bottle full of liquid.

*Neutral:* TA is more matter of fact while going through papers.

*Negative:* TA's behavior is increasingly more loopy.

### **Scene 12**

Two people are doing their homework, one seems to be having some difficulty, the other leaves.

*Neutral:* The student with the difficulty goes on.

*Negative:* The same student seems more tempted.

### **Scene 13**

Person is in a full parking lot, with only the handicap spot open.

*Neutral:* Person seems more disappointed.

*Negative:* Person looks as if they'll be parking in that spot.

### **Scene 14**

Two people are in line at the ATM. The person in front takes some time to finish their transaction, then finally leaves. The next person walks in and sees that the previous customer left his/her card in the machine.

*Neutral:* Person looks as if they intend on returning the card and searching for the owner.

*Negative:* Person looks as if they'll be using the card to withdraw money from.

### **Scene 15**

A person is walking towards a house/apartment, with a package, knocks on the door, waits, and then leaves

*Neutral:* The person seems more calm, knocks more softly and waits longer.

*Negative:* The person knocks harder and waits a shorter amount of time.

### **Scene 16**

Student goes towards fire alarm and pulls it.

*Neutral:* Student walks frantically towards the alarm and pulls it with more force.

*Negative:* When student walks towards alarm, he seems calm and looks around before pulling the alarm.



## APPENDIX B. Media Clips Descriptions

### Experimental Condition

#### Clip 1 – *Glee – Season 3 Episode 3*

Actor's ethnicity and gender: Black Female

Scene Description: A character arrives late to a dance rehearsal, stating she overslept and isn't feeling well. She's accused by the rest of the group of being lazy.

Length: 1 minute 2 seconds

#### Clip 2 – *True Blood – Season 1 Episode 1*

Actor's ethnicity and gender: Black Female

Scene Description: When a customer asks an employee for help to find an item in the store, the employee refuses to help and the two start an argument. The employee quickly gets verbally abusive and curses, until finally she resigns.

Length: 1 minute 17 seconds

#### Clip 3 – *Diary of a Mad Black Woman (2005)*

Actor's ethnicity and gender: Black Female

Scene Description: A woman knocks at the door late at night; another woman answers with a gun, startled, then realizes the visitor is a family member.

Length: 26 seconds

#### Clip 4 – *The Devil Wears Prada (2006)*

Actor's ethnicity and gender: White Female

Scene Description: While bragging about her privileges, a female employee explains to a new hire her responsibilities.

Length: 40 seconds

Clip 5 – *She’s The Man* (2006)

Actor’s ethnicity and gender: White Female

Scene Description: Two females are discussing a male in the bathroom, with one stating that she’ll be admitting her affection for the male soon. A third female comes out of a stall and is revealed to be the ex-girlfriend. She immediately confronts the latter of the two.

Length: 1 minute 14 seconds

Clip 6 – *Mean Girls* (2004)

Actor’s ethnicity and gender: White Female

Scene Description: A female cancels plans with her parents with the understanding that she’d stay home by herself, and then plans a small get together with her friends.

Length: 1 minute

Clip 7 – *Diary of a Mad Black Woman* (2005)

Actor’s ethnicity and gender: Black Male

Scene Description: Female is asking for help from the male, he starts getting physically abusive and grabs on to her.

Length: 23 seconds

Clip 8 – *Four Brothers* (2005)

Actor’s ethnicity and gender: Black Male

Scene Description: Two felons rob a convenient store, shot the clerk as well as an older customer.

Length: 45 seconds

Clip 9 – *Four Brothers (2005)*

Actor's ethnicity and gender: Black Male

Scene Description: A crime lord comes into a restaurant to reprimand his workers for not following instructions. He does use explicit language.

Length: 1 minute 2 seconds

Clip 10 – *What Women Want (2000)*

Actor's ethnicity and gender: White Male

Scene Description: A male is flirting with a barista and is very insistent, even with the barista's refusal. The male is able to change her mind through play of words.

Length: 1 minute 2 seconds

Clip 11 – *Glee Season 1 Episode 1*

Actor's ethnicity and gender: White Male

Scene Description: Two athletes are discussing why one will be missing practice. The student states that his mother is having her prostate removed.

Length: 37 seconds

Clip 12 – *Modern Family Season 1 Episode 2*

Actor's ethnicity and gender: White Male

Scene Description: Two parents are explaining their morning routine to get their children ready. The father states he gets up at 7 in the morning and is surprised to hear his wife wakes up an hour earlier than him.

Length: 18 seconds

**Control Condition**

Clip 1 – *Diary of a Mad Black Woman (2005)*

Actor's ethnicity and gender: Black Male

Scene Description: A man and a woman are having dinner, the male observes that the female is surrounding herself with figurative walls, the female protests.

Length: 1 minute

Clip 2 – *Glee Season 3 Episode 3*

Actor's ethnicity and gender: Black Female

Scene Description: Two females are seen talking and hugging, one of them meets with her boyfriend and confronts her about being nice to her competition.

Length: 51 seconds

Clip 3 – *True Blood Season 1 Episode 1*

Actor's ethnicity and gender: Black Female

Scene Description: A female complains to her friend about her life and the fact that she can't keep a job.

Length: 30 seconds

Clip 4 – *What Women Want (2000)*

Actor's ethnicity and gender: White Male

Scene Description: A male pays a female a visit late at night to discuss her recent job loss and the fact that their employer wants to hire her back.

Length: 1 minute 20 seconds

Clip 5 – *She's The Man (2006)*

Actor's ethnicity and gender: White Female

Scene Description: Two people are talking before a science class, one admits to not being comfortable dissecting.

Length: 54 seconds

Clip 6 – *Mean Girls (2004)*

Actor's ethnicity and gender: White Female

Scene Description: A female arrives in a math competition

Length: 30 seconds

**Neutralizing Videos**

Clip 1 – Think Like a Men

Actors ethnicity: Black male and female

Scene Description: A woman arrives for a date and is impressed.

Length: 1 minute 2 seconds

Clip 2 – Devil Wears Prada

Actors ethnicity: White male and female

Scene Description: A group talks about their issues at work.

Length: 1 minute 2 seconds

Clip 3– Think Like a Man

Actors ethnicity: Black

Scene Description: A man approaches a woman in a bar.

Length: 1 minute 2 seconds

Clip 4 – What Women Want

Actors: White

Scene: A woman does a presentation explaining her goals for the company.

Length: 1 minute 17 seconds

**APPENDIX C. Memory for Ambiguous Event Questionnaire**

1. How often do you watch television?

- a. Very Often
- b. Fairly Often
- c. Sometimes
- d. Almost Never
- e. Never

2. How often do you watch movies?

- a. Very Often
- b. Fairly Often
- c. Sometimes
- d. Almost Never
- e. Never

3. What are your favorite genres?

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4. Do you watch a show or movie passively or actively?

- a. Passively
- b. Actively
- c. Both, it depends

5. How involved (i.e. think about a show, talk about it, discuss it and maybe even analyze it) do you find yourself with the shows or movies you watch?

- a. Not at all
- b. A little bit
- c. Very
- d. Extremely

6. Do you recognize any of the clips in the experiment?

- a. Yes
  - b. No
- Which one(s)?

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7. What do you think was the purpose of these clips?

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## APPENDIX D

### Memory for Media Clips

#### Conditions 1 & 4

1. In one of the videos a man was trying to convince a woman to go on a date. What was the woman's aspired profession?
  - a. A painter
  - b. A writer
  - c. An actress
  - d. A teacher
2. The football player is not going to be able to attend the next practice because \_\_\_ is sick.
  - a. His aunt
  - b. His niece
  - c. His mom
  - d. His grandmother
3. What is the name of one of the three females talking in the bathroom?
  - a. Nancy
  - b. Olivia
  - c. Christina
  - d. Marie
4. The two women discussing their work balance are working for \_\_\_\_\_.
  - a. The fashion industry
  - b. The cooking industry
  - c. A publishing company
5. Early in the morning, the husband believes that his wife is a \_\_\_\_\_.
  - a. Raccoon
  - b. Rat
  - c. Dog
  - d. Possum
6. One of the characters was planning a party of what size?
  - a. A small get together, maybe 8-10 people
  - b. A large one over 100 people
  - c. A party with a little over 20 people.

## APPENDIX E

### Memory for Media Clips

#### Conditions 2 & 3

1. In one of the clips, the girl stopped dancing because she was \_\_\_\_\_:
  - a. hungry
  - b. tired
  - c. sick
2. When we first see the employee at Super Save a Bunch, she was:
  - a. working
  - b. reading
  - c. cleaning
  - d. doing her nails
3. The woman in the convenience store is food shopping for \_\_\_\_\_
  - a. No special occasion
  - b. Thanksgiving dinner
  - c. Christmas dinner
  - d. Breakfast
4. The couple is having a fight in the \_\_\_\_\_
  - a. Dining room
  - b. Bedroom
  - c. Living room
  - d. Office
5. Why was the man upset in the restaurant?
  - a. His employees didn't follow his orders
  - b. His employees disrespected him
  - c. He wasn't upset
6. In the middle of the night, the woman knocked at her \_\_\_\_\_ door.
  - a. Mother's
  - b. Grandmother's
  - c. Aunt's
  - d. Friend's



## APPENDIX F

### Memory for Media Clips

#### Conditions 5 & 6

1. The couple is having a discussion over:
  - a. Coffee
  - b. Snacks in a bar
  - c. Home cooked dinner
  - d. Dinner
  
1. What was the boyfriend's reaction when he sees his girlfriend hug her enemy?
  - a. He was very angry
  - b. He discussed the event with her
  - c. He had no reaction
  
2. The bartender's approach to the waitress made her feel \_\_\_\_\_.
  - a. sad
  - b. happy
  - c. uncomfortable
  
3. The woman has to leave her current home, because:
  - a. She lost her job
  - b. She doesn't like it
  - c. Too much noise in the neighborhood
  - d. She is moving
  
4. The girl is impressed by what?
  - a. His lyrics
  - b. His drawing
  - c. His smarts
  - d. His singing
  
5. The group is attending a(n) \_\_\_\_\_ competition.
  - a. Athletic
  - b. Singing
  - c. Gymnastic
  - d. Academic

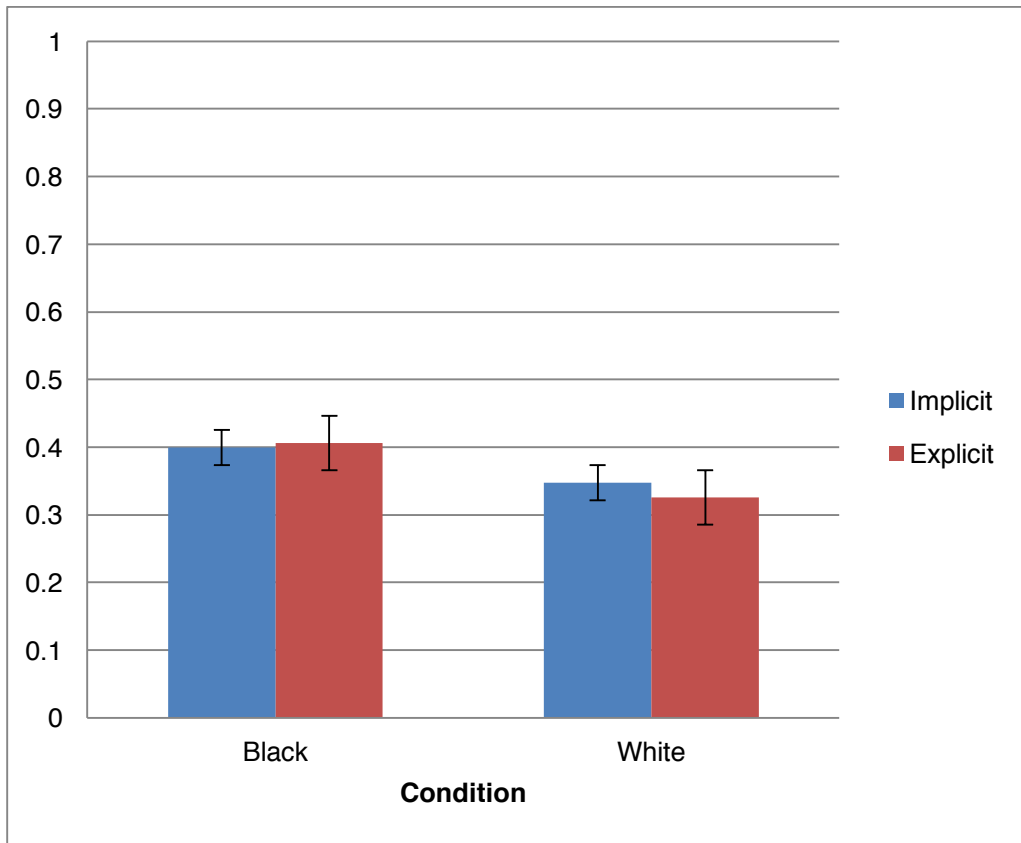


Figure 1 Implicit vs. Explicit

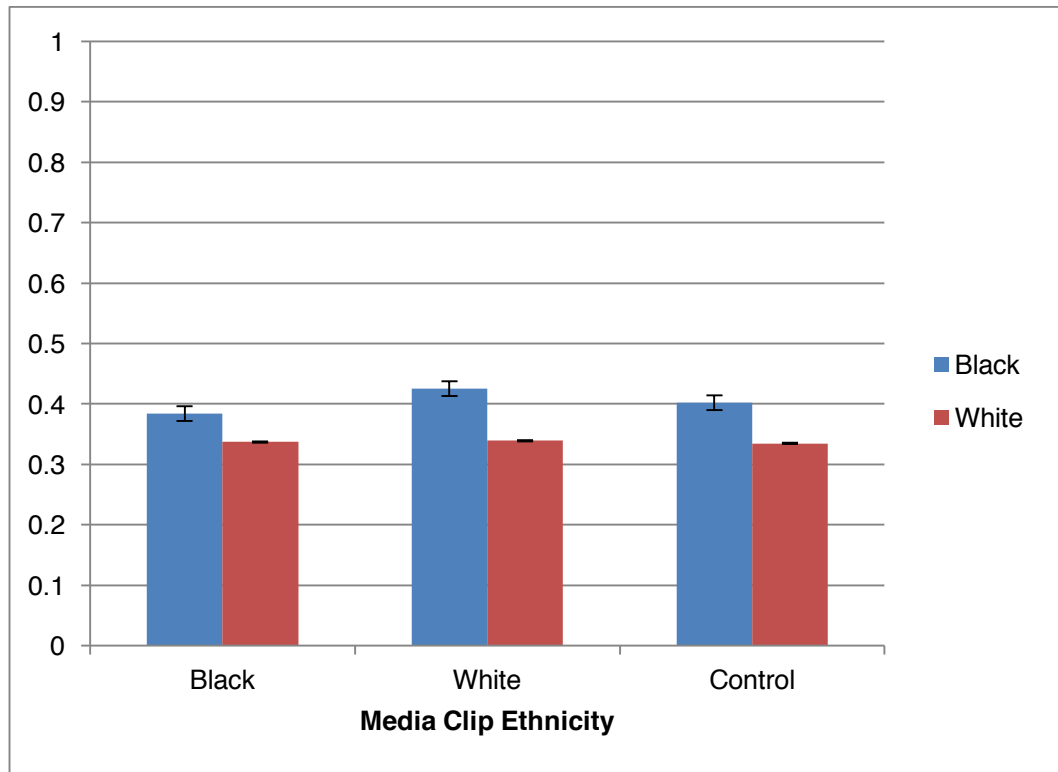


Figure 2 Media Clip Ethnicity

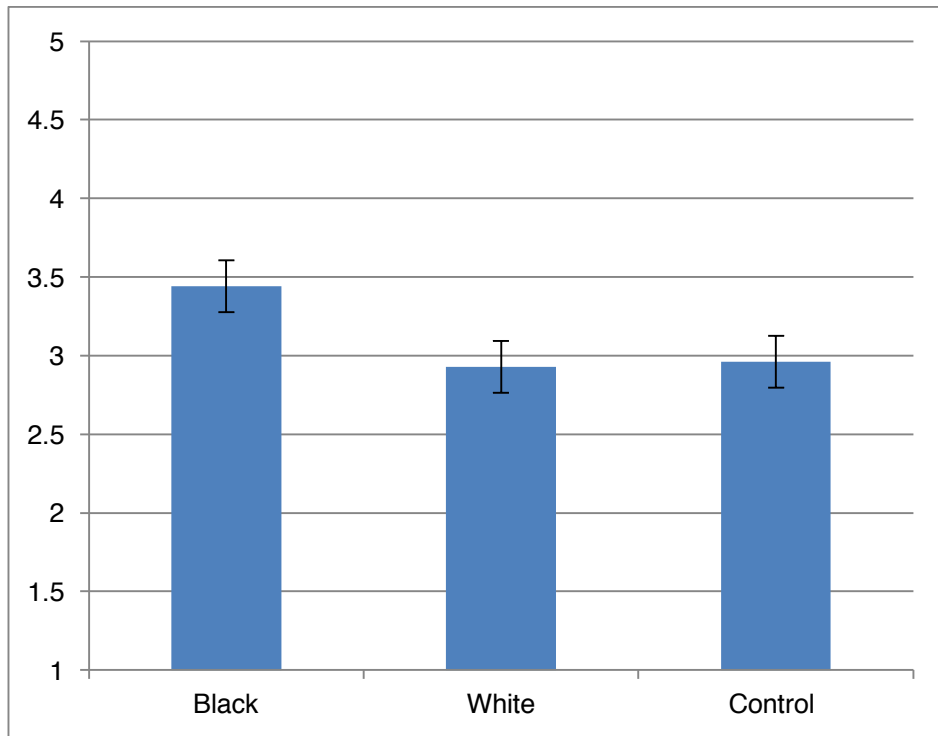


Figure 3 Media Clip Rating

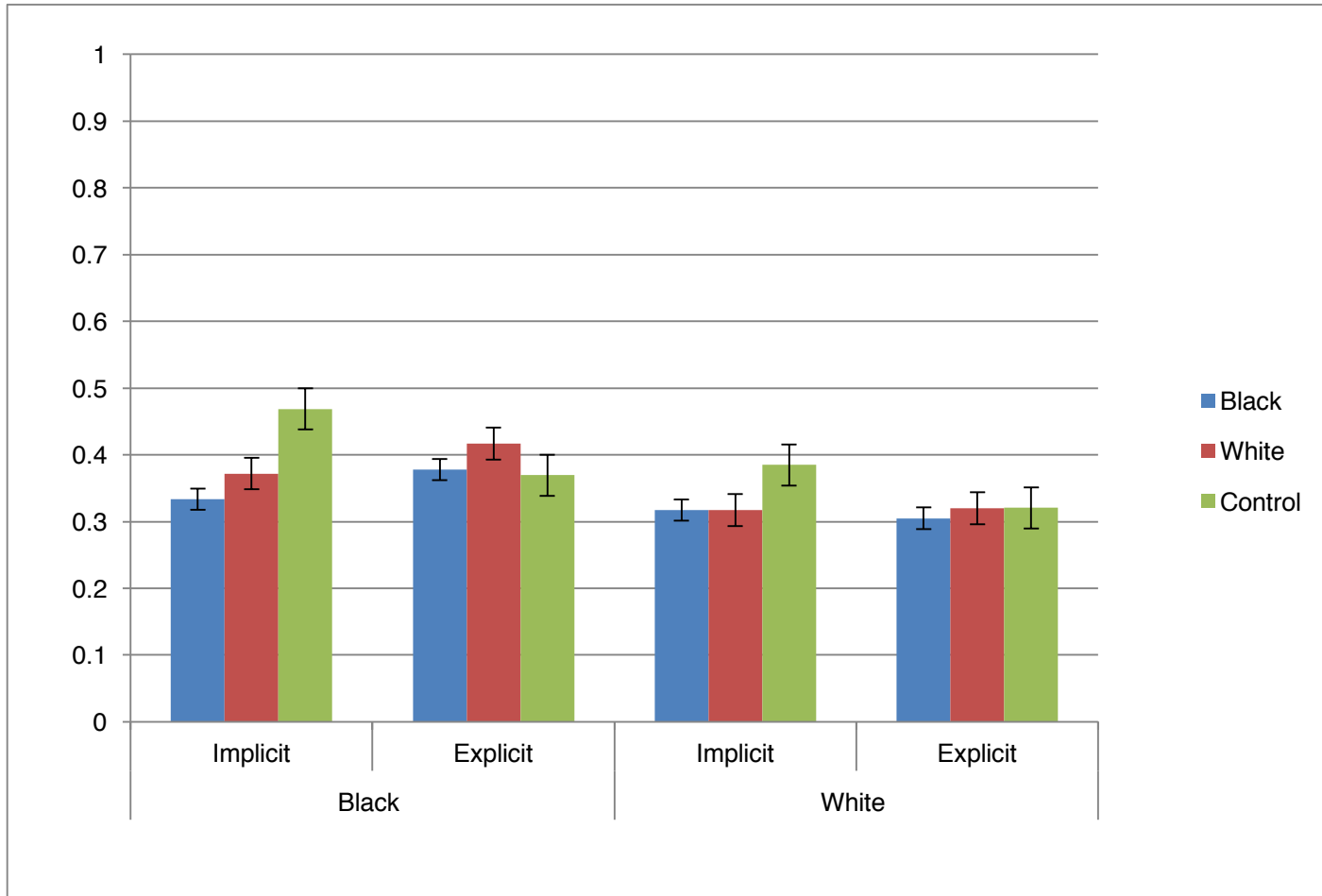


Figure 4 False Identification Rates for Ethnicity

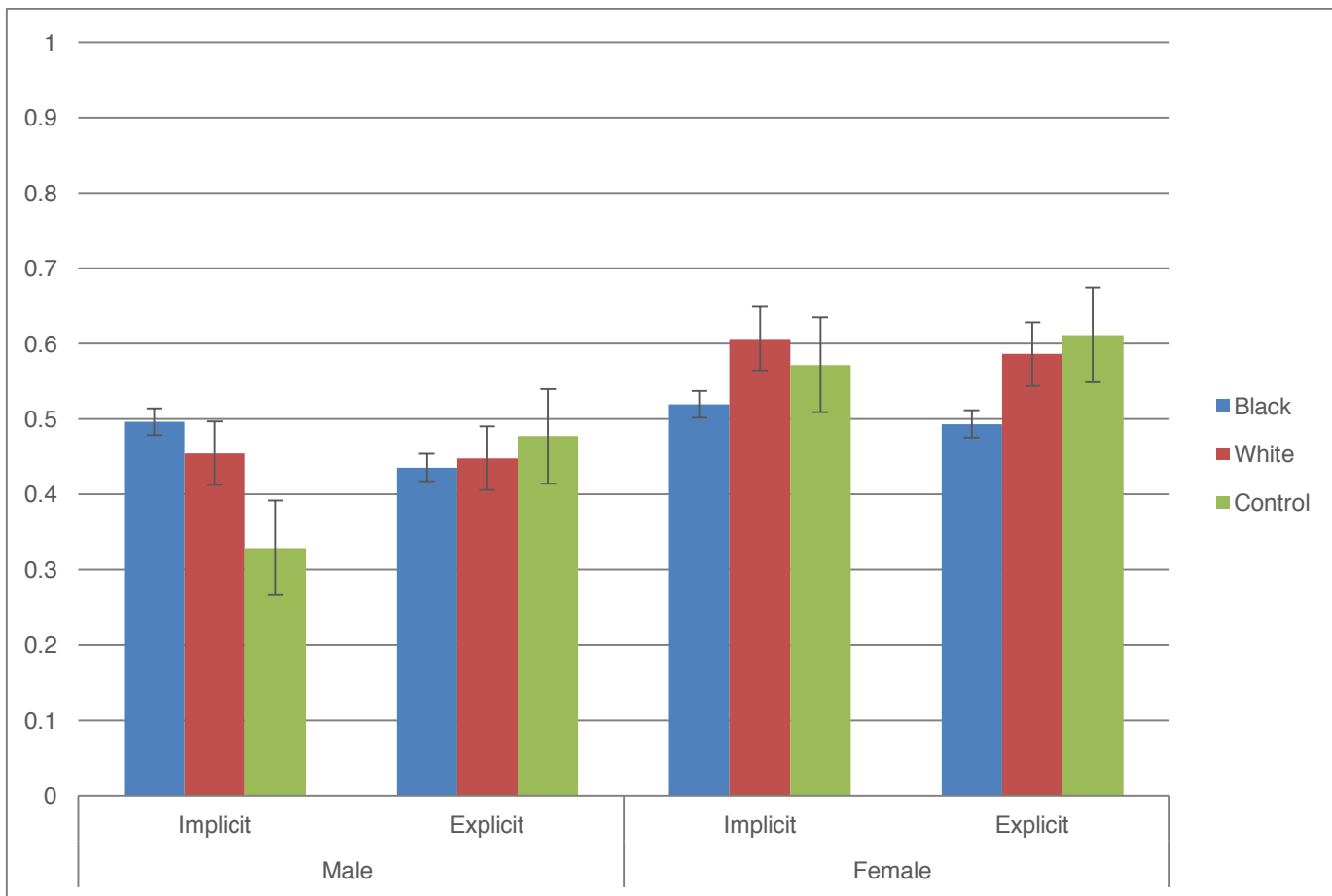


Figure 5 False Identification Rates for Gender

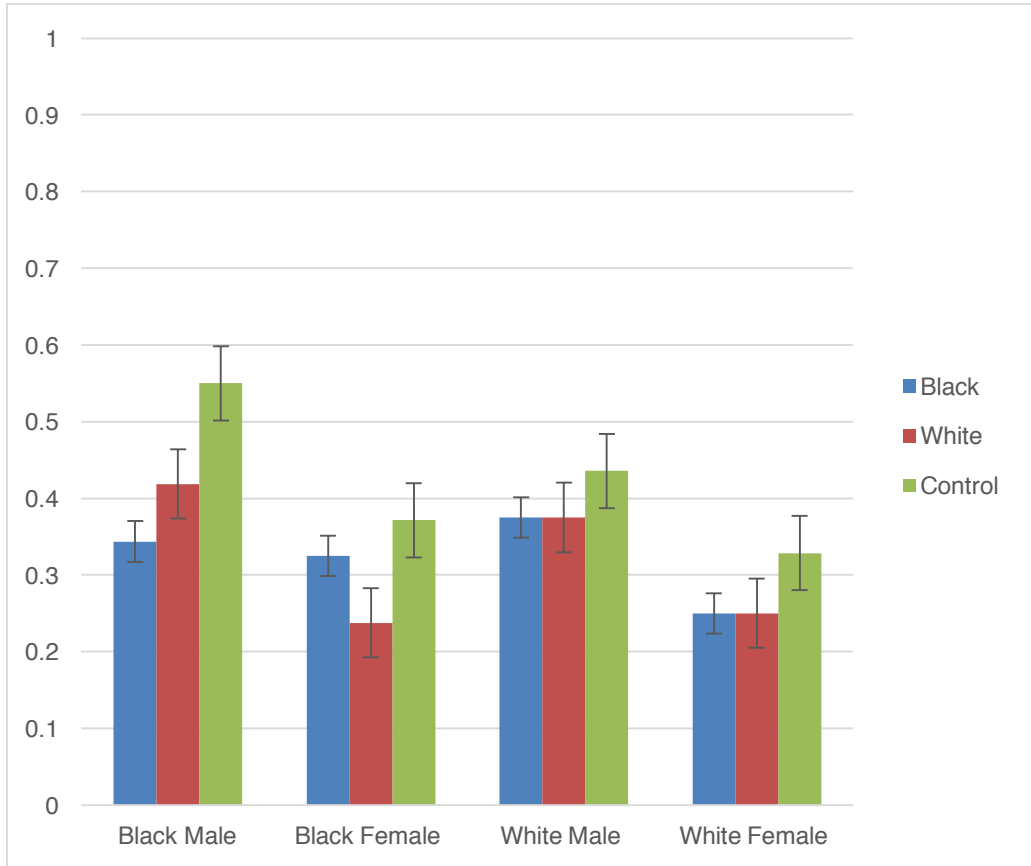


Figure 6 False Identification Rates on Gender and Ethnicity, Implicit Only

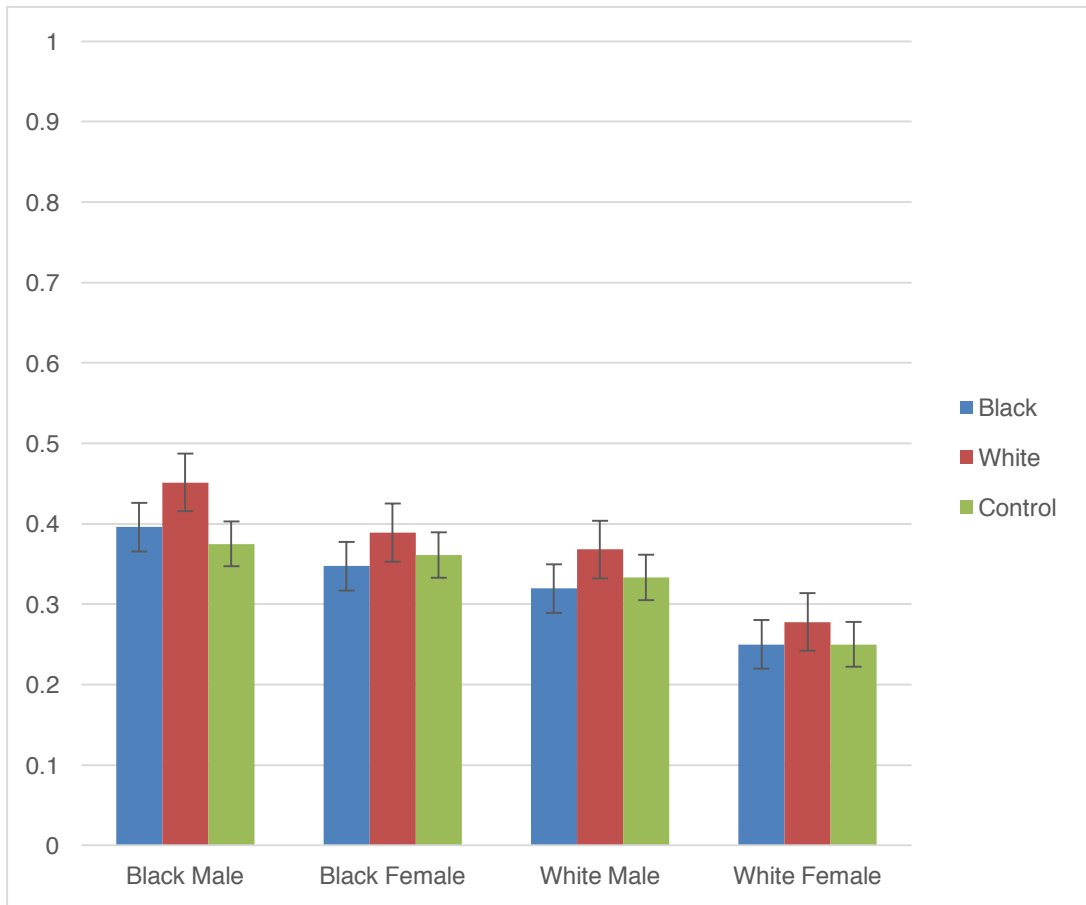


Figure 7 False Identification Rates on Gender and Ethnicity, Explicit Only



Table 1 Mean False Identification Rates Based on Ethnicity

Media Clip Ethnicity	Black						White					
	Implicit		Explicit		Total		Implicit		Explicit		Total	
	n	M (SD)	n	M (SD)	n	M (SD)	n	M (SD)	n	M (SD)	n	M (SD)
Black	41	0.33 (.26)	41	0.38 (.32)	82	.36 (.29)	41	0.32 (.31)	41	0.30 (.30)	82	0.31 (.30)
White	41	0.37 (.32)	37	0.42 (.31)	78	.39 (.32)	41	0.32 (.29)	37	0.32 (.29)	78	0.32 (.29)
Control	37	0.47 (.31)	39	0.37 (.28)	76	.42 (.29)	37	0.39 (.30)	39	0.32 (.30)	76	0.35 (.29)

Table 2 False Identification Rates Based on Gender

Media Clip Ethnicity	Male						Female					
	Implicit		Explicit		Total		Implicit		Explicit		Total	
	n	M (SD)	n	M (SD)	n	M (SD)	n	M (SD)	n	M (SD)	n	M (SD)
Black	39	.49 (.35)	36	.44 (.39)	75	.46 (.37)	39	0.52 (.27)	36	0.49 (.43)	75	.51 (.35)
White	40	.45 (.33)	35	.45 (.40)	75	.45 (.36)	40	0.60 (.29)	35	.58 (.31)	75	.59 (.29)
Control	35	.33 (.39)	36	.48 (.39)	71	.40 (.39)	35	0.57 (.38)	36	.61 (.28)	71	.59 (.33)

Table 3 False Identification Rates with Gender and Ethnicity

Media Clip Ethnicity	Black Male						Black Female					
	Implicit		Explicit		Total		Implicit		Explicit		Total	
	n	M (SD)	n	M (SD)	n	M (SD)	n	M (SD)	n	M (SD)	n	M (SD)
Black	40	.34 (.27)	36	.39 (.37)	76	.37 (.32)	40	.33 (.38)	36	.34 (.39)	76	.34 (.39)
White	40	.42 (.36)	36	.45 (.33)	76	.43 (.34)	40	.24 (.29)	36	.39 (.42)	76	.31 (.36)
Control	35	.55 (.36)	36	.38 (.36)	71	.46 (.37)	35	.37 (.39)	36	.36 (.37)	71	.37 (.38)
	White Male						White Female					
	Implicit		Explicit		Total		Implicit		Explicit		Total	
	n	M (SD)	n	M (SD)	n	M (SD)	n	M (SD)	n	M (SD)	n	M (SD)
Black	40	.38 (.36)	36	.32 (.38)	76	.35 (.37)	40	.25 (.32)	36	.25 (.33)	76	.25 (.32)
White	40	.38 (.38)	36	.37 (.37)	76	.37 (.37)	40	.25 (.34)	36	.28 (.38)	76	.26 (.36)
Control	35	.44 (.36)	36	.33 (.35)	71	.38 (.36)	35	.33 (.38)	36	.25 (.35)	71	.29 (.37)

Table 4 Mean IAT Score per Condition

	IAT	
	n	M (SD)
Black	79	.37 (.42)
White	77	.36 (.47)
Control	75	.33 (.48)
Implicit	116	.31 (.48)
Explicit	115	.39 (.43)

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