Cross-Race Effect of African-Americans and Caucasians

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CROSS-RACE EFFECT OF AFRICAN-AMERICANS AND CAUCASIANS

by

BIANCA VIDAL

A dissertation submitted to the Graduate Faculty in Psychology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

2018
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This manuscript has been read and accepted for the Graduate Faculty in Psychology in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

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ABSTRACT

Cross-Race Effect of African-Americans and Caucasians

by

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Studies have shown that eyewitnesses are less accurate when the accused and foils (i.e., non-suspects in a lineup) are of a different race from the eyewitness than when of the same race. This has been termed the Cross-Race Effect (CRE). To study the CRE in eyewitness identifications, this experiment used a 4x2x2 between-subjects design with 492 participants. Participants watched a film act in which an African-American (AA) or Caucasian (C) either stole or recovered a cell phone. Afterwards they had to identify the person as well as answer a series of questions. There were 4 perpetrators for each race (4 C & 4 AA; 1 perp per video), 2 races of the witnesses (C & AA) by 2 framings of the film (moral transgression/stole or prosocial moral act/found). The purpose of the framings was to see if the moral relevance of the action, stealing versus a mildly prosocial act (recovering a client’s cell phone) affects the criterion applied by the witness and whether this interacts with the race of the eyewitness and those in the films. Signal detection analysis (SDA) was used to calculate identification accuracy. For the measure of decisional criteria, a significant main effect for race of participant was obtained. Caucasian participants committed fewer false positives than African-American participants. A significant interaction was also found between race of participant and race of actor. When the actor was Caucasian, African-American participants committed more false positives than did Caucasian participants. A three-way ANOVA on sensitivity/accuracy (d’) with race of the perpetrator, race of participant and framing of the act as factors, showed a significant main effect for race of
actor. There was increased discriminability between perpetrator and foil when the actor was African-American than when the actor was Caucasian. There was also an interaction between race of participant and race of actor. When Caucasian participants viewed the film with an African-American actor they were better able to discriminate between perpetrator and foil than when the actor was Caucasian. However, African-American participants performed the same regardless of whether the actor was Caucasian or African-American. In addition, an interaction between race of actor and framing of the film. When the framing of the film was “found”, there was a significant difference seen, when the actor was African-American, the “eyewitnesses” discriminated better between perpetrator and foil than when the actor was Caucasian. However, when the framing of the film was “stole” there was no difference between the African-American actor and the Caucasian actor.

A partial data set (n = 378) which excluded the least similar Caucasian and African actor was also analyzed. In this analysis, a significant main effect for race of participant was obtained. The Caucasian participants committed fewer false positives than did the African-American participants. When looking at sensitivity, a significant main effect was found for race of actor. There was greater discriminability between perpetrator and foils when the actor was African-American than when the actor was Caucasian. In addition, a significant interaction was found between race of actor and framing of the act. When the actor was African-American, participants were able to better discriminate between perpetrator and foil than when the actor was Caucasian. However, when the framing of the film was “stole”, there was no difference between the African-American actor and the Caucasian actor. Thus, the difference ‘disappears’ when the act was described as a transgression. No other main effect or interaction was found. Studying the
Cross-Race Effect under different framings of the act should help us tease out what may be attributed to different degrees of contact and the use of different criteria for guilt.
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TABLE OF CONTENTS

ABSTRACT .............................................................................................................................. iv

ACKNOWLEDGMENTS ........................................................................................................... v

LIST OF TABLES ................................................................................................................... vii

LIST OF FIGURES ................................................................................................................ ix

INTRODUCTION .................................................................................................................. 1

EXPLANATIONS FOR CROSS-RACE EFFECT ..................................................................... 3

CONTACT/EXPERIENTIAL HYPOTHESIS ........................................................................ 3

FRAMING EFFECTS OF EYEWITNESS IDENTIFICATION .............................................. 7

PURPOSE OF THE STUDY .................................................................................................... 8

RESEARCH QUESTIONS AND HYPOTHESIS .................................................................. 9

METHOD ............................................................................................................................... 10

PARTICIPANTS .................................................................................................................... 10

DESIGN AND DATA ANALYSIS ....................................................................................... 11

PROCEDURE AND MATERIALS ......................................................................................... 12

FACE RECOGNITION TASK .............................................................................................. 13

QUESTIONNAIRE ................................................................................................................ 14

RESULTS ................................................................................................................................ 14

ANALYSIS OF C3 ACROSS GROUPS (FULL DATA SET) .................................................. 15

ANALYSIS OF C3 ACROSS GROUPS (PARTIAL DATA SET) ............................................ 18

ANALYSIS OF d’ ACROSS GROUPS (FULL DATA SET) ..................................................... 19

ANALYSIS OF d’ ACROSS GROUPS (PARTIAL DATA SET) .............................................. 23

POST-IDENTIFICATION CONFIDENCE LEVELS ............................................................... 25

CONTACT MEASURES - BEST FRIENDS ........................................................................... 26
CONTACT MEASURES - "HANGING OUT" ................................................................. 28
CONTACT MEASURES - WORK PLACE CLOSENESS ............................................ 29
BELIEFS ABOUT FALSE POSITIVES AND FALSE NEGATIVE ERRORS ............ 29
TASK DIFFICULTY ............................................................................................... 30
DISCUSSION .......................................................................................................... 31
DECISIONAL CRITERIA AND SENSITIVITY ...................................................... 31
FRAMING ............................................................................................................... 33
CONTACT FINDINGS ............................................................................................ 33
LIMITATIONS ........................................................................................................ 35
FUTURE RESEARCH ............................................................................................ 36
APPENDIX A: FACE RECOGNITION TASK ........................................................ 38
APPENDIX B: QUESTIONNAIRE .......................................................................... 39
APPENDIX C: LINEUP PHOTOGRAPHS .............................................................. 43
APPENDIX D: FIGURE 5 ...................................................................................... 49
REFERENCES ....................................................................................................... 50
LIST OF TABLES

Table 1. Three-Way ANOVA for Decisional Criteria - Full Data Set ……………………16
Table 2. Means for interaction of race of participant and race of actor using c3 as the Dependent Variable – Full Data Set………………………………………………………………………………..17
Table 3. Three-Way ANOVA for decisional criteria – partial data set………………………….18
Table 4. Descriptive statistics for race of participant using c3 as the Dependent Variable for the partial data set…………………………………………………………………………………….19
Table 5. Three-Way ANOVA for Accuracy/Sensitivity (d’) – full data set………………20
Table 6. Means for race of actor using d’ as the Dependent Variable – Full data set…………20
Table 7. Means for interaction between race of actor and race of participant using d’ as the Dependent Variable – Full data set…………………………………………………………………………………….21
Table 8. Means for interaction between race of actor and framing using d’ as the Dependent Variable – Full data set…………………………………………………………………………………….21
Table 9. Means for race of actor using d’ as the dependent variable – partial data set……….23
Table 10. Three-Way ANOVA for Accuracy/Sensitivity (d’) – partial data set…………………24
Table 11. Means for interaction between race of actors and framing with d’ as the dependent variable – partial data set………………………………………………………………………………………….24
Table 12. Post-identification Confidence Levels……………………………………………………26
Table 13. Total Number of Best Friends by Race/Ethnicity ……………………………………27
Table 14. Means for Same Race and Cross-Race Friends with c3 as the Dependent Variable…27
Table 15. Independent t test for Same Race and Cross-Race Friends with c3 as the Dependent Variable……………………………………………………………………………………………27
Table 16. Means for Same Race and Cross-Race Friends with d’ as the Dependent Variable…28
Table 17. Independent t test for Same Race and Cross-Race Friends with d’ as the Dependent
Variable………………………………………………………………………………………………………28
Table 18. Measure of “hanging out” with members of another race……………………………………29
Table 19. Workplace Closeness of participants with members of another race…………………..29
Table 20. Participants beliefs about False Positive and False negative errors based on
framing……………………………………………………………………………………………………….30
Table 21. Participants beliefs about False Positive and False negative errors based on participants
race………………………………………………………………………………………………………………30
Table 22. Task difficulty of facial recognition……………………………………………………………31
LIST OF FIGURES

Figure 1. Significant Interaction between Race of Actor and Race of Participant in Full Data Set Using c3 as Dependent Variable.................................................................17

Figure 2. Significant Interaction Between Race of Actor and Race of Participant in Full Data Set using d’ as Dependent Variable.. .................................................................22

Figure 3. Significant Interaction Between Race of Actor and Framing in Full Data Set Using d’ as Dependent Variable.................................................................22

Figure 4. Significant Interaction Between Race of Actor and Framing in Partial Data Set Using d’ as the Dependent Variable……………………………………………………...25

Figure 5. Interaction Between Race of Participant and Same Race vs Cross-Race in Full Data Set Using c3 as Dependent Variable.................................................................49
INTRODUCTION

The criminal justice system in the U.S. frequently requires eyewitnesses to make an identification from a lineup after having witnessed a crime. These identifications are typically used as primary evidence against the alleged culprit. Past research has shown that there are many factors that can influence the accuracy of eyewitness identifications such as the presence of a weapon (Pickle 2007), exposure time (Memon, Hope, & Bull, 2003), instructions (Kohnken & Mass, 1988), type of lineup (Ebbesen & Flowe, 2002) and even the race of the perpetrator and of the eyewitness (Wright, Boyd, & Tredoux, 2003). Previous studies (e.g. Hourihan, Benjamin, & Liu, 2012; Meissner & Brighman, 2001) have shown that eyewitnesses are less accurate when the accused and foils (i.e., non-suspects in a lineup) are of a different race from the eyewitness than when of the same race. This has been termed the Cross-Race Effect (CRE). This means that witnesses tend to have a better recognition for same-race (SR) faces than for cross-race (CR) faces.

Researchers have conducted numerous experimental studies on cross-race eyewitness identification performance. In these experiments, crimes are simulated in a variety of ways. Typically, they are divided into two parts. First, participants watch an event on video or staged. Some studies next ask participants first to draw a sketch of the suspect or to write down his physical characteristics. Most of these experiments introduce a filler task between the “crime” they witnessed and the eyewitness judgments. Next, they are presented with an array of unfamiliar faces. Depending upon the research, the array of unfamiliar faces may be presented simultaneously or sequentially. This is the recognition task. They must try to recognize the person who committed the “crime”.

When the race of the witness and the race of target (the perpetrator of the crime) are systematically varied to match or mismatch, the research reveals a robust and consistent cross-racial identification effect that is, cross-race identification is less accurate than same-race identification. This differential recognition ability has been well documented. A meta-analysis of 128 facial identification experiments by Shapiro and Penrod (1986) based on 7 separate tests of the Cross-Race Effect for Whites, Blacks, and Asians on face recognition found a higher rate of correct identification in own-race, with fewer false positives, than with the cross-race identifications. Bothwell, Brigham, and Malpass (1989) meta-analyzed 14 studies, using combinations of Black and White participants and targets, and found strong own-race bias equivalent in magnitude for Blacks and Whites. However, in a meta-analysis of 22 separate tests, Anthony, Cooper and Mullen (1992) found an own-race bias to be slightly stronger for Whites than Blacks. Ayuk (1990), including Black and White participants and faces, found both groups to be significantly more accurate with own than other-race stimuli, with the cross-race effect being stronger for White eyewitnesses. Lindsay, Jack and Christian (1991) found White participants performed notably better on White targets compared to Black targets, but no such difference was found for Blacks, who performed equally well with both Black and White targets.

While most cross-race eyewitness studies have involved White and Black participants and targets, other races and ethnicities show the same own-race bias in recognition. Platz (1988) demonstrated the same own-race bias in Mexican-Americans, Blacks and Whites. The cross-race effect has also been produced for Asian faces identified by White participants. Hourihan, Benjamin and Liu (2012) found that after completing the lineup, White participants showed a superior recognition of White faces in relation to Asian faces and Asian participants showed superior recognition of Asian faces relative to White faces.
Meissner and Brigham (2001) conducted a meta-analysis of thirty years of research on the CRE. Their findings showed that eyewitnesses are fifty-six percent more likely to falsely identify when the perpetrator is of another race, compared to identifying someone of the same race. Therefore, the chances of an innocent suspect being misidentified may be considerably greater if an eyewitness is from another race than the same race as the witness. Indeed, since eyewitness misidentification is the greatest cause of wrongful convictions in the U.S. (Eyewitness Misidentification, n.d.), this poses a serious challenge to the fairness of the criminal justice system. The Innocence Project has found that eyewitness misidentification played a role in 75% of convictions that were overturned through DNA testing. CRE is particularly troubling because members of racial out-groups may potentially be at a greater disadvantage and may be wrongly convicted at a higher rate. Brewer, Weber, and Semmler (2005) have argued that a positive identification typically will make the prosecution’s case more persuasive for the jury, which then increases the likelihood of the accused being convicted.

In summary, since the criminal justice system is so reliant on eyewitness testimony, it is important to better understand CRE in order to learn how to possibly reduce it. This study is based on the research on the Cross-Race Effect and explanations as to why it occurs, but employs a somewhat different experimental paradigm, which I believe will help interpret it.

**Explanations for Cross-Race Effect**

Different factors have been studied to help explain why the CRE phenomenon occurs. There have been many different explanations offered and this paper concentrates on the one most relevant to the current study, Contact hypothesis. This refers to the level of contact with other races. What follows is a more in-depth explanation of this hypothesis.

**Contact/Experiential Hypothesis**

3
One explanation for the Cross-Race Effect suggests that it is the low level of contact with other races/ethnicities that is a major cause for the CRE. That is, the more contact one has with other races, the more capable someone is of correctly identifying a person of another race/ethnicity. Therefore, the less contact a witness has with another race, the more prone they are to commit an error when judging someone of that race. Own race perceptual bias is thus seen as the result of experience/expertise obtained through contact, whereas other-race recognition is more novel, and this explains why more errors occur when identifying a person of another race. Therefore, some have argued that increased contact with other races/ethnicities would increase memory accuracy and reduce the CRE. This explanation is based on the general principle that contact increases familiarity with faces in general. From this view, one might conclude that contact may influence the individual’s motivation to recognize other-race faces and interracial contact might reduce the likelihood of stereotypic responses.

Chiroro and Valentine (1995), in a cross-cultural geographic manipulation designed to test the contact hypothesis, compared Black Africans with either high or low/no contact with Whites to White Britons with the same diverse degree of contact. The findings showed the same Cross-Race Effect for both Blacks and Whites. However, they also found that contact was a significant factor in recognition and that increased contact (especially in Black eyewitnesses) significantly reduced the CRE effect size.

In a study conducted by Li, Dunning and Malpass (1998), White basketball fans were superior to White basketball novices in recognizing Black faces. Participants were told they would be tested on their ability to recognize the faces viewed (Black and White) and were provided with questionnaires concerning their general level of contact with the other ethnic group, and about the quality and quantity of those contacts. The researchers’ assumption was that
basketball fans needed to differentiate players in order to understand the game. Since basketball has mostly African-American players, recognition of Black faces would serve the purpose. Results showed that participants who were fans of professional basketball showed a smaller cross-race deficit than those who were not fans. In this study, the contact the participants had was not of a personal kind (such as a friend), but rather as an observer/fan of a sport that has a high number of African-American athletes.

Sangrigoli, Pallier, Argenti, Ventureyra and de Schonen (2005) also found that extensive experience with CR faces can reverse the direction in CRE. The participants in their study were Koreans who were adopted as young children by Caucasian families in Europe. The adoptees performed a face recognition task as adults with photographs of Caucasian and Asian faces. Their performance was not different from a control group of French participants. That is, they were able to identify the Caucasian faces better than the Asian ones despite their Korean heritage. The Korean participants had little or no contact with other Koreans, which is what may have led them to perform better in recalling Caucasian faces. In contrast, a control group of non-adopted Koreans showed the reverse pattern. The non-adopted Koreans were better in identifying the Asian faces than the Caucasian faces. Thus, this study revealed a reversal of the CRE in the adoptees as a function of differential contact.

A major problem with the contact hypothesis seems to be the inconsistent empirical support it has received in the past. For example, Brigham and Barkowitz, (1978) found that both black and white participants were significantly more accurate when identifying photographs of people of their own race than photographs of another race. However, racial attitudes or reported amount of interracial contact was not related to their ability to recognize the photographs. A similar finding was reported by two studies conducted by Ng and Lindsay, (1994). In their
studies they used White and Asian faces to test if lack of contact attributes to the CRE. They found that on average only .89% of the variance in facial recognition was accounted by the contact hypothesis and concluded that it was not a viable explanation for the results. Perhaps those findings suggest that only certain kinds of contact will improve cross-race face recognition; but perhaps, contact sometimes increases familiarity but also prejudice, which might cancel out a beneficial effect of the increased contact. Nonetheless, a meta-analysis conducted by Meissner and Brigham (2001) found that contact does appear to play a small, but reliable, role in the other race effect, but accounts for only about 2% of variance. Furthermore, they report that racial attitudes play a mediating role in relation to one’s social experience with other races. That is, individuals with positive attitudes toward other races report more interracial contact than those with negative attitudes. So perhaps only certain kinds of contact would improve cross-race face recognition.

This line of argument is consistent with Allport’s (1954) contact theory, which argued that increased intergroup contact does not necessarily reduce hostility. It may even reinforce negative stereotypes that were previously held. That is, some contact may lead to friendship or a positive outlook on the “others” whereas some contact may have the opposite effect. According to this view, it is the quality of the contact that is important and therefore how we measure this quality of contact is crucial. However, the variety of measurements of contact to date may have led to a failure to support the contact hypothesis. Moreover, many of the measures assessing contact have been self-reports. Perhaps if we were to introduce more valid scales to measure contact quality we would consistently find that contact decreases the CRE. Further, Sporer (2001) concluded that the findings regarding the contact hypothesis are dependent on the operationalization of the construct “contact frequency”. If contact frequency is operationalized in
an objective way, through use of a standardized measure, perhaps then it is more likely to be supported.

Contact is not necessarily the only important consideration in how an eyewitness responds to an identification situation. Indeed, it is also important to consider the meaning of the eyewitness identification task for the eyewitness involved. To the extent that the identification task is perceived as involving a kind of moral judgment, eyewitness responding might vary as a function of morally-relevant parameters of the act, such as whether it was intended or not.

**Framing Effects of Eyewitness Identification**

The basic assumption of this research is that: Eyewitness identification involves more than just remembering the crime and the culprit. It also involves making a kind of moral decision. The reasoning is as follows: Identifying someone as a perpetrator or not can have serious moral consequences for the accused and, therefore, the witness’s understanding of those consequences can affect their identification behavior (Spring, Saltzstein, & Peach 2013; Spring, Saltzstein & Vidal, 2015). The implicit criteria that an eyewitness brings to the task has implications in that misidentifying the perpetrator (perp) as guilty risks (a) sending an innocent person to jail (false positive error), whereas failing to identify a guilty person allows (b) a guilty person to escape punishment (false negative error). The assumption behind this research is that eyewitnesses’ weighting of potential moral consequences (a) and (b) can affect their ability and willingness to identify the culprit and, as a result, the balance of false positives and false negative errors. Of course, we assume, as the word “implicit” implies, that these decisional biases may not be conscious or fully conscious.

For example, in Spring, Saltzstein and Peach (2013), eyewitnesses viewed filmed events in two studies. The event was framed as a moral transgression (stealing) or a pro-social act
(helping) in Study 1 and as an intentional fire with little damage or with major damage in Study 2. In both studies, the framing was found to influence decisional criteria. Similarly, Spring, Saltzstein, and Vidal (2015) first showed eyewitnesses a filmed act of setting a fire that was framed in one of two ways: (a) an unintended act, which resulted in a fire that ruined a restaurant (unintended fire); or (b) an intended act of trying to set a fire that ruined the restaurant (intended fire), by means of different voiceovers. One scenario stressed the unintended nature of the act and the other the bad intentions motivating the act, with both resulting in the same bad outcome. In study two, the same filmed act of setting a fire was again framed in two different ways: as either (a) unintentional wrong doing with a minor consequence (only the wastebasket was damaged) or (b) unintentional wrong doing with a serious consequence (a fire that ruined the restaurant). Both studies found that how the act was described (intended or unintended) influenced eyewitnesses’ false positive and false negative identification rates.

These studies demonstrate that the moral meaning of the act, affects eyewitness performance; not the overall accuracy, as much as the balance of kinds of errors. This framework is the basis for the proposed study here. That is, by framing the eyewitness task as having a moral or non-moral meaning, it is possible to disentangle factors such as familiarity with cross-race faces from the social/moral factors such as the appropriate criterion for guilt. It should be emphasized that these changes in criteria need not be, and probably aren’t, conscious and deliberate ones.

**Purpose of the study**

This study is designed to help differentiate the two kinds of explanations of the cross-race identification between Caucasians and African-Americans, as discussed above. Experimental designs in cross-race are usually divided into two parts. Participants view an event on a video
and sometime later they perform the recognition task. This experiment will follow that procedure. However, in this study, the video in which the witnessed act is presented will be “framed” (described) differently by means of a voice-over (see below). One framing will be as a moral transgression (a crime) and the other as prosocial moral act. Note that the visual information, that is, the depiction of the act itself remains identical while its (moral) meaning is systematically varied. In other words, the visual input remains identical, but the moral meaning is systematically varied. This is unusual in the study of cross-race identification and to my knowledge has not been done before in studies of cross-race identification. Thus, if the same film and photographs are used but the meaning is different, one can argue that subsequent differences in eyewitness identification performance partly reflect the social-moral framing of the event. The method section will have further details about this framing. The impact of framing will be examined in conjunction with a systematic assessment of cross-race contact quality and frequency. This will allow an examination of cross-race contact effects across divergent moral framing contexts.

Research Questions and Hypothesis

This experiment investigates the following questions:

1. Are there any differences between same vs. cross race identification in (a) in decisional criteria or the relative preponderance of false positives to false negatives between same and cross race face identifications and (b) sensitivity or the ability to discriminate a perp from foils? Do these differences depend on how the film was framed: as a crime or a prosocial act.

2. Are there correlations between the participants’ performance in decisional criteria and sensitivity with their answers to the questions about (a) contact with members of other racial groups, and (b) friendship with members of other racial groups.
Hypotheses

Hypothesis 1a. Participants will use a stricter criterion (indicated by lower bias scores) when the film is framed as a crime than when framed as a prosocial act.

Hypothesis 1b. Consistent with previous research on CRE, accuracy (sensitivity) will be higher when the perpetrator or foil is of the same race than when the perpetrator is of a different race. This difference will be independent of the framing of the film.

Hypothesis 1c. There will be a three-way interaction between the framing of the film (as a crime or a prosocial act), the race of the perpetrator and of the foils, and the race of the eyewitness. Specifically, decisional criteria will be lower or laxer (indicating more false positives) when the perpetrator and foils are of a different race/ethnicity from the eyewitness than when they are the same race/ethnicity as the eyewitness, only or primarily when the filmed behavior is described as a crime compared to when it is described as a prosocial act.

Hypothesis 2a. Those who report more frequent contact with other race individuals will have higher sensitivity (accuracy) rates than those who report less frequent contact, independent of the framing of the film/act.

Hypothesis 2b. Those who report (close) friends of other races that match those involved in the study will have higher bias scores (indicating fewer false positives primarily or only in the framing of the film as involving a transgression (stealing).

Method

Participants

Four hundred and ninety-two African-American (AA; n = 248) and Caucasian (C; n = 244) participants were recruited through Amazon’s Mechanical Turk (M-Turk). M-Turk is a website through which researchers can hire diverse participants to complete human intelligence
tasks. Participants were compensated $2 and were informed that they would be participating in a study to see how people make decisions about events they see, that they would view a short video and answer questions pertaining to the video. For this study, race and ethnicity is based on self-designation. The average age of participants was 35.38 years (SD = 10.48), and the gender breakdown was 54.3% male and 45.7% female.

**Design and Data Analysis**

This study is a 4x2x2 between-subjects design for a total of 16 mock crime videos. There were 4 perpetrators for each race (4 C & 4 AA; 1 perp per video), 2 races of the witnesses (C & AA) by 2 framings of the film (moral transgression/stole or prosocial moral act/found). Framings were created by use of voice-overs. The purpose of the different voice-overs was to manipulate the moral relevance of the action, which was characterized as either stealing a cell phone (stole condition) or the mildly prosocial act of recovering a client’s cell phone (found condition). The dependent variables were eyewitness accuracy/discrimination (d’) and the criterion (c) applied by witnesses to their identification. Signal detection analysis (SDA) was used to generate the dependent variables, described below.

SDA is a mathematical model depicting how decisions are made in the face of ambiguous evidence. The method provides separate indices of a subject’s capacity to discriminate one stimulus from another. Sensitivity is an index of how well the subject can make a correct judgment and avoid an incorrect judgment. Bias is the implicit decisional bias the participant brings to the task, influencing the balance of the two kinds of errors, false positive and false negatives (Green & Swets, 1996). The measure of sensitivity or the ability to discriminate the perpetrator from the foils used is indicated as d’. The higher the d’ score the more the participant is able to discriminate the perpetrator from the foils. A d’ value of 0 represents chance
performance and increasing values of $d'$ indicate increasing discriminability. A $d'$ score of 1 indicates perfect discriminability. The second measure used is termed $Bias (c)$, which reflects one’s decisional criterion. A bias score of 0 indicates no decisional bias. The higher the $c$, the stricter the criterion.

**Procedure and Materials**

There were 16 mock crime videos created each of which lasted approximately 50 seconds. All the actors were recruited and hired via backstage.com. The actors in the film were between 5’10” and 6’ in height, ages 25-29, with no facial hair or piercings and dressed in black pants with a black long sleeve shirt. All the Caucasian actors had short brown hair and light eyes and the African-American actors had short dark brown hair and brown eyes. Unfortunately, one of the actors arrived at the filming with a shaved head. (When he was hired he had had short hair like the other actors but failed to inform me of this change of look. This potential problem is discussed below.)

There was no audible dialogue among the actors in any of the film versions but there was a voice-over describing what was happening. Each participant viewed one version of the video. The scenario depicted three men of the same race working around a table. A fourth man (the perpetrator) of the same race as the foils comes into the room and takes a cellphone that is lying on the table. None of the three men gives much notice to his action. Critically, there were two verbal framings of the action: (1) the person is stealing the cell phone or (2) the person who took the cell phone is retrieving it for a client. Each video contained only 1 perpetrator but there were 8 different perpetrators (4 African-Americans & 4 Caucasians) in total to create stimulus variability. The other actors in each video were of the same race as the perpetrator. The voice-over for the “stolen” framing was: “There are three men working in an office. They are
discussing how to increase sales at their company. A man just walked in. Oh no! That man just stole the phone”. The voice-over for the “found” framing was: “There are three men working in an office. They are discussing how to increase sales at their company. A man just walked in. He just retrieved the phone for a client who lost it.”

Face Recognition Task

After completing informed consent, participants viewed one of the 16 videos online, followed by the face recognition task. The instructions before the face recognition task for the “stole” framing was: “As you saw in the video, someone left a cell phone on the table and a person stole it. You will see some photos of people, one at a time, and I want you to tell me whether that person in the photo was the one who stole the phone”. The instructions for the “found” framing was: “As you saw in the video, a client left a cell phone on the table and it was retrieved by someone. You will see some photos of people, one at a time, and I want you to tell me whether that person in the photo was the one who retrieved the phone”.

In each video there were either 4 African-American or 4 Caucasian actors. In the face recognition task, the photos were presented in a sequential photo-array (photo by photo), with a time reaction period (time to make decision) between pictures of 8 seconds. Each participant saw 5 trials of 15 photos. These included 3 photos of the perpetrator (front, left and right profile) and 12 photos of the foils (each foil had 3 photos; front, left, and right profile) for a total of 75 photos (African-American perpetrator and African-American foils or a Caucasian perpetrator and Caucasian foils). Photos were identical in every trial; the order did not change, and the same individual’s photo never appeared consecutively.

For each photo, participants were asked to choose among four responses: (1) very sure it is not the man in the video; (2) a little bit sure it is not the man in the video; (3) a little bit sure it
is the man in the video; (4) very sure it is the man in the video. These four responses were
needed, in signal detection parameters, to obtain a ROC (receiver operating characteristics) curve
with fewer trials, while having three criterion points better fit a (d’) parameter. ROC plots the hit
rate (HR) against the false alarm rate (FAR) at different degrees of decisional response as
sensitivity stays constant. Each participants’ response was inputted into SPSS and calculated in
terms of signal noise (sn), this corresponds to the positive and negative hits; and noise (n), which
are the false positive and false negative errors. The sum of hits and errors for each participant
was then entered into a signal detection program using an equal-variance normal distribution
model. The sensitivity (d’) measure corresponds to: \( d' = Z(HR) - Z(FAR) \). The z-score of the
false alarm rates (FAR) was subtracted from the z-score of the hit rates (HR). The more able an
individual is to discriminate between perp and foils the larger the d’.

There were three measures of decisional criteria for each participant, which are called c1
(criteria 1), c2 (criteria 2) and c3 (criteria 3). The reason there are three measures of decisional
criteria is because respondents use the four responses scale, as discussed above. The c3 criterion
corresponds to the differences between those who were definitely sure that was the man and
those who were not. The c3 value will be the focus of the analyses because past research in areas
of eyewitness identification has shown more interesting results using this criterion (e.g. Spring,
Saltzstein & Peach, 2013; Spring, Saltzstein & Vidal, 2015). That is, the past research shows that
the results of framing were clearer when ‘very sure it is the man’ was contrasted with the other
three alternatives. In addition, high-confidence judgments appear to be highly accurate, thus we
might expect that factors such as race and framing will have little impact on high confidence
judgments (Wixted and Wells, 2017).

**Questionnaire**
After completing the recognition task, participants answered a short questionnaire (see Appendix A). This questionnaire included questions about their levels of confidence (i.e., how sure they are that they accurately identified the perpetrator) and their decision-making strategy (i.e., what strategy did they use to make their eyewitness identification(s)). It also queried their cross-race contact, asking about frequency of contact with persons of other racial groups (i.e., how often they “hang out” with people of different racial or ethnic backgrounds), their degree of friendship with persons of other ethnic/racial groups (i.e., names of best 3 friends and their races, genders, ages and time span of friendships), and their own racial/ethnic identification (i.e., White/Caucasian, or African American/Black).

**Results**

For the ANOVA analysis, we analyzed the full data set of 492 participants. In addition, after removing four films we analyzed a partial data set of 378 participants (AA; n = 183) and Caucasian (C; n =195), mean age of 35.22 (SD = 10.52). The reason for analyzing the partial data set is because one of the African-American actors looked very different from the others due to his shaved head. Therefore, in the alternative analysis we excluded the two videos in which he appeared, as well as two videos of one of the Caucasian actors to balance the design. The Caucasian actor that was eliminated was the least similar of the Caucasian group, according the PI and her advisor.

**Analysis of Decisional Criteria (c3) Across Groups (Full data set)**

A three-way between-subjects ANOVA was conducted on decisional criteria (c3), with race of actor, race of participant and framing of the act as factors (see Table 1). Results revealed a significant main effect for race of participant, $F(1, 484) = 8.699, p < .05$. The decisional criteria for Caucasian participants ($M = 1.76, SD = 1.36$) were significantly higher than for
African-American participants ($M = 1.43$, $SD = 1.06$). Thus, Caucasian participants committed fewer false positives than African-American participants. A significant interaction was also found between race of participant and race of actor, $F(1, 484) = 4.818$, $p < .05$ (see Table 2).

When the actor was Caucasian, African-American participants committed more false positives ($M = 1.32$, $SD = 1.13$) than did Caucasian participants ($M = 1.89$, $SD = 1.37$). However, when the actor was African-American, there was no difference in performance between African-American participants ($M = 1.53$, $SD = .97$) and Caucasian participants ($M = 1.62$, $SD = 1.34$). (See Figure 1.) No main effect was found for race of actor, $F(1, 484) = .098$, $p > .05$, or framing of the film, $F(1, 484) = .256$, $p > .05$. No other interactions were found.

Table 1

Three-Way ANOVA for Decisional Criteria - Full Data Set

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race of Participant</td>
<td>1</td>
<td>8.699</td>
<td>.003</td>
</tr>
<tr>
<td>Framing</td>
<td>1</td>
<td>.256</td>
<td>.613</td>
</tr>
<tr>
<td>Race of Actor</td>
<td>1</td>
<td>.098</td>
<td>.755</td>
</tr>
<tr>
<td>Race of Participant * Framing</td>
<td>1</td>
<td>.233</td>
<td>.630</td>
</tr>
<tr>
<td>Race of Participant * Race of Actor</td>
<td>1</td>
<td>4.818</td>
<td>.029</td>
</tr>
<tr>
<td>Framing * Race of Actor</td>
<td>1</td>
<td>.092</td>
<td>.762</td>
</tr>
<tr>
<td>Race of Participant * Framing * Race of Actor</td>
<td>1</td>
<td>.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Error</td>
<td>484</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>492</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2

*Means for Interaction of Race of Participant and Race of Actor using c3 as the Dependent Variable – Full Data Set*

<table>
<thead>
<tr>
<th>Race of Participant</th>
<th>Race of Actor</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>African-American</td>
<td>1.62</td>
<td>1.34</td>
<td>118</td>
</tr>
<tr>
<td>Caucasian</td>
<td>Caucasian</td>
<td>1.89</td>
<td>1.37</td>
<td>126</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1.76</td>
<td>1.36</td>
<td>244</td>
</tr>
<tr>
<td>African-American</td>
<td>African-American</td>
<td>1.53</td>
<td>.97</td>
<td>130</td>
</tr>
<tr>
<td>Caucasian</td>
<td></td>
<td>1.32</td>
<td>1.13</td>
<td>118</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1.43</td>
<td>1.06</td>
<td>248</td>
</tr>
<tr>
<td>Total</td>
<td>African-American</td>
<td>1.57</td>
<td>1.16</td>
<td>248</td>
</tr>
<tr>
<td></td>
<td>Caucasian</td>
<td>1.61</td>
<td>1.29</td>
<td>244</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1.59</td>
<td>1.23</td>
<td>492</td>
</tr>
</tbody>
</table>

*Figure 1.* Significant Interaction Between Race of Actor and Race of Participant in Full Data Set Using c3 as Dependent Variable. An additional figure can be found in appendix.
Analysis of Decisional Criteria (c3) across groups (excluding 4 videos)

The three-way between-subjects ANOVA was repeated on c3 data for participants who viewed a subset of the videos, excluding one African-American actor and one Caucasian actor for a total of four videos (see Table 3). The reason for the exclusion was because they were the most dissimilar actors from the rest of the group, as discussed above. Nevertheless, there was again a significant main effect for race of participant, $F(1, 370) = 10.421, p < .05$ (see Table 4). The decisional criteria for Caucasian participants ($M = 1.83, SD = 1.40$) were significantly different from the African-American participants ($M = 1.42, SD = 1.03$). That is, Caucasian participants committed fewer false positives than did African-American participants. This shows the same finding from the full data set. However, no other main effect or interaction was found.

Table 3

*Three-Way ANOVA for Decisional Criteria – Partial Data Set*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race of Participant</td>
<td>1</td>
<td>10.421</td>
<td>.001</td>
</tr>
<tr>
<td>Framing</td>
<td>1</td>
<td>.000</td>
<td>.998</td>
</tr>
<tr>
<td>Race of Actor</td>
<td>1</td>
<td>.689</td>
<td>.407</td>
</tr>
<tr>
<td>Race of Participant * Framing</td>
<td>1</td>
<td>.024</td>
<td>.877</td>
</tr>
<tr>
<td>Race of Participant * Race of Actor</td>
<td>1</td>
<td>.380</td>
<td>.538</td>
</tr>
<tr>
<td>Framing * Race of Actor</td>
<td>1</td>
<td>.057</td>
<td>.812</td>
</tr>
<tr>
<td>Race of Participant * Framing * Race of Actor</td>
<td>1</td>
<td>.000</td>
<td>.992</td>
</tr>
<tr>
<td>Error</td>
<td>370</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>378</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4

Descriptive Statistics for Race of Participant Using c3 as the Dependent Variable for the Partial Data Set

<table>
<thead>
<tr>
<th>Race of Participant</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>1.83</td>
<td>1.40</td>
<td>183</td>
</tr>
<tr>
<td>African-American</td>
<td>1.42</td>
<td>1.03</td>
<td>195</td>
</tr>
</tbody>
</table>

Analysis of Sensitivity/Accuracy (d’) Across Groups (Full data set)

As explained above, a measure of sensitivity/accuracy (d’) was also calculated for each participant. A three-way ANOVA on sensitivity/accuracy, with race of actor, race of participant and framing of the act as factors, showed a significant main effect for race of actor, $F(1, 484) = 8.742, p < .05$ (see Table 5). The sensitivity measure (accuracy) for Caucasian actors ($M = .88$, $SD = 2.20$) was significantly lower than for the African-American actors ($M = 1.44$, $SD = 2.10$). Thus, there was increased discriminability between perp and foil when the actor was African-American than when the actor was Caucasian (see Table 6). There was no significant main effect found for race of participant, $F(1, 484) = .002, p > .05$ or for the framing of the film, $F(1, 484) = .704, p > .05$. However, two significant interactions were found. There was an interaction between race of participant and race of actor, $F(1, 484) = 6.037, p < .05$ (see Table 7). When Caucasian participants viewed the film with an African-American actor ($M = 1.67$, $SD = 2.20$) they were better able to discriminate between perp and foil than when the actor was Caucasian ($M = .64$, $SD = 2.37$). However, African-American participants performed the same regardless of whether the actor was Caucasian ($M = 1.13$, $SD = 1.99$) or African-American ($M = 1.24$, $SD = 2.00$). (See Figure 2.) There was also an interaction between race of actor and framing of the film, $F(1, 484) = 4.749, p < .05$ (see Table 8). When the framing of the film was “found” there
was a significant race of actor effect. When the actor was African-American ($M = 1.57$, $SD = 2.07$), the eyewitnesses discriminated better between *perp* and *foil* than when the actor was Caucasian ($M = .59$, $SD = 2.12$). However, when the framing of the film was “stole,” there was no difference in discrimination between the African-American actor ($M = 1.34$, $SD = 2.14$) and the Caucasian actor ($M = 1.19$, $SD = 2.26$). (See Figure 3.)

Table 5

*Three-Way ANOVA for Accuracy/Sensitivity (*d’*) – Full Data Set*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Framing</td>
<td>1</td>
<td>.704</td>
<td>.402</td>
</tr>
<tr>
<td>Race of Actor</td>
<td>1</td>
<td>8.742</td>
<td>.003</td>
</tr>
<tr>
<td>Race of Participant</td>
<td>1</td>
<td>.002</td>
<td>.961</td>
</tr>
<tr>
<td>Framing * Race of Actor</td>
<td>1</td>
<td>4.749</td>
<td>.030</td>
</tr>
<tr>
<td>Framing* Race of Participant</td>
<td>1</td>
<td>.556</td>
<td>.456</td>
</tr>
<tr>
<td>Race of Actor * Race of Participant</td>
<td>1</td>
<td>6.037</td>
<td>.014</td>
</tr>
<tr>
<td>Framing* Race of Actor * Race of Participant</td>
<td>1</td>
<td>.360</td>
<td>.549</td>
</tr>
<tr>
<td>Error</td>
<td>484</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>492</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6

*Means for Race of Actor Using *d’* as the Dependent Variable – Full Data Set*

<table>
<thead>
<tr>
<th>Race of Actors in video</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>African-American</td>
<td>1.44</td>
<td>2.10</td>
<td>248</td>
</tr>
<tr>
<td>Caucasian</td>
<td>.88</td>
<td>2.20</td>
<td>244</td>
</tr>
<tr>
<td>Total</td>
<td>1.16</td>
<td>2.17</td>
<td>492</td>
</tr>
</tbody>
</table>
Table 7  
*Means for Interaction Between Race of Actor and Race of Participant Using d’ as the Dependent Variable – Full Data Set*

<table>
<thead>
<tr>
<th>Race of Actors in video</th>
<th>Race of Participant</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>African-American</td>
<td>Caucasian</td>
<td>1.67</td>
<td>2.20</td>
<td>118</td>
</tr>
<tr>
<td></td>
<td>African-American</td>
<td>1.24</td>
<td>2.00</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1.44</td>
<td>2.10</td>
<td>248</td>
</tr>
<tr>
<td>Caucasian</td>
<td>Caucasian</td>
<td>.64</td>
<td>2.37</td>
<td>126</td>
</tr>
<tr>
<td></td>
<td>African-American</td>
<td>1.13</td>
<td>1.99</td>
<td>118</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>.88</td>
<td>2.21</td>
<td>244</td>
</tr>
<tr>
<td>Total</td>
<td>Caucasian</td>
<td>1.14</td>
<td>2.34</td>
<td>244</td>
</tr>
<tr>
<td></td>
<td>African-American</td>
<td>1.19</td>
<td>1.99</td>
<td>248</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1.16</td>
<td>2.17</td>
<td>492</td>
</tr>
</tbody>
</table>

Table 8  
*Means for Interaction Between Race of Actor and Framing Using d’ as the Dependent Variable – Full Data Set*

<table>
<thead>
<tr>
<th>Race of Actors</th>
<th>Framing</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>Stole</td>
<td>1.34</td>
<td>2.14</td>
<td>135</td>
</tr>
<tr>
<td></td>
<td>Found</td>
<td>1.57</td>
<td>2.07</td>
<td>113</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1.44</td>
<td>2.10</td>
<td>248</td>
</tr>
<tr>
<td>Caucasian</td>
<td>Stole</td>
<td>1.19</td>
<td>2.26</td>
<td>118</td>
</tr>
<tr>
<td></td>
<td>Found</td>
<td>.59</td>
<td>2.12</td>
<td>126</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>.88</td>
<td>2.20</td>
<td>244</td>
</tr>
<tr>
<td>Total</td>
<td>Stole</td>
<td>1.27</td>
<td>2.19</td>
<td>253</td>
</tr>
<tr>
<td></td>
<td>Found</td>
<td>1.06</td>
<td>2.14</td>
<td>239</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1.16</td>
<td>2.17</td>
<td>492</td>
</tr>
</tbody>
</table>
Figure 2. Significant Interaction Between Race of Actor and Race of Participant in Full Data Set Using d’ as Dependent Variable.

Figure 3. Significant Interaction Between Race of Actor and Framing in Full Data Set Using d’ as Dependent Variable.
Analysis of Sensitivity/Accuracy (d’) Across Groups (excluding 4 videos)

The three-way between-subjects ANOVA on d’ scores was repeated, excluding one African-American actor and one Caucasian actor for a total of four videos (2 framings each). As described above, the two actors removed were judged to be the most different in appearance in the respective racial groupings. Analyzing the reduced sample, a significant main effect was found for race of actor, $F(1, 370) = 4.827, p < .05$ (see Table 10). Sensitivity for Caucasian actors ($M = .89, SD = 2.20$) was significantly lower than for African-American actors ($M = 1.36, SD = 2.12$) (see Table 9). Thus, there was greater discriminability between perp and foils when the actor was African-American than when the actor was Caucasian by participants of both races. In addition, a significant interaction was found between race of actor and framing of the act, $F(1, 370) = 5.026, p < .05$ (see Table 11). There is a significant difference between the race of the actors when the framing of the film was “found” (i.e., a non-transgression). When the actor was African-American, ($M = 1.58, SD = 2.04$), participants were able to better discriminate between perp and foil than when the actor was Caucasian ($M = .61, SD = 2.20$). However, when the framing of the film was “stole”, there was no difference between the African-American actor ($M = 1.20, SD = 2.17$) and the Caucasian actor ($M = 1.20, SD = 2.18$) (see Figure 4). Thus, the difference ‘disappears’ when the act was described as a transgression. No other main effect or interaction was found.

Table 9

Means for Race of Actor Using d’ as the Dependent Variable – Partial Data Set

<table>
<thead>
<tr>
<th>Race of Actors</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>African-American</td>
<td>1.36</td>
<td>2.12</td>
<td>192</td>
</tr>
<tr>
<td>Caucasian</td>
<td>.89</td>
<td>2.20</td>
<td>186</td>
</tr>
<tr>
<td>Total</td>
<td>1.13</td>
<td>2.17</td>
<td>378</td>
</tr>
</tbody>
</table>
Table 10

*Three-Way ANOVA for Accuracy/Sensitivity (d’) – Partial Data Set*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race of Participant</td>
<td>1</td>
<td>.063</td>
<td>.801</td>
</tr>
<tr>
<td>Framing</td>
<td>1</td>
<td>.152</td>
<td>.697</td>
</tr>
<tr>
<td>Race of Actor</td>
<td>1</td>
<td>4.827</td>
<td>.029</td>
</tr>
<tr>
<td>Race of Participant * Framing</td>
<td>1</td>
<td>.814</td>
<td>.368</td>
</tr>
<tr>
<td>Race of Participant * Race of Actor</td>
<td>1</td>
<td>1.101</td>
<td>.295</td>
</tr>
<tr>
<td>Framing * Race of Actor</td>
<td>1</td>
<td>5.026</td>
<td>.026</td>
</tr>
<tr>
<td>Race of Participant * Framing * Race of Actor</td>
<td>1</td>
<td>.693</td>
<td>.406</td>
</tr>
</tbody>
</table>

Error 370
Total 378

Table 11

*Means for Interaction Between Race of Actors and Framing with d’ as the Dependent Variable – Partial Data Set*

<table>
<thead>
<tr>
<th>Race of Actors</th>
<th>Framing</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>African-American</td>
<td>Stole</td>
<td>1.20</td>
<td>2.17</td>
<td>109</td>
</tr>
<tr>
<td></td>
<td>Found</td>
<td>1.58</td>
<td>2.04</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1.36</td>
<td>2.12</td>
<td>192</td>
</tr>
<tr>
<td>Caucasian</td>
<td>Stole</td>
<td>1.20</td>
<td>2.18</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>Found</td>
<td>.61</td>
<td>2.20</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>.89</td>
<td>2.20</td>
<td>186</td>
</tr>
</tbody>
</table>
Figure 4. Significant Interaction Between Race of Actor and Framing in Partial Data Set Using d’ as the Dependent Variable.

Post-Identification Confidence Levels

The majority (60.9%) of participants were confident (very sure/sure) that they positively identified the perpetrator, and this was found in both Caucasian and African-American participants (see Table 12).
Table 12

Post-identification Confidence Levels

<table>
<thead>
<tr>
<th>Count</th>
<th>Race of Participant</th>
<th>Caucasian</th>
<th>African-American</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>In general, how sure are you</td>
<td>Very Sure</td>
<td>75</td>
<td>63</td>
<td>138</td>
</tr>
<tr>
<td>that you were right in</td>
<td>Sure</td>
<td>67</td>
<td>95</td>
<td>162</td>
</tr>
<tr>
<td>identifying the person you</td>
<td>Not sure</td>
<td>76</td>
<td>73</td>
<td>149</td>
</tr>
<tr>
<td>saw in the video?</td>
<td>Not Sure At All</td>
<td>26</td>
<td>17</td>
<td>43</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>244</td>
<td>246</td>
<td>492</td>
</tr>
</tbody>
</table>

Contact Measures - Best Friends

All participants were asked to list 3 best friends. It appears from the answers that were provided that Caucasian participants are mostly friends with other Caucasians (n = 615). They had few best friends from another race, as seen in Table 13. In contrast, although African-American participants had mostly friends of the same race (n = 388), they reported having many Caucasian (n = 235) friends as well. An independent-samples t-test was conducted to compare performance on c3 in same race and cross-race friends. There was no significant difference in the scores for those who reported same race (M=1.62, SD=1.29) and cross-race (M=1.52, SD=1.04) friends; t (490) = .84 p = 0.40, as seen in Table 14 and 15.

A second independent-samples t-test was conducted to compare performance on d’ in same race and cross-race friends. There was also no significant difference in the scores for those who reported same race (M=1.22, SD=2.25) and cross-race (M=1.07, SD=2.04) friends; t (490) = .70 p = 0.49, as seen in Table 16 and 17.
Table 13

**Total Number of Best Friends by Race/Ethnicity**

<table>
<thead>
<tr>
<th>Race of Best Friends</th>
<th>Caucasian</th>
<th>African-American</th>
<th>Asian</th>
<th>Hispanic</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race of Participant</td>
<td>Caucasian</td>
<td>615</td>
<td>36</td>
<td>36</td>
<td>31</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>African-American</td>
<td>235</td>
<td>388</td>
<td>62</td>
<td>31</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>850</td>
<td>424</td>
<td>98</td>
<td>62</td>
<td>12</td>
</tr>
</tbody>
</table>

Table 14

**Means for Same Race and Cross-Race Friends with c3 as the Dependent Variable**

<table>
<thead>
<tr>
<th>have contact with same race or cross race friends</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3 only same race friends</td>
<td>327</td>
<td>1.618304</td>
<td>1.2943130</td>
<td>.0715757</td>
</tr>
<tr>
<td>cross-race friends</td>
<td>155</td>
<td>1.519040</td>
<td>1.0383682</td>
<td>.0834037</td>
</tr>
</tbody>
</table>

Table 15

**Independent t test for Same Race and Cross-Race Friends with c3 as the Dependent Variable**

<table>
<thead>
<tr>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Sig</td>
<td>t</td>
</tr>
<tr>
<td>C3 Equal variances assumed</td>
<td>7.406</td>
<td>.007</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>.903</td>
<td>.369651</td>
</tr>
</tbody>
</table>

27
Table 16

**Means for Same Race and Cross-Race Friends with d’ as the Dependent Variable**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPRIME</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>only same race friends</td>
<td>327</td>
<td>1.221251</td>
<td>2.2515150</td>
<td>.1245091</td>
</tr>
<tr>
<td>cross-race friends</td>
<td>155</td>
<td>1.072500</td>
<td>2.0411583</td>
<td>.1639498</td>
</tr>
</tbody>
</table>

Table 17

**Independent t test for Same Race and Cross-Race Friends with d’ as the Dependent Variable**

<table>
<thead>
<tr>
<th></th>
<th>t-test for Equality of Means</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Levene’s Test for Equality of</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Variance</td>
<td>t</td>
</tr>
<tr>
<td>DPRIME</td>
<td>Equal variances assumed</td>
<td>2.017</td>
</tr>
<tr>
<td></td>
<td>Equal variances not assumed</td>
<td>7.23</td>
</tr>
</tbody>
</table>

**Contact Measure – “Hanging out”**

More than half of the African-American participants reported that they hang out with Caucasians *very often/often* (65.7%). In contrast, more than half of Caucasians reported that it was *not very often/ almost never* that they hung out with African-Americans (68.2%) (see Table 14). The difference was significant, $X^2 (3, N = 421) = 66.02, p < .01$.

We next tested the relation between “hanging out” contact and identification performance. A Pearson product-moment correlation coefficient shows that “Hanging out” with cross-race friends was not associated with a stricter criterion ($c3$), but was significantly associated with better sensitivity ($d’$), $r(N = 420) = -.104, p < .05$ (see Table 15). However, although significant, the correlation is small.
Table 18

*Measure of “Hanging Out” with Members of Another Race*

<table>
<thead>
<tr>
<th>How often do you hang out with members of another race?</th>
<th>Very Often</th>
<th>Often</th>
<th>Not Very Often</th>
<th>Almost Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>C hanging out with AA</td>
<td>10.0%</td>
<td>21.8%</td>
<td>35.6%</td>
<td>32.6%</td>
</tr>
<tr>
<td>AA hanging out with C</td>
<td>20.8%</td>
<td>44.9%</td>
<td>29.7%</td>
<td>4.7%</td>
</tr>
</tbody>
</table>

C = Caucasian; AA = African-Americans

**Contact Measure – “Work Place Closeness”**

As seen in Table 16, 63% of Caucasians and 90.1% of African-American participants reported working *very close or somewhat close* to members of the opposite race. This means there were small percentages (36.9% of Caucasians and 9.9% of African-Americans) who reported not working at all with the other race. The difference was significant, $X^2 (2, N = 484) = 69.10, p < .01$, as contact rates were not distributed the same across racial groups.

Table 19

*Workplace Closeness of Participants with Members of Another Race*

<table>
<thead>
<tr>
<th>How do you work with members of another race?</th>
<th>Very Close</th>
<th>Somewhat Close</th>
<th>Not At All</th>
</tr>
</thead>
<tbody>
<tr>
<td>C working with AA</td>
<td>17.4%</td>
<td>45.8%</td>
<td>36.9%</td>
</tr>
<tr>
<td>AA working with CC</td>
<td>35.4%</td>
<td>54.7%</td>
<td>9.9%</td>
</tr>
</tbody>
</table>

C = Caucasian; AA = African-Americans

**Beliefs about False Positive and False Negative Errors**

As seen in Table 17, 383 participants (77.8%) believed that a false positive error was worse than a false negative error, independent of framing condition. When looking at race of the participant
(see Table 18), the majority, regardless of race, found a false positive error to be a worse mistake to commit.

Table 20

Participants Beliefs about False Positive and False Negative Errors Based on Framing

<table>
<thead>
<tr>
<th></th>
<th>F+</th>
<th>F-</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Framing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stole</td>
<td>210</td>
<td>43</td>
<td>253</td>
</tr>
<tr>
<td>Found</td>
<td>173</td>
<td>66</td>
<td>239</td>
</tr>
<tr>
<td>Total</td>
<td>383</td>
<td>109</td>
<td>492</td>
</tr>
</tbody>
</table>

Table 21

Participants Beliefs About False Positive and False Negative Errors Based on Participants Race

<table>
<thead>
<tr>
<th></th>
<th>F+</th>
<th>F-</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race of Participant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>177</td>
<td>19</td>
<td>196</td>
</tr>
<tr>
<td>African-American</td>
<td>196</td>
<td>42</td>
<td>238</td>
</tr>
<tr>
<td>Total</td>
<td>373</td>
<td>61</td>
<td>434</td>
</tr>
</tbody>
</table>

Task Difficulty

Participants were asked to rate how difficult they found the facial recognition task on a scale from 1 (very difficult) to 3 (not difficult at all). As seen in Table 19, most participants found the facial recognition task to be either very difficult or somewhat difficult (81.1%); only
18.9% did not find the task to be difficult. An additional table can be found in the appendix, it shows task difficulty based on race of actor, race of participant and framing.

Table 22

Task difficulty of facial recognition

<table>
<thead>
<tr>
<th>How difficult did you find the facial recognition task?</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very difficult</td>
<td>137</td>
<td>27.8</td>
</tr>
<tr>
<td>Somewhat difficult</td>
<td>262</td>
<td>53.3</td>
</tr>
<tr>
<td>Not difficult at all</td>
<td>93</td>
<td>18.9</td>
</tr>
<tr>
<td>Total</td>
<td>492</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Discussion

Decisional criterion (c3) and Sensitivity (d’)

This study found that when looking at decisional criteria, in general Caucasians committed fewer false positives than African-American participants. This result was found in both the full data set and the partial data set. When looking at the full data set, an interaction between race of participant and race of actor was found. African-Americans made more false positive errors when identifying than the Caucasian participants, as reflected in their lower C scores. This is contrary to Ayuk’s (1990) study, which found the cross-race effect was stronger for Caucasian eyewitnesses. Lindsay, Jack and Christian (1991) also found Caucasian participants performed notably better with Caucasian targets compared to African-American targets, but no such difference was found for African-Americans who performed equally well on both African-American and Caucasian targets. In contrast, in the current study the cross-race
deficit was found but, in this instance, it was African-Americans who had a more difficult time identifying the Caucasian actor. In addition, it was hypothesized that participants would use a stricter criterion when the film was framed as a crime than when framed as a prosocial act, but the results did not support this hypothesis. The current study did not find a significant difference between the framings when looking at decisional criteria.

It was also hypothesized that accuracy (sensitivity) would be higher when the perpetrator and foil were of the same race than when they were of a different race. This difference was hypothesized to be independent of the framing of the film. The current study found a cross-race effect for sensitivity/capacity to discriminate between *perps* and *foils* when looking at the full data set. African-American participants performed the same regardless of the race of the actor in the film, but Caucasian participants were more accurate when identifying African-Americans than a Caucasian. As already noted, this is not typically found in studies of the cross-race effect. Researchers often find that Caucasians have a harder time identifying cross-race perps. This unusual finding may be due, in part, to the African-American actor who had a shaved head. That could have made the identification easier in the films with African-Americans. When we removed the films in which the hairless actor appeared in (and also removed the two films from the least similar Caucasian actor), no cross-race effect was found. However, regardless of whether we looked at the full data set or the partial data set, we found that the *race of the actor* was significantly different when looking at *d’*. Thus, there appears to have been *increased* discriminability when the actor was African-American. Despite the issue with the African-American actor, most of the participants reported that the facial recognition task was either very difficult or somewhat difficult (81.1%); only 18.9% did not find the task to be difficult. So perhaps the increased discriminability was not due to the appearance of that actor but due to
something else. There was also no difference found between framing condition, race of actor or race of participant.

**Framing**

It was hypothesized that there would be a three-way interaction between the framing of the film, the race of the perpetrator and of the foils, and the race of the eyewitness. Specifically, decisional criteria were predicted to be lower when the race of the perpetrator and foils was different from the eyewitness, primarily when the filmed behavior was described as a crime compared to when it was described as a prosocial act. Such a three-way interaction was not found when looking at decisional criteria or sensitivity. However, a two-way interaction was found for *sensitivity* when looking at both the full data set and the partial data set. When the framing was the *found* condition, and the actors were African-Americans, participants were able to better discriminate between the *perp* and *foil*. This finding is partially consistent with studies by Spring et al. (2013; 2015), which found that how the act was described influenced false positives and false negatives. However, in the current study, the framing had a significant effect on *sensitivity* but not in *decisional criteria*.

This interaction is interesting because it suggests that the participants were more careful in identifying an African-American person doing a good deed than when an African-American was depicted as stealing. What could be the possible explanations for this? Perhaps society and the media often negatively portray African-Americans and seeing the good act enabled participants to have better recall because it was an unexpected or contrary to the stereotype.

**Contact Findings**

According to past researchers (Ng & Lindsay, 1994; Chance, Goldstein & McBride, 1975), the amount of cross-race contact will influence a person’s facial recognition ability. Less
exposure decreases the ability to discriminate among stimuli. The less contact a witness has with persons of another race, the more prone they are to commit an error when judging someone of that race. In this view, own race perceptual bias is the product of experience obtained through contact; other-race recognition is more novel, and therefore more errors occur when it comes to identifying a person of another race.

Based on this past research, it was hypothesized that those who report more frequent contact with other race individuals would have higher sensitivity (accuracy) rates than those who report less frequent contact, independent of the framing of the film/act. In addition, those who report close friends of other races would have higher bias scores primarily or only in the framing of the film as involving a transgression (stealing). In the current study, both African-Americans and Caucasians reported having mostly same-race best friends, which would lead one to believe that they would both perform poorly in cross-race identifications. However, most of the African-Americans reported “hanging out” very often/often with Caucasians, but most of the Caucasians reported not hanging out very often with African-Americans. When looking at work place closeness, both groups reported working closely or somewhat closely to the opposite race. When performing correlations, “hanging out” was significantly associated with better sensitivity regardless of framing. This was the only significant correlation found involving reported contact and performance.

Despite the finding that African-Americans, in general, reported having more contact with Caucasians, they had a harder time identifying Caucasian faces. This finding possibly ties in with Allport’s (1954) contact theory, which was discussed earlier. He argued that increased intergroup contact does not necessarily lead to interracial friendship, it may instead reinforce
previously held stereotypes and increase hostility, especially when the environment provides unequal status for minority and majority groups.

The opposite was found for Caucasians. Caucasians committed fewer false positives than did African-Americans, yet they reported fewer cross-race best friends and rarely “hung out” with African-Americans. However, most did report working closely with African-Americans. Malpass (1990) argued that increased contact in general could influence an individuals’ motivation as well as their ability to accurately recognize other-race faces. Could this perhaps be the reason for their better performance in decisional criteria? If this is true, then why wasn’t this seen with the African-American participants? African-American participants reported having more contact with cross-race friends than Caucasian participants, yet they did not perform in the same fashion. Perhaps the current political climate in the United States has impacted the results.

**Limitations**

This study was performed online using the software Qualtrics and participants were recruited via M-Turk. Participants were paid via Amazon and are constantly taking surveys and partaking in experiments, therefore the sample may not be representative of the general population; however, this sample is probably more representative of the general population than a sample of college freshmen. In the future, this study should be replicated but in a different context. It may yield different results when working with participants who are not so invested in constant participation in research.

Another (major) limitation was the African-American actor with a shaved head. I recruited four African-American actors and four Caucasian actors via the website backstage.com. It took approximately two weeks to get them all to agree on a date for filming. The actors were instructed to send a *selfie* of themselves prior to hiring them to see what they currently looked like.
like. They were instructed that it was important for them to have similar haircuts, no facial hair
or scars. However, on the day of the filming, one actor arrived with a shaved head. (He explained
that he had had another job that required such an appearance, but did not inform me, the
researcher!) This may have changed the results of the study because he (an African-American)
was easier to identify. To try to see if, in fact, this influenced the results, after consulting with my
advisor and the committee, I decided to do additional analyses removing the two films in which
he appeared and two films of the least similar Caucasian actor (according to myself and my
advisor). The results were slightly different following this removal, suggesting that the
appearance of at least one of the actors influenced the results.

Future Research

The current study has demonstrated that framing of the act can have an influence on
identification performance in examining cross-race eyewitness identification effects. To my
knowledge, manipulation of event framing had not been done before in cross-race identification
research. This should be further explored using different scenarios. It’s fascinating that
participants had increased discriminability when the actor was African-American, and when the
framing was “found”. Perhaps researchers should ask additional questions after the lineup to
better understand their thinking process. Maybe even have each participant watch both scenarios,
one in which the item is stolen and the other is found. Immediately afterwards, they can be asked
about what they saw, have them describe the perp, have them describe their actions and how they
feel regarding the two scenarios. This would provide additional information from the participants
and the within-subject design would help control for extraneous variables.

We should continue to explore the cross-race effect because of its relevance to racial
justice in forensic settings. In this study, we see that African-Americans had a more difficult time
identifying the perp when the actor was Caucasian. So, we saw the Cross-Race Effect but in this study, it only appeared with the African-American participants. Of course, this may also reflect something about (a) changes in race relations over the last few years, (b) about the population studied and the method for studying it (i.e., on-line sampling), (c) the particular event and method of presenting it, or something else. The point of this study was to find an explanation for cross-race identification but that seems to depend on many things, e.g., the nature of the transgression, the sampling of the participants, the setting of the study. The current study instead provides a method for helping to differentiate between the two basic kinds of interpretation, as having to do with attitudes towards members of the other race or with degree of familiarity with those of a different race. Recognizing that, I believe that the study adds to the literature on cross-race eyewitness identification.

Future research should also explore if severity of the crime committed (including the kind of crime, e.g., against property or against person) influences cross-race identification. The scenario in the current study used the theft of a cell phone. If convicted the potential prison time (if any) would not be very severe. If the scenario was a murder, perhaps the results would have been different. Perhaps participants would use a stricter criterion as the severity of the crime increases. (Depending upon which state the murder occurs, it could mean the death penalty). It would indeed be interesting to see what changes occur in a scenario where someone commits murder and is in a state with and without the death penalty. How would this affect performance? Would participants use a stricter or looser criterion?

More generally, the idea of studying the Cross-Race Effect under different framings of the act and with different kinds of samples should help us tease out what may be attributed to different degrees of contact and what to the use of different criteria for guilt.
# Appendix A

## Face Recognition task

<table>
<thead>
<tr>
<th>Name: _____________________________________</th>
<th>Date: ____________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photos</td>
<td>Very Sure it <strong>IS NOT</strong> the man in the video</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>
Appendix B

Questionnaire

Name: _______________________________   Age: ________________
Gender: _______________________________  Grade: ________________

Now could you please answer some questions about what you just did.

1. In general, how sure are you that you were right in identifying the person you saw in the video?
   ( ) Very sure    ( ) Sure    ( ) Not Sure    ( ) Not sure ate all

2. Let’s say, the person you said took the wallet was not the one who did? How bad is it to make this kind of mistake?
   ( ) Very bad    ( ) Bad    ( ) Not so bad
   Why?

3. Let’s say, the person in the video really was the one who took the cell phone, and you said he did not? How bad is this kind of mistake?
   ( ) Very bad    ( ) Bad    ( ) Not so bad
   Why?

4. Which kind of mistake do you think is worse? Just pick one.
   ( ) Saying someone took the cell phone when he/she really did not.
   Or
   ( ) Saying someone did not take the cell phone when he/she really did.
   Please explain your choice.

We are interested in knowing how people make decisions in cases of eyewitness identification, and we are going to ask you some questions.
[Adapted from Da Silva, (2008).]

5. Below is a list of decision strategies which you might have used. Please mark (1) in the strategy you used most, (2) in the strategy you used next most, and so on. If you did not use the strategy mentioned below at all, just mark (N).

   ( ) I just recognized him. I can’t explain how. The face of the man who took the wallet just kept “popping up”.

   ( ) I looked at physical features of the faces such as: nose, hairline, mouth, and kept those in mind when deciding if that was the man who took the wallet.

   ( ) I compared each face with those which have already been shown and decided on the person by a process of elimination, which face was closer to the face of the man who took the wallet.
( ) I looked at the face as a whole and tried to match photos with the person who took the wallet.

( ) I remembered thinking about the thief’s traits such as: Strong/shy/sweet/mean/kind/angry…

( ) I tried to match each photo to my initial memory of the man who took the wallet without comparing one photo to another.

Others:

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

6. Overall, how difficult do you find this task of facial recognition to be?

( ) Very difficult

( ) Somewhat difficult

( ) Not difficult at all

7. (Optional) Have you ever testified as an eyewitness in real life?

( ) Yes  ( ) No

If yes, briefly explain:

______________________________________________________________________________

______________________________________________________________________________

8. (Optional) Have you ever been a victim of a crime?

( ) Yes  ( ) No

If yes, briefly explain:

______________________________________________________________________________

______________________________________________________________________________

9. Please list the first name of your three best friends.

Best Friend 1:

Best Friend 2:

Best Friend 2:
10. Now that you listed the name of your 3 best friends, write down who they are, and how long you have been friends. For example, (Male, 21 years old, Asian American and we are friends for the last 5 years).

**Best Friend 1:**
Gender: _____________   Age: _____________   Race/Ethnicity: ________________
How long have you been friends? ______________________________________________

**Best Friend 2:**
Gender: _____________   Age: _____________   Race/Ethnicity: ________________
How long have you been friends? ______________________________________________

**Best Friend 3:**
Gender: _____________   Age: _____________   Race/Ethnicity: ________________
How long have you been friends? ______________________________________________

We are interested on how often you have contact with members of another race/ethnic groups, and we are going to ask you some questions.
11. How close do you work with members of the following race/ethnic groups?

**Asian Americans:**
( ) Very close   ( ) Somewhat close   ( ) Not at all

**Blacks (Africans, African-Americans, Caribbean Blacks):**
( ) Very close   ( ) Somewhat close   ( ) Not at all

**Caucasian/Whites:**
( ) Very close   ( ) Somewhat close   ( ) Not at all

**Latinos/Hispanics**
( ) Very close   ( ) Somewhat close   ( ) Not at all

If others (specify) __________________________________________________________

12. How often do you “hang out” with people of various races or ethnic backgrounds such as:

**Asian Americans:**
( ) Very often   ( ) Often   ( ) Not very often   ( ) Almost never

**Blacks (Africans, African-Americans, Caribbean Blacks):**
( ) Very often   ( ) Often   ( ) Not very often   ( ) Almost never

**Caucasian/Whites:**
( ) Very often   ( ) Often   ( ) Not very often   ( ) Almost never

**Latinos/Hispanics**
( ) Very often   ( ) Often   ( ) Not very often   ( ) Almost never

If others (specify) __________________________________________________________

13. Any suggestions or comments:
Participant’s Information

Age: _____________________________
Gender: __________________________
Race:
1) American Indian or Alaska Native
2) Asian
3) Black or African American
4) Native Hawaiian or Other Pacific Islander
5) White

Ethnic background:
1) Hispanic or Latino or Spanish Origin
2) Not Hispanic or Latino or Spanish Origin

Thank you very much for your time!
Appendix C

Caucasian lineup – Frontal

The actor in the center was not in the film but appeared in the line-up
Caucasian lineup – Right profile

The actor in the center was not in the film but appeared in the line-up
Caucasian lineup – Left profile

The actor in the center was not in the film but appeared in the line-up
African-American lineup – Frontal

The actor in the center was not in the film but appeared in the line-up
African-American lineup – Right profile

The actor in the center was not in the film but appeared in the line-up
African-American lineup – Left profile

The actor in the center was not in the film but appeared in the line-up
Appendix D

Figure 5. Interaction Between Race of Participant and Same Race vs Cross-Race in Full Data Set

Using c3 as Dependent Variable
REFERENCES


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