The Effects of Familiarity and First Impressions on Eyewitness Testimony in a Target-Absent

Line-Up

By

Adena L. Brown

A Thesis Submitted to Saint Mary's University, Halifax, Nova Scotia in Partial Fulfillment of the
Requirements for the Certificate of Honours Equivalency

April, 2016, Halifax, Nova Scotia

Approved: Dr. Steven M. Smith.
              Dean of Science

Date: April 08, 2016

The Effects of Familiarity and First Impressions on Eyewitness Testimony in a Target-Absent

Line-Up

by Adena L. Brown

Abstract

Eyewitness identification is often the leading factor contributing to convictions, however,

eyewitness misidentifications are the leading cause of the incarceration of innocent persons.

Even more troubling is that eyewitness identifications are often made with high confidence.

Familiarity is a key component of eyewitness identification. Familiarity refers to our recognition

of familiar faces – friends, celebrities and even unfamiliar faces learned during experiments.

First impressions, on the other hand, are the snap judgments we make about a person's character

and intentions based on their facial features, attractiveness and race. The present study will

investigate 1) whether eyewitness identifications are affected by the target being familiar; 2) if

being familiar leads to more accurate identifications; and 3) if our first impressions of a target

(positive, negative, or neutral target description) affect our identification accuracy and

perceptions of guilt. We will also investigate if our perceptions differ based on the race of a

target.

Keywords: eyewitness, eyewitness identifications, target-absent lineup, familiarity, first

impressions, race, confidence, accuracy, guilt,

April 08, 2016

Acknowledgements

Thank you God for your grace, love and guidance throughout my life and for giving me the tenacity to conduct, write and complete this work. I would not be here if it were not for you. *Philippians 4:6-7.*

To my supervisor, Dr. Steven M. Smith: thank you for believing in me. I am forever grateful for your advice, guidance, encouragement, and overall supervision. You have been an amazing support both academically and professionally. Thank you for your tutelage and dedication to your students. It has been a pleasure working with you!

To my parents, Paula and Dennis, and family: thank you for your continued support along the way. I hope I continue to make you proud.

Finally, to my fiancée, Jade: thank you for your love, patience and understanding. I love, appreciate and thank you for believing in me and encouraging me to pursue my dreams. I thank God for you.

Table of Contents

The Effects of Familiarity and First Impressions on Eyewitness Testimony in a Target-Absent

Line-Up

List of Tables and Figures

List of Appendices

The Effects of Familiarity and First Impressions on Eyewitness Testimony in a Target-Absent

Line-Up

On September 29, 1987 at 5:00 am, an unknown man broke into a home in Scarborough, Ontario and entered the bedroom of a 15-year-old girl. He got on top of the girl, covered her mouth and threatened her with a knife. The girl's mother came to check on her daughter since she heard noise coming from her bedroom. Upon entering her daughter's room, the intruder "roared like a lion" and fled (Harland-Logan, 2015; Makin, 2009).

In an attempt to track down the intruder who had attacked her daughter, the mother was cooperative with police and conducted her own investigations. She described the assailant as "6'0″, 170 lbs., slim build, 19 years of age with sandy brown, wavy hair, wearing a black leather jacket and blue jeans."; however, she had not been wearing her glasses at the time of the break-in. She hypothesized that the intruder must have been "keeping watch on her daughter and on the house" and concluded that the intruder must have been a construction worker in the area. A couple months later the girl's mother picked Anthony Hanemaayer's picture from a photo line-up (Harland-Logan, 2015).

Anthony Hanemaayer, at the age of 19, was arrested for a crime he did not commit on December 18, 1987 and entered a guilty plea, as part of a plea deal, on October 18, 1989 (R. v. Hanemaayer, 2008). He was sentenced to one day less than two years in prison in which he spent a total of sixteen months incarcerated. He was not acquitted of the crime until June 25, 2008 – more than 20 years after his initial arrest (Harland-Logan, 2015).

One of the most important factors leading to the wrongful conviction of Anthony Hanemaayer was the heavy reliance of eyewitness testimony from the victim's mother. The

victims mothers' description of the intruder was used by police officers and those involved in the trial to convict Anthony despite knowing the witness was not wearing her glasses at the time. Therefore, her recollection of the intruder's description may not have been accurate and should have been subjected to further scrutiny. In addition, the photo line-up was presented to the victim's mother as a *simultaneous lineup*; one in which all of the photos are presented to the witness at the same time. This type of line-up in known to be bias such that witnesses tend to pick the photo that is the 'best-fit' to their memory even if none of the photos are of the perpetrator. Furthermore, the victim's mother testified that the photo selected of Anthony was the blurriest in the set of photos. This could lead to further bias because his photo may have stood out to the witness simply because it was different from the others (Harland-Logan, 2015).

Anthony Hanemaayer's case is an example of how certain factors can lead to confident, but wrong, eyewitness identifications (R. v. Hanemaayer, 2008). For instance, the fact that Anthony may have been familiar to the eyewitness, because he worked at a construction site in the victims' neighborhood, may have affected her ability to determine where she recognized him from – it is possible that she may have seen him working (R. v. Hanemaayer, 2008) rather than in her home. In addition, the use of a simultaneous photo line-up may have led to further inconsistencies in the witnesses' recollection of the assailant of the crime. The present literature review addresses how witnesses' identifications of a suspect may be affected by the use of a target-absent photo line-up when the suspect is familiar to the witness, as well as how these factors can be affected by the race of the suspect.

Eyewitness Research

Eyewitness identification is often essential for the conviction of a criminal offence, especially if there is little evidence presented in the case, is the most significant evidence used by the prosecution (Public Prosecution Service of Canada, 2011). Eyewitness testimony is one of the main mitigating factors leading to conviction in criminal trials; however, eyewitness misidentification and the subsequent conviction of innocent persons is a major flaw of this widely used practice (Public Prosecution Service of Canada, 2011). Eyewitness misidentification is the leading cause of wrongful convictions proven by DNA testing with many misidentifications being made with high confidence (Wixted, Mickes, Clark, Gronlund, & Roediger III, 2015; Garrett, 2011; Innocence Project). In addition, of the first 225 exonerations of wrongfully convicted individuals by the Innocence Project in the U.S., 77% were a result of incorrect eyewitness identifications (O'Neill Shermer, Rose, & Hoffman, 2011; Innocence Project). The Association in Defence of the Wrongly Convicted (AIDWYC) is a non-profit Canadian organization dedicated to exonerating individuals wrongfully convicted of crimes they did not commit (The Association in Defence of the Wrongly Convicted, 2015). The AIDWYC, founded in 1993, has led to over 20 successful exonerations of innocent persons (The Association in Defence of the Wrongly Convicted, 2015) including Anthony Hanemaayer.

In all types of identification procedures, eyewitnesses always describe characteristics of the target's appearance, particularly their face. Faces provide us with valuable information about a person such as their age, gender, race, emotionality and cues about how, or if, we should interact with them (Barzut & Zdravković, 2013). However, how we identify with other faces can also be problematic in eyewitness identification. The cross-race effect (CRE) is a phenomenon that occurs during facial recognition in which people have been found to be better at identifying and remembering faces of their own race compared to faces of another race (Marcon, Meissner,

& Malpass, 2008). The two hypothesized causes for the CRE are 1) lack of experience and 2) categorical thinking (Wilson, Hugenberg, & Bernstein, 2013). The first hypothesis, lack of experience, is related to as "de facto racial segregation (p. 88)" which leads people to have substantially more contact with people (and faces) of the same race as them rather than a different (cross) race; multicultural nations, such as Canada, are not exempt from this trend. This then leads people to have more experience processing same-race faces compared to cross-race faces leading to disproportionate accuracy as it related to facial recognition (Wilson, Hugenberg, & Bernstein, 2013). The idea of categorical thinking posits that people automatically and spontaneously categorize people when seeing them based on their physical characteristics such as age, sex and race (Wilson, Hugenberg, & Bernstein, 2013; Macrae & Bodenhausen, 2000; Ito & Urland, 2003). Categorizing is thought to help us simplify our navigations throughout our daily encounters - categories enable us to make predictions about how others may behave; however, the phenomenon of categorization can "make faces that belong to the same category seem to blend together" leading people to be seen as groups rather than individuals (Wilson, Hugenberg, & Bernstein, 2013).

A contributing factor to eyewitness (mis)identification is the type of photo line-up used to identify targets. A "target" is the perpetrator of a crime. "Identification errors from lineups are particularly problematic as they are the single leading cause of wrongful conviction (Lindsay & Pozzulo, 1999, p. 347; Huff, Rattner, & Sagarin, 1986; Wells, et al., 1998)". Wells (1984) proposed that target-absent lineups were a useful way to eliminate poor eyewitnesses in order to reduce false-positive rates. Target-absent lineups are one's in which the suspect is not present (Lindsay & Pozzulo, 1999; Wells & Murray, 1984). A false positive in the context of target identification by an eyewitness is when the eyewitness chooses a photo from a lineup but is

incorrect (they either misidentified the target or the target is not present in the lineup). A correct identification when using a target-absent lineup is a correct rejection – this is when an individual indicates the suspect is not in the lineup presented to them (see figure 1). Wells' (1984) theory posits that if eyewitnesses select a photo from the target absent lineup then they may be discarded as a credible witness whereas those that do not select a photo from the target absent lineup could be considered more reliable. Wells' (1984) research found that almost 40% of eyewitnesses made incorrect identifications when provided with a target absent lineup (Lindsay & Pozzulo, 1999). Target absent lineups are particularly problematic, as identified by Brewer and Wells (2006), because a misidentification can result in an innocent person being charged with a crime and potentially incarcerated.

		Chooses a Suspect	Does not Choose the suspect
Lineup Type	Target-Present	Correct Identification	Bad Witness
	Target-Absent	False Positive Identification	Correct Rejection

Figure 1. Lineup Types and Their Responses.

Furthermore, the notion of eyewitness confidence has played a controversial role in eyewitness testimony (mis)identification. When eyewitness accounts are taken, especially when they are given during trial proceedings, the confidence of the eyewitness is often taken into consideration (Department of Justice, 2015). Although much of the research literature has found that the confidence-accuracy (CA) relationship of eyewitness identification is weak, limited or nonexistent (Wixted, Mickes, Clark, Gronlund, & Roediger III, 2015; Krug, 2007), a distinction has been made regarding the time eyewitness accounts are provided as it relates to CA. A

correlation exists between CA at the time of the initial eyewitness identification (e.g., eyewitness account taken by police directly after a crime occurs) but not when eyewitness testimony is provided in court (Public Prosecution Service of Canada, 2011; Sherrin, 2007; Wixted, Mickes, Clark, Gronlund, & Roediger III, 2015). In conclusion, "the best scientific evidence suggests that low confidence implies low accuracy, and high confidence implies high accuracy so long as confidence is assessed at the time of the initial ID (not later, in court) (Wixted, Mickes, Clark, Gronlund, & Roediger III, 2015, p. 524; Lindsay, Read, & Sharma, 1998; Brewer & Palmer, 2010)." In addition, CA tends to be highest when making own-race identifications (Barzut & Zdravković, 2013; Wright & Stroud, 2003; Meissner & Brigham, 2001).

Many variables that affect eyewitness identification accuracy including estimator variables, system variables (Lindsay & Pozzulo, 1999; Wells G. , 1978) and assessment variables (Sporer, 1993; Brewer & Wells, 2006). Estimator variables are those that cannot be controlled by the criminal justice system such as age, target appearance (e.g., facial distinctiveness or disguise), change of context in which the target is viewed, confidence, and cross-race effects (Lindsay & Pozzulo, 1999; Narby, Cutler, & Penrod, 1996). Other variables include exposure time, retention interval (time between first seeing the suspect and first attempt to identify them), and replaying the event or frequently thinking about the appearance of the criminal (Lindsay & Pozzulo, 1999; Narby, Cutler, & Penrod, 1996). The main system variable that will be described throughout this article is the target lineup and its varying types. System variables, in particular lineups techniques, are designed to reduce the effect of estimator variables by reducing false-positives rates (identifying an incorrect target) (Lindsay & Pozzulo, 1999). The effect of race and confidence will also be investigated.

Familiarity

Familiarity refers to the recognition of familiar faces. Familiarity can occur because of the recognition of: 1) personally familiar faces (e.g., friends, relatives); 2) famous faces (e.g., celebrities, politicians) and 3) previously unfamiliar faces learned in the first learning phase of an experiment (Barzut & Zdravković, 2013). Familiarity is not exempt from the effects of CRE. Research has identified that research participants are more likely to positively identify own-race faces (by 1.40 times) and more likely to falsely identify other-race faces (by 1.56 times) (Marcon, Meissner, & Malpass, 2008). Furthermore, particular features also have an effect on eyewitness identification and subsequent perceptions of guilt (Marcon, Meissner, & Malpass, 2008; Knuycky, Kleider, & Cavarak, 2014). For instance, Black men who have stereotypically black features (e.g., darker skin, wider nose and fuller lips) are more likely to be perceived as criminals than non-stereotypical Black features (Knuycky, Kleider, & Cavarak, 2014; Dixon & Maddox, 2005; Kleider, Cavrak, & Knuycky, 2012; Blair, Judd, & Chapleau, 2004). In relation, Knuycky and colleagues (2014) found that stereotypically Black faces are more likely to produce "misplaced feelings of familiarity (p. 44)", compared to non-stereotypically Black faces, making them more susceptible to false-positive eyewitness identifications. Furthermore, the study by Barzut and Zdravković (2013) found that recognizing faces of the same race had more accurate eyewitness identifications, independent of familiarity. Wilson and colleagues (2013) warrant that cross-race eyewitness identification and/or testimony should be treated with caution, and more scrutiny, than eyewitness identifications and/or testimony involving the same race.

Confidence

One of the most researched estimator variables, which will be investigated in the present study, is confidence in eyewitness identifications (Brewer & Wells, 2006). As previously mentioned, high confidence does not necessarily mean high accuracy depending on when

confidence is assessed; the confidence-accuracy relationship also plays a role in relation to familiarity and first impressions. Reinitz and colleagues (2012) investigated whether face recognition is feature-based or familiarity-based. Face recognition that is feature-based would indicate that faces are recognized based on particular facial features/characteristics whereas familiarity-based would indicate faces are recognized because of previous exposure/experience with the face. Their results found that both accuracy and confidence increase with exposure time. Furthermore, their results found that when confidence is held constant, accuracy is higher for familiarity-based responses whereas feature-based responses were more accurate and confident if confidence was not controlled for.

First Impressions

First impressions "refer to the snap judgments made regarding a person's trustworthiness based upon their facial appearance (Yu, Saleem, & Gonzalez, 2014, p. 17)". First impressions tell us information regarding a person's character, personality and intentions and are often based on a person's emotional expression, facial features, attractiveness, and race (Baker, ten Brinke, & Porter, 2013). Research by Baker and colleagues (2013) indicates that when eyewitnesses have more information about a target that affects first impressions, other than the target just being familiar, it increases the risk for false-positive identification. For instance, information provided about an individual's morality or criminality can have an effect on the identification of experimentally learned familiar faces. The study by Baker and colleagues (2013) investigated the effects of first impressions on facial identification. It was found that providing biasing information regarding an individual's morality had a negative effect of participants' ability to identify the targets face and facial trustworthiness. Using facial composite software, participants provided with negative morally biasing information selected a less trustworthy version of the

target than the (familiar) face they originally viewed; the opposite effect was not found when positive moral bias was used (Baker, ten Brinke, & Porter, 2013).

Dangerous Decision Theory (DDT; Porter & ten Brinke, 2009) suggests that impressions of trustworthiness, based on facial appearance, leads to poor, incorrect decision-making (Porter, ten Brinke, & Gustaw, 2010). The study by Porter and colleagues (2010) investigated how dangerous decisions, based on DDT, affect sentencing decisions for individuals perceived as untrustworthy. Their results found that less evidence was required to convict untrustworthy looking targets compared to targets they perceived as trustworthy even though the same crime was committed. In addition, targets perceived as untrustworthy were considered guilty even if little evidence was brought forward, even if the evidence was 'ambiguous' whereas targets perceived as trustworthy required more incriminating evidence in order to get a conviction. Furthermore, participants were most confident when sentencing targets perceived as untrustworthy (2010).

The Present Study

The present study will explore how familiarity and first impressions affect decision making in regards to the targets' perceived trustworthiness, attractiveness, and guilt. I hypothesize that:

H1a: Participants who are familiar with the target will make correct identifications in the target-absent lineup and be more likely to perceive the target as a victim when receiving positive information about the target.

H1b: Individuals receiving negative information about the target will make incorrect identifications in the target-absent lineup and be more likely to perceive the target as guilty.

H2a: Participants will be more confident in their decisions when the target is perceived as untrustworthy and guilty

H2b: Participants will have correct identifications in the target absent lineup when they are confident in their decisions

H3: There will be a main effect of race, such that Black targets will be more likely to be perceived as guilty, regardless of the information provided

H4a: Participants will be more confident and make correct identifications in the target-absent lineup when the target is of the same race

H4b: Participants will be less confident and make incorrect identifications in the target-absent lineup when the target is of a different race

Method

Participants

The sample population (N=206) was recruited from Saint Mary's University, using the SONA Psychology bonus point system, and the general public through public advertisements on local classifieds websites. Ages ranged from 17 to 43 years old with the mean age being 21.69 (*SD*=4), a majority of participants were females (n=148, 71.8%), and over half indicated their main occupation as being a student (n=116, 56.3%). A number of demographic questions (Appendix A) were asked to gather a profile of the current participant pool: A majority of the

participants indicated they were from medium socioeconomic status (n=167, 81.1%), followed

by low (n=22, 10.7%) and high (n=16, 7.8%); one participant did not provide this information. A

majority of participants were Canadian (n=133, 64.5%), however 58 (28.2%) were not Canadian

and 15 (7.3%) did not provide this information. Most of the participants were

Caucasian/European (n=119, 57.8%) followed by African-Canadian/African/Afro-Caribbean

(n=31, 15.0%), Middle Eastern/Arab (n=19, 9.2%), Asian/Pacific Islander (n=12, 5.8%), East

Indian/South Asian (n=7, 3.4%), First Nations/Aboriginal (n=4, 1.9%) and other (n=8, 3.9%).

Research Design

A two (Familiarity: familiar vs. Unfamiliar) x three (First Impression Information:

positive vs. Neutral vs. Negative) x two (Race of Target: Caucasian vs. African American)

design was used. There were four confederates used as targets to ensure there was no effect due

to the specific target for each race. Participants were randomly assigned to one of 24 different

conditions (12 for each target race). Participants in the familiar condition were given equal

amounts of exposure time to the targets face and were asked questions based on the scenario they

were shown. The same applied to the unfamiliar condition with the except that the target was not

shown to participants.

Independent Variables. The independent variables were familiarity (unfamiliar vs.

Familiar), first impression information (positive, neutral, and negative) and target race

(Caucasian vs. African American). Participants in the unfamiliar condition were not exposed to

the targets face whereas those in the familiar condition were exposed to the targets face while

providing first impression information. First impression information, where the target was

described as having positive, neutral, or negative characteristics was provided for all targets regardless of familiarity condition.

Outcome Variables. Participants were asked to rate targets' perceived trustworthiness, competence and attractiveness. This provided an estimate of first impressions; positive first impression information would lead to higher target ratings of trustworthiness, competence and attractiveness. Participants were also asked whether they thought the target had most likely committed a crime or was the victim of a crime. All perceptions were received using a 7-point Likert-scale ranging from very unlikely to have said trait to very likely to have said trait (Appendix B). Accuracy was determined by whether the participant chose an individual from the target-absent simultaneous lineup. If participants indicated the target was not present in the lineup they were considered correct, all other responses were considered incorrect. Measures of confidence were taken after participants made their target choice in the simultaneous lineup. Confidence was also measured using a 7-point Likert-scale ranging from not at all confident to very confident (Appendix B). Two different targets were used for each race to complete manipulation checks.

Procedure

The experiment was created using Qualtrics online survey tool and administered entirely online. Participants were told the experiment was interested in examining interactions with strangers and were informed they were going to watching a short video and that their full attention would be required. All conditions were randomized.

The experiment begins with a script in which the participant is informed they are sitting in a restaurant with a friend and someone (the target) approaches the table. The participant is told

that the person that approached the table is known to the friend, but is a stranger to them. In the familiarity condition, the participant is shown a photo of the targets face; in the unfamiliar condition, participants are not shown an image of the target. The friend and acquaintance have a brief conversation and when the target left the table, first impression information was provided to the participant – the acquaintance was described as having either positive, neutral, or negative characteristics. Participants were then provided a menu and told to choose three items while staying within a $20 budget including tax and optional gratuity. This was used as a filler task to simulate passing time in the scenario. After placing their order, the rest of the script continues in which participants are informed they are leaving the restaurant and "notice something odd". Participants are then played an ambiguous video, which the target is in, and is told by their friend that the person they see in the video is the individual they spoke to earlier. Participants were then asked to describe the individual in the video; provide judgments about the targets perceived trustworthiness, attractiveness, competence, guilt (7-point Likert scales asking the likelihood of the target committing a crime and the likelihood of the target being the victim of a crime); and make a dichotomous guilt decision (whether the individual most likely committed a crime or was the victim of a crime). Participants were then were asked to describe the scene the saw in the video (different then describing the individual in the video). Participants were then provided a simultaneous lineup and were informed that the target may or may not be present in the lineup and other features, such as clothing, may change. Participants were asked to choose the target from the lineup or indicate if the person they saw in the video was not present in the lineup. Participants were then asked to indicate how confident they were in their decision. For the purpose of this study, a simultaneous lineup was used as an attempt to create a higher error rate in order to help identify potential differences between conditions.

Materials

      Script. This was the narrative used throughout the experiment. It tells a story about an encounter with a stranger (the target) and the interview the participant has with a figurative police officer (Appendix B)

      Facial Stimuli. The Social Attitudes Psychology Laboratory at Saint Mary's University has a collection of faces dated from 1990 to 2015. These images have been piloted and measured for attractiveness, competence, trustworthiness, and criminality. Research assistants from the lab were part of a focus group to assign foils from the facial collection for the line-up. Four volunteered confederates were used as targets one, two, three and four (Appendix C). To ensure there was no individual person effect, two separate stimuli (one for each race) were randomly assigned as targets. Facial stimuli were only presented in the familiar condition; however, all participants, regardless of condition, viewed the simultaneous lineup.

      First Impression Information. Participants were randomly assigned to receive positive, neutral, or negative information about the target. An example of the negative information is "That was John. I went to high school with him. He basically failed every class he was ever in. As you can see, he did not amount to much. I am not sure what he does for a living, but I know that when we were in high school he used to sell drugs instead of getting a real job like the rest of us." An example of the positive information is "That was John. I went to high school with him. He was a straight A student. As you can see, he is pretty successful. I am pretty sure he went to school for dentistry, but I know that when we were in high school he used to be on the yearbook committee. He was involved in the community center". No information was provided for the neutral condition making it a control condition.

Ambiguous Video. Participants were presented with an ambiguous video. In the video, the target was running towards them down the street, suddenly turning their head to look behind them. All videos were recorded during the day on a residential street.

Results

Lineup Choice

Overall Lineup Choice. When looking at overall target choice in the target absent lineup, the frequency of incorrect responses to correct responses in the target-absent lineup was 71 (34.6%) and 134 (65.0%) respectively; one (.5%) participant did not make a decision in the target-absent lineup. When looking at the choices made for each target in the target-absent lineup, 18 (8.7%) participants selected photos one and three, 10 (4.9%) participants selected target two, 6 (2.9%) selected target four, 14 (6.8%) participants selected target five, and 5 (2.4%) participants selected target six. See table 1.

Lineup Choice by Target Race (White). When the target was white (n=104), the frequency of incorrect responses to correct responses in the target-absent lineup was 30 (28.8%) and 74 (71.2%) respectively. When looking at choices made for each target in the target-absent lineup, 9 (8.7%) participants selected photo one, 1 (1.0%) selected photo two, 13 (12.5%) participants selected photo three, 5 (4.8%) participants selected photo five, and 2 (1.9%) participants selected photo six; no participants selected photo four. See table 1.

Lineup Choice by Target Race (Black). When the target was black, (n=101), the frequency of incorrect responses to correct responses in the target-absent lineup was 41 (40.6%) and 60 (59.4%). When looking at choices made for each target in the photo absent lineup, 9 (8.9%) participants selected photos one, two and five, 5 (5.0%) participants selected photo three,

6 (5.9%) participants selected photo four, and 3 (3.0%) participants selected photo six. See table

1.

Table 1. Target-Absent Photo Lineup Choices

Condition		Lineup Photo Choice						Overall Incorrect	Overall Correct
		1	2	3	4	5	6		
Overall	N	18	10	18	6	14	5	71	134
	(%)	(8.7)	(4.9)	(8.7)	(2.9)	(6.8)	(2.4)	(34.6)	(65.0)
White	N	9	1	13	0	5	2	30 (28.8)	74 (71.2)
	(%)	(8.7)	(1.0)	(12.5)		(4.8)	(1.9)		
Black	N	9	9	5 (5.0)	6	9	3	41 (40.6)	60 (59.4)
	(%)	(8.9)	(8.9)		(5.9)	(8.9)	(3.0)		

Note. Standard deviations appear in parenthesis following frequencies. Overall (n=205), White (n=104) and Black (n=101)

Familiarity

A one-way-between subjects ANOVA was conducted to compare the effect of familiarity

on identification decision in the target absent line-up and guilt perception in unfamiliar (target

not shown) and familiar (target shown) conditions. There was not a significant effect of

familiarity on identification decision at the $p<.05$ level between the two conditions [$F (1, 203) =$

.949, p=.331]. There was also not a significant effect of familiarity on guilt perception at the

$p<.05$ level between the two conditions [$F (1, 204) = 2.354$, p>.05]. See table 2.

Table 2. Effects of Familiarity on Lineup Choice and Guilt Perception.

	Unfamiliar	Familiar	df	F
Lineup Choice	.62 (.49)	.69 (.47)	1, 203	.949
Guilt Perception	1.55 (.50)	1.45 (.50)	1, 204	2.354

Note. Standard deviations appear in parenthesis following means.

First Impressions

A one-way between subjects ANOVA was conducted to compare the effect of first impressions on identification decisions in the target absent line-up. There was not a significant effect of first impression on identification decision at the p<.05 level between the three conditions [F (2, 202) = .587, p>.05]. See table 3.

Table 3. Effect of First Impressions on Lineup Choice (N=203)

	First Impression Information				
	Negative	Neutral	Positive	df	F
Lineup Choice	.61 (.49)	.64 (.48)	.70 (.46)	2, 202	.587

Note. Standard deviations appear in parenthesis following means.

A two-way factorial ANOVA was conducted to compare the effects of two independent variables (target race, first impressions) on guilt perception. Target race had two levels (white or black target) and first impressions had three levels (positive, neutral and negative information). All effects were statistically significant at the p<.05 level. The main effect for target race yielded an F ratio of [F (1, 194) = 11.783, p<.05], indicating that the effect for target race was statistically significant between white (M = 1.37, SD = .65) and black (M = 1.61, SD = .67) targets. There was a significant main effect of first impressions on guilt perception at the p<.05 level between the three conditions [F (2, 194) = 5.405, p<.05]. Post hoc comparisons using the Tukey HSD test indicated the mean score for the negative condition (M = 1.35, SD = .86) was significantly different from the positive condition (M = 1.63, SD = .79); however, the neutral condition (M = 1.49, SD = .77) did not significantly differ from the positive and negative conditions. There was no statistically significant interaction. See table 4.

Table 4.Two-Way Factorial ANOVA Comparing Target Race and First Impressions to Perception of Guilt

		Guilt Perception	df	F
Target Race	White	1.37 (.65)a	1, 194	11.783**
	Black	1.61 (.67)a		
First Impression	Negative	1.35 (.86)a	2, 194	5.405*
	Neutral	1.49 (.77)		
	Positive	1.63 (.79)a		

*Note. Standard deviations appear in parenthesis following means. * p < .05, ** p = .001*
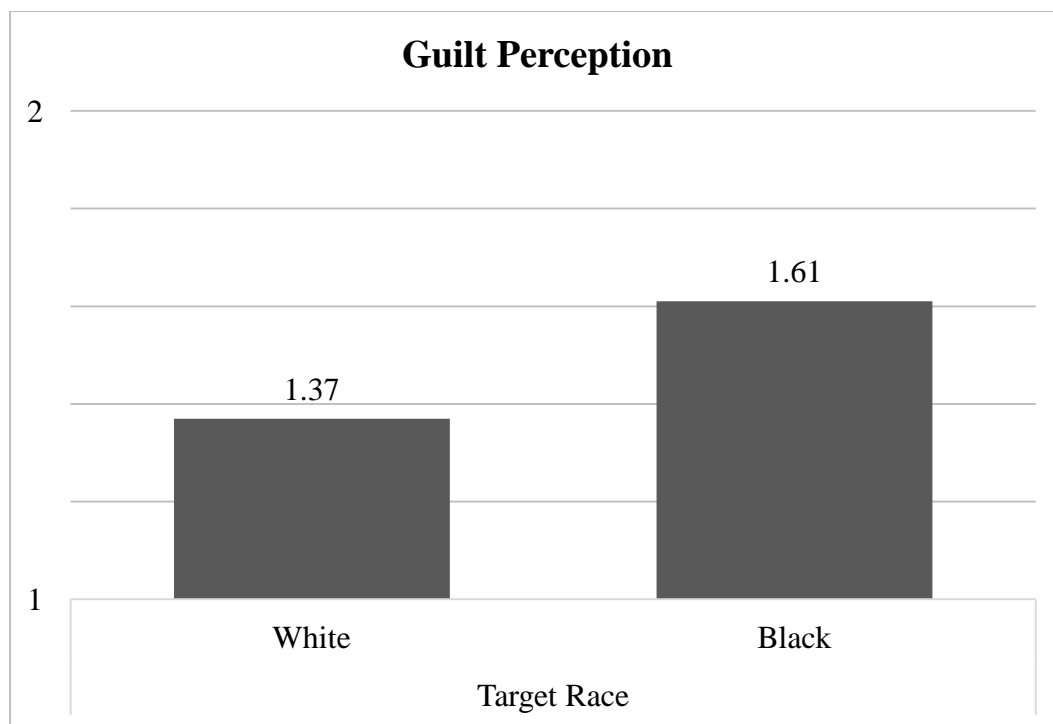

Figure 2. Effect of Target Race on Guilt Perception. Data labels indicate means.
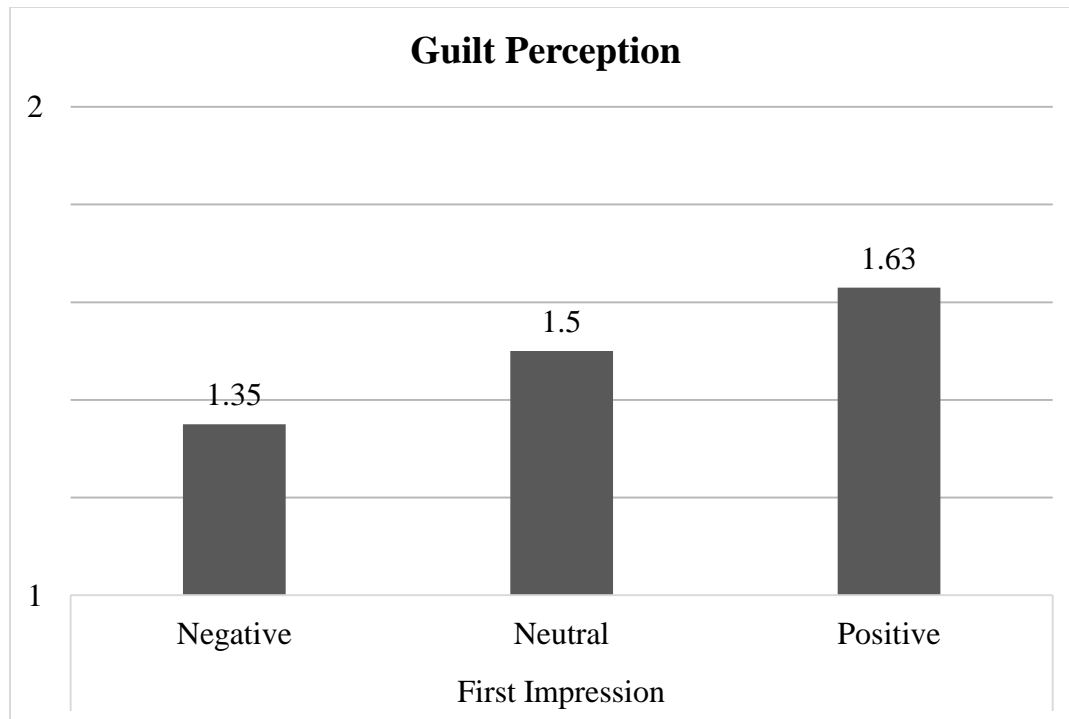
Figure 3. Effect of First Impressions on Guilt Perception. Data labels indicate means.

Confidence

A one-way-between subjects ANOVA was conducted to compare the effect of confidence on identification decision in the target absent line-up (incorrect or correct); guilt perception (target committed a crime or target is the victim of a crime); rated trustworthiness (not trustworthy, neutral and trustworthy); and whether the target was the same or a different race than the target. There was a significant effect between confidence and lineup choice at the $p<.05$ level [$F (1, 203) = 13.206$, $p<.05$] indicating that confidence was significantly different between incorrect ($M = 1.92$, $SD = .92$) and correct ($M = 2.37$, $SD = .80$) decisions in the target-absent lineup; see table 5. There was not a significant effect of confidence on guilt perception at the $p<.05$ level between the two conditions [$F (1, 203) = 1.058$, $p>.05$]; see table 6. There was not a significant effect of confidence on trustworthiness at the $p<.05$ level between the two conditions [$F (2, 202) = 1.297$, $p>.05$]; see table 7.

Table 5. One-way ANOVA Comparing The Effects of Confidence on Llineup Choice

	Lineup Choice			
	Incorrect	Correct	df	F
Confidence	1.92 (.92)	2.37 (.80)	1, 203	13.206*

*Note. Standard deviations appear in parenthesis following means. *p < .001*

Confidence in Lineup Choice

3

2.37

2

1.92

1

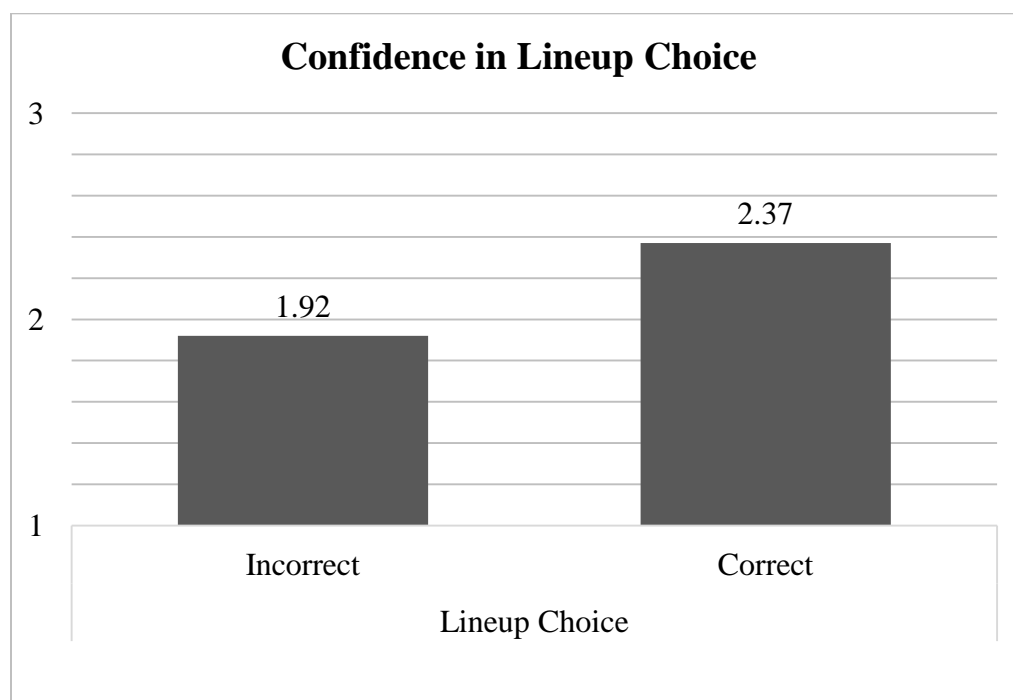Incorrect   Correct

Lineup Choice

Figure 4. Effect of Confidence on Lineup Choice. Data labels indicate means.

Table 6. One-way ANOVA Comparing the Effects of Confidence on Guilt Perception

	Guilt Perception			
	C. Crime	Victim	df	F
Confidence	2.27 (.88)	2.15 (.86)	1, 203	1.058

Note. Standard deviations appear in parenthesis following means.

Table 7. One-way ANOVA Comparing the Effects of Confidence on Trustworthiness

	Target Trustworthiness				
	Untrustworthy	Neutral	Trustworthy	df	F
Confidence	2.19 (.93)	2.15 (.86)	2.40 (.82)	2, 202	1.297

Note. Standard deviations appear in parenthesis following means.

To determine if confidence and correct identifications in the target-absent lineup differed based on whether the target was the same, or a different, race as the target the file was divided based on congruence/incongruence between the race of the target and participant. There was not a significant effect of confidence when the target was a different race than the participant in the target-absent lineup [F (1, 54) = 3.150, p>.05]. However, a significant effect of confidence was found when the target was the same race as the participant in the target-absent lineup [F (1, 147) = 10.708, p<.05] between incorrect (M = 1.85, SD = .91) and correct (M = 2.34, SD = .83) decisions. See table 8.

Table 8. Comparing the Effects of Confidence on Lineup Choice When the Target is the Same or a Different Race than the Participant

		Lineup Choice			
		Incorrect	Correct	df	F
Confidence	Target Race Incongruent	2.04 (.96)	2.44 (.72)	1, 54	3.150
	Target Race Congruent	1.85 (.91)	2.34 (.83)	1, 147	10.708*

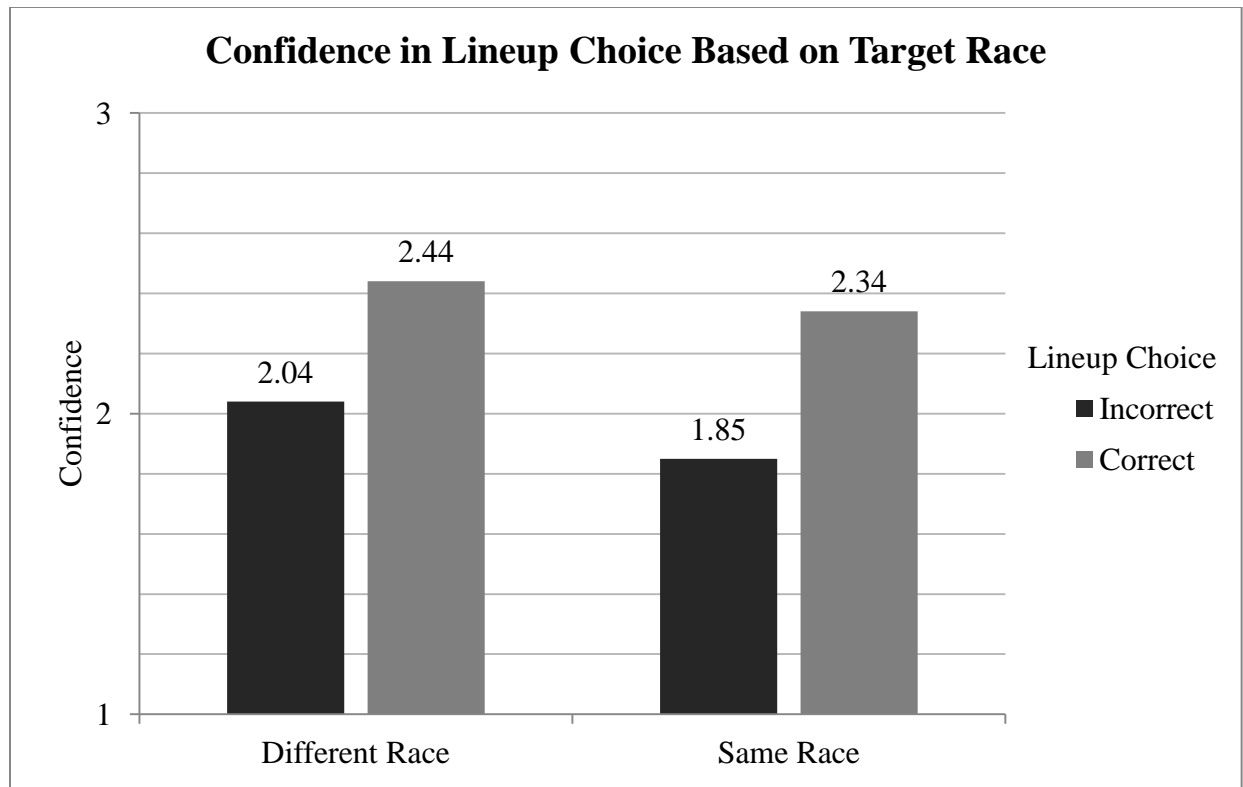*Note. Standard deviations appear in parenthesis following means. *p <.005*

Figure 5. Effect of Confidence on Lineup Choice When the Target is the Same or a Different Race than the Participant. Data labels indicate means.

Manipulation Checks

Manipulation checks were conducted to determine there were no differences between the targets used in the study and lineup choice, perceptions of trust and guilt, as well as between familiarity and perception conditions.

A Univariate ANOVA was used to determine if differences exist between the individual targets used on participant ratings of trustworthiness, perceived guilt and lineup choice (see table 9). A significant difference was found between each target used in the study and perceptions of trustworthiness [$F_{(3, 202)} = 7.786$, $p<.05$]. Post hoc comparisons using the Tukey HSD test indicated the mean score for target one (M = 1.75, SD = .73) was significantly different from target three (M = 2.20, SD = .53) and target four (M = 2.16, SD = .58); however, target one did

not significantly differ from target two (M = 1.73, SD = .72). The mean score for target two was also significantly different from targets three and four. A significant difference was found between each target used in the study and perceptions of guilt [F (3, 202) = 5.384, p<.05]. Post hoc comparisons using the Tukey HSD test indicated the mean score for target two (M = 1.33, SD = .47) was significantly different from targets three (M = 1.61, SD = .49) and four (M = 1.66, SD = .48). However, there were no significant differences between any other targets. A significant difference was also found between each target used in the study and lineup choice in the target-absent line up [F (3, 201) = 4.922, p<.05]. Post hoc comparisons using the Tukey HSD test indicated the mean score for target one (M = .57, SD = .50) was significantly different from target two (M = .87, SD = .35); however, target one did not significantly differ from targets three and four. Target two was significantly different from targets three (M = .61, SD = .49) and four (M = .57, SD = .50).

Table 9. Manipulation Check to Determine Differences in Participants' Ratings of Trustworthiness, Guilt and Lineup Choice for Each Individual Target

| | Target | | | | | |
| | White | | Black | | | |
	1	2	3	4	df	F
Trustworthiness	1.75 (.73)^a	1.73 (.72)^b	2.20 (.53)^{ab}	2.16 (.58)^{ab}	3, 202	7.786**
Guilt	1.42 (.50)	1.33 (.47)^a	1.61 (.49)^a	1.66 (.48)^a	3, 202	5.384*
Lineup Choice	.57 (.50)^a	.87 (.35)^{ab}	.61 (.49)^b	.57 (.50)^b	3, 201	4.922*

Note. Standard deviations appear in parenthesis following means.*p<.005, **p<.001.
Target 1and 2 perceived as less trustworthy than targets 3 and 4 *[F (3, 202) = 7.786, p<.05].*
Target 2 perceived as guiltier than targets 3 and 4 [F (3, 202) = 5.384, p<.05].
Target 1 had less correct identifications in the target absent lineup than target 2 but no differences between targets 3 and 4. Target 2 had more correct identifications than targets 3 and 4 [F (3, 201) = 4.922, p<.05].
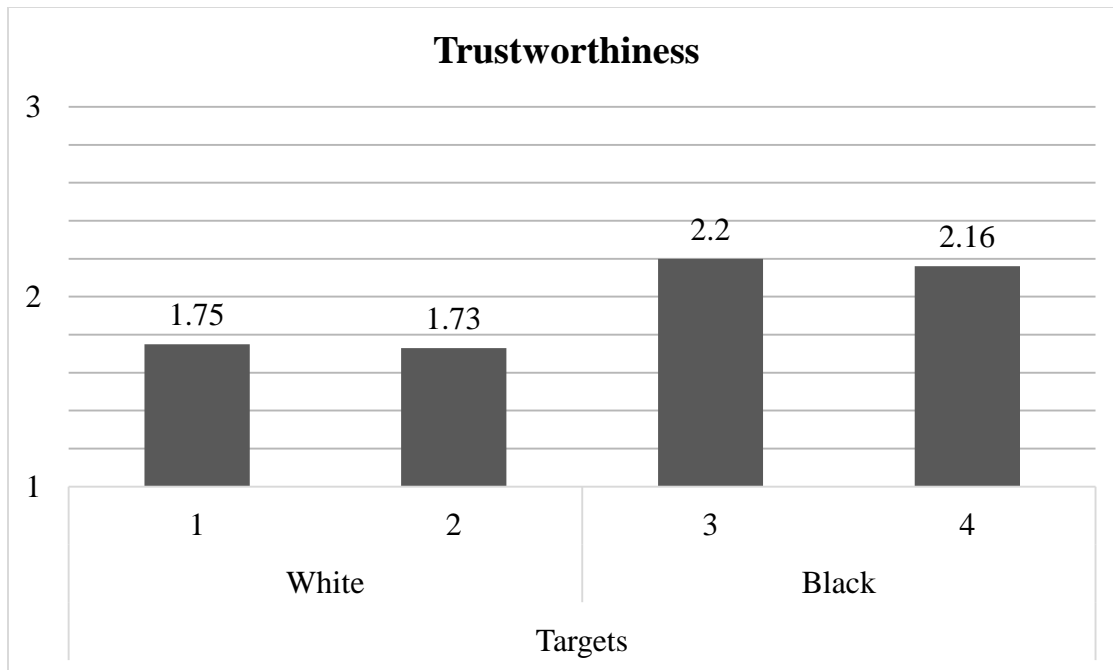
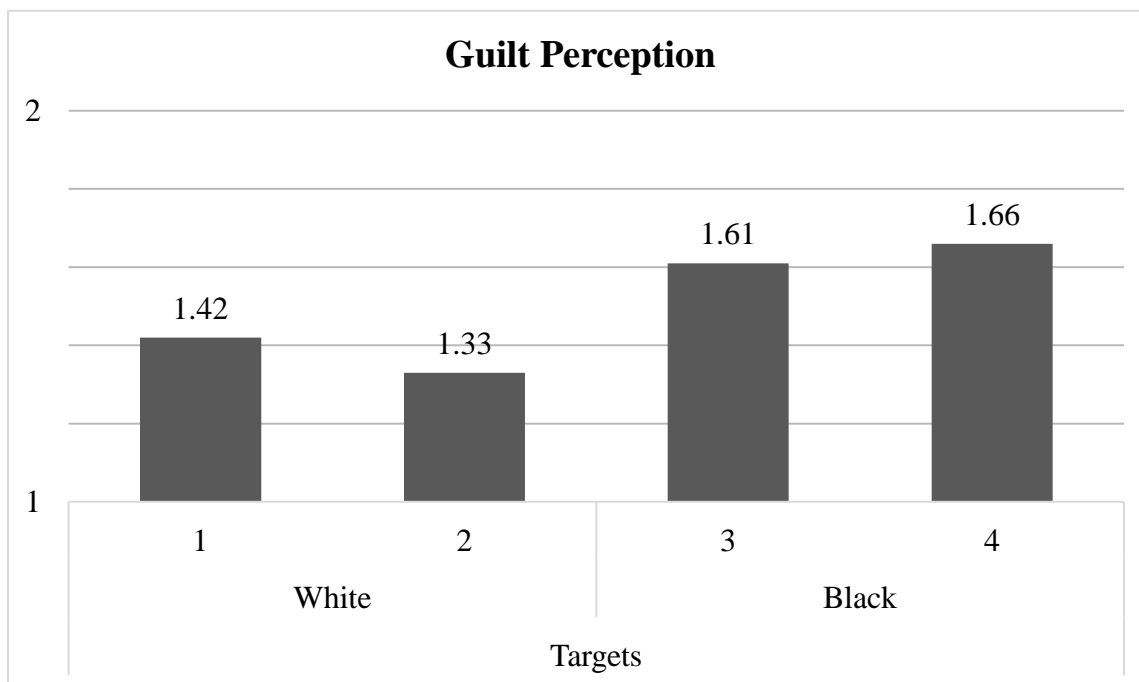*Figure 6. Individual Targets Ratings of Trustworthiness. Data labels indicate means.*

Figure 7. Individual Targets Perception of Guilt. Data labels indicate means.
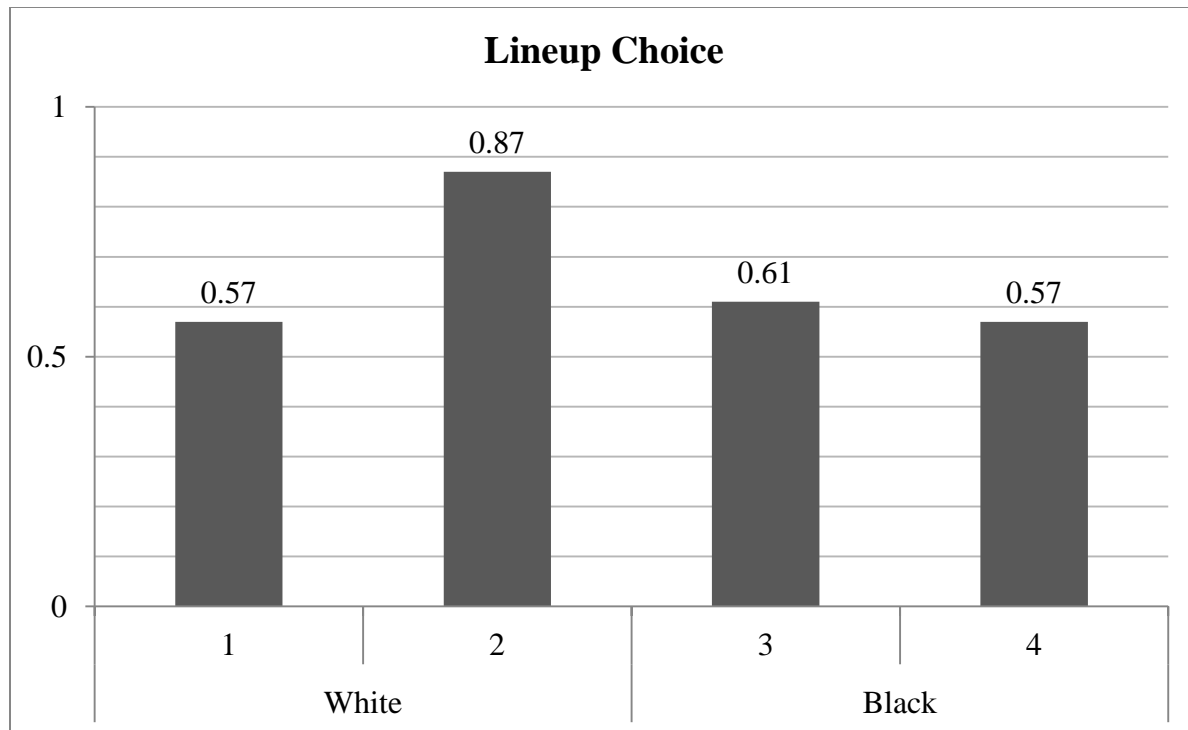
Figure 8. Lineup Choice for Individual Targets. Data labels indicate means.

A one-way ANOVA was used to determine the effects of familiarity conditions (unfamiliar or familiar) on target ratings of trustworthiness, guilt perception, and lineup choice. A significant difference was not found between familiarity conditions (unfamiliar or familiar) and trustworthiness [$F (1, 204) = .010$, p=.919], guilt [$F (1, 204) = 2.354$, p=.127], or lineup choice [$F (1, 203) = .949$, p=.331]. See table 10.

Table 10. Manipulation Check to Determine Differences in Participants' Ratings of Trustworthiness, Guilt and Lineup Choice Depending on Familiarity Condition

	Familiarity			
	Unfamiliar	Familiar	df	F
Trustworthiness	1.95 (.66)	1.96 (.70)	1, 204	0.010
Guilt Perception	1.55 (.50)	1.45 (.50)	1, 204	2.354

Lineup Choice	.62 (.49)	.69 (.47)	1, 203	0.949

Note. Standard deviations appear in parenthesis following means.

A one-way ANOVA was used to determine the effects of first impressions conditions (negative, neutral or positive) on target ratings of trustworthiness, guilt perception, and lineup choice (see table 11). A significant difference was found between first impression conditions and trustworthiness [F (2, 203) = 4.163, p<.05]. Post hoc comparisons using the Tukey HSD test indicated the mean score for negative first impressions (M = 1.75, SD = .65) was significantly different from positive first impressions (M = 2.07, SD = .69); however, neutral first impressions (M = 2.01, SD = .66) did not significantly differ from negative or positive first impressions. A significant difference was also found between first impression conditions and guilt [F (2, 203) = 5.194, p<.05]. Post hoc comparisons using the Tukey HSD test indicated the mean score for negative first impressions (M = 1.35, SD = .48) was significantly different from positive first impressions (M = 1.63, SD = .49); however, neutral first impressions (M = 1.50, SD = .50) did not significantly differ from negative or positive first impressions. A significant difference was not found between first impression conditions and lineup choice [F (2, 202) = .587, p>.05].

Table 11. Manipulation Check to Determine Differences in Participants' Ratings of Trustworthiness, Guilt and Lineup Choice Depending on First Impressions Information

	First Impressions				
	Negative	Neutral	Positive	df	F
Trustworthiness	1.75 (.65)a	2.01 (.66)	2.07 (.69)a	2, 203	4.163*
Guilt Perception	1.35 (.48)a	1.50 (.50)	1.63 (.49)a	2, 203	5.194*
Lineup Choice	0.61 (.49)	0.64 (.48)	0.70 (.46)	2, 202	0.587

*Note. Standard deviations appear in parenthesis following means.*p<.05
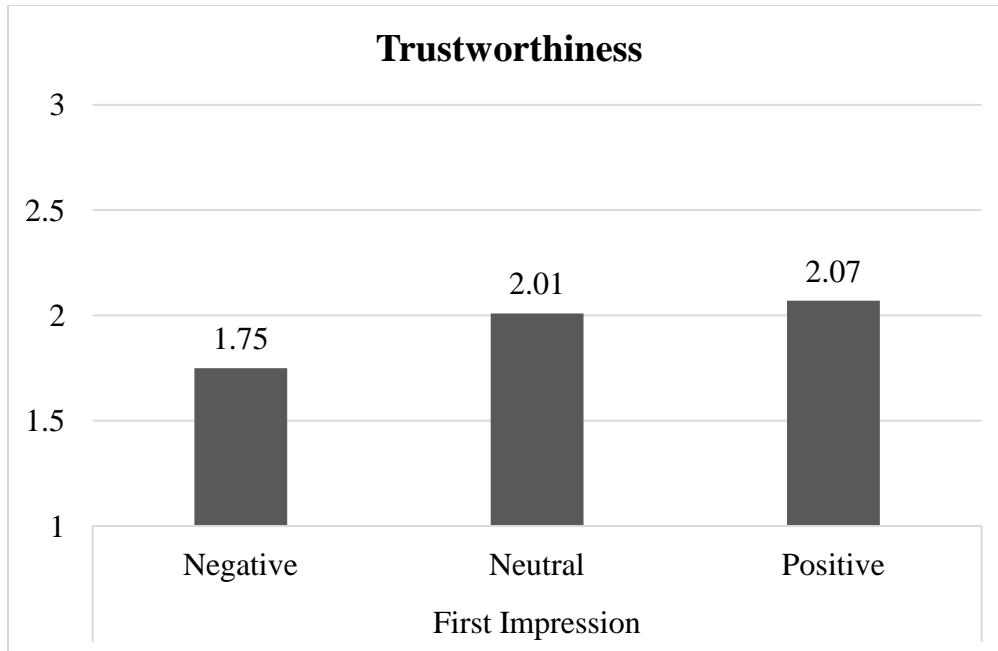
Trustworthiness

Figure 9. Effects of First Impressions on Trustworthiness. Data labels indicate means.
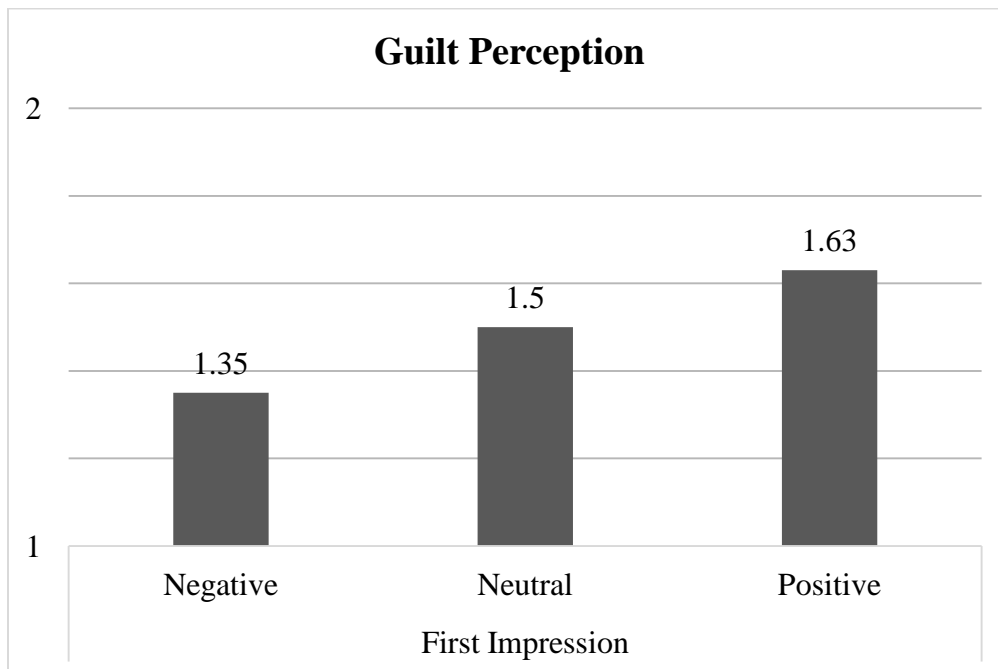
Guilt Perception

Figure 10. Effects of First Impressions on Guilt Perception. Data labels indicate means.

Discussion

The present study found that familiarity did not have an effect on accuracy in the target-absent lineup or the guilt perception of the target. There was also not a significant effect of first impression on accuracy in the target-absent lineup.

There was a significant effect of both target race and first impressions on guilt perception. It was found that white targets were more likely to be perceived as having committed a crime and black targets were more likely to be perceived as being the victim of a crime. However, this finding was the opposite of what was hypothesized. This may suggest a new direction in relation to the literature surrounding the relationship between race and perceived criminality; however, the manipulation check may provide an alternative explanation (see discussion below). In relation to first impressions, providing participants with negatively biasing information led participants to perceive the target as more likely to have committed a crime. Conversely, providing targets with positively biasing information led participants to perceive the target as more likely to be the victim of a crime. This suggests that information eyewitnesses receive about targets prior to making identification decisions, whether it is by the media, within the court system or through neighborhood banter, may bias whether or not an individual believes the target committed the crime. This finding is extremely important for eyewitness literature as this phenomenon may be associated with false-positive identifications and subsequent wrongful convictions. This is consistent with, and provides further evidence for, Baker and colleagues' (2013) research indicating that providing information to participants about targets can lead to false-positive identifications.

Participants self-reported rating of confidence was not related to targets' perceived ratings of trustworthiness or guilt; however, there was a significant association between confidence and lineup choice. Confidence was higher when participants had correct identifications in the target-absent lineup; this result was statistically significant. The literature indicates that confidence and accuracy are correlated dependent on the time of the eyewitness identification with identifications made earlier being more correct. This finding supports the literature such that, in the present study, eyewitness identifications were made soon after participants were introduced to the target and their scores indicated high confidence had a positive effect on being correct in the target-absent lineup. It is important to recognize however, that very little time elapsed between participants were given the diner scenario and making an eyewitness identification. Furthermore, no crime (or any indication of a crime) occurred in the video stimuli presented to participants in the study. It cannot be concluded that the same result would be found if participants were exposed to a scenario in which a crime actually occurs.

Furthermore, the relationship between confidence and lineup choice was related to cross-race effects was also investigated. The present study did find support for the cross-race effect on confidence and lineup choice. The relationship between confidence and correct eyewitness identification was highest, and significant, when the target was the same race as them. This relationship was not significant when the target was a different race than the participant. These findings are consistent with the literature (Barzut & Zdravković, 2013; Wright & Stroud, 2003; Meissner & Brigham, 2001).

Manipulation Checks

The results from the manipulation checks indicate that there was a significant effect of the individual targets used in the study and participants' perceptions of trustworthiness and guilt depending on the targets race. The results indicate that both targets one and two were significantly different from targets three and four; however, targets one and two did not differ significantly from one another on perceptions of trustworthiness. This indicates that the white targets used in the present study were perceived as less trustworthy than the black targets. In relation to perceptions of guilt, target two was significantly different from targets three and four such that the white target was perceived as more likely to commit a crime and the black targets were perceived as more likely to be the victims of a crime. There were not any significant differences between any of the other targets. Furthermore, there was also a significant difference between the individual targets used and lineup choice in the target-absent lineup. Target one was significantly different from target two such that target two was more likely to have correct rejections in the target-absent lineup in comparison to target one. Target two was also significantly different from targets three and four such that target two was more likely to have correct rejections in the target-absent lineup.

The manipulation checks found no support for the effect of familiarity condition on participants' perceptions of targets' trustworthiness, guilt perception or lineup choice. However, the results from the manipulation check indicate that there was a significant effect of first impression information and participants' perceptions of trustworthiness and guilt depending on the first impression information given about the target. Participants provided with positive information about the target perceived the target as more trustworthy; conversely, participants provided with negative information about the target perceived the target as less trustworthy. The difference between providing positive or negative information about the targets was also

significantly different from one another in relation to participants' trustworthiness perception of the targets; however, the positive and negative information conditions did not differ significantly from the neutral (control) condition. Furthermore, participants provided with positive information about the target perceived the target as more likely to be the victim of a crime; conversely, participants provided with negative information about the target perceived the target as more likely to have committed a crime. . The difference between providing positive or negative information of the targets was also significantly different from one another in relation to participants' guilt perception about the targets; however, the positive and negative information conditions did not differ significantly from the neutral (control) condition. Based on the findings in the present study and the results of the manipulation checks there may be a potential interaction between guilt perception and perceived trustworthiness for individual targets as it relates to correct rejections in the target-absent lineup. It may also suggest that participants' perceived perceptions of targets' guilt and/or trustworthiness trump the CRE phenomenon. Future studies are warranted to draw clear conclusions.

Limitations

The present study presented targets with an ambiguous video of targets jogging on a residential street. Participants were not witnesses to an actual crime; it cannot be certain if the same effects would be demonstrated if participants were to view a scenario in which a crime does occur. Another limitation in this study is that one of the targets used was identified with being significantly different from the others on a number of variables. It is speculated that this may be related to why some hypotheses demonstrated the opposite effect of what was expected based on the literature. Furthermore, the manipulation checks for individual targets, where significant, all found an effect of target two on multiple outcome variables. This may indicate

that target two stood out to participants in some way and may have been an outlier in comparison to the other targets used in the study. It is recommended that future studies conduct careful pilot studies to obtain ratings of attractiveness, competence, trust, guilt perception, and other ratings of interest for individual targets prior to exposing them to experimental manipulation. This also suggests that perceptions of guilt, one of the main factors being investigated, may not be a function of race but perhaps that certain facial expressions or physical characteristics are perceived as guiltier, or more dangerous, than others are. This effect has been documented in research with African-American targets (Knuycky, Kleider, & Cavarak, 2014; Dixon & Maddox, 2005; Kleider, Cavrak, & Knuycky, 2012; Blair, Judd, & Chapleau, 2004). More research in this area is warranted. It may be useful to conduct research with composite faces in order to manipulate the emotional expressions (Barzut & Zdravković, 2013; Baker, ten Brinke, & Porter, 2013) of the targets used in the study. It may also be beneficial to use composite faces to manipulate target faces to have stereotypically Black features (Knuycky, Kleider, & Cavarak, 2014; Dixon & Maddox, 2005; Kleider, Cavrak, & Knuycky, 2012; Blair, Judd, & Chapleau, 2004; Marcon, Meissner, & Malpass, 2008) or not to see if that also has an effect on guilt perception, confidence and/or accuracy in relation to eyewitness identifications.

References

Baker, A., ten Brinke, L., & Porter, S. (2013). The face of an angel: Effect of exposure to details of moral behavior on facial recognition memory. *Journal of Applied Research in Memory and Cognition, 2*(2), 101-106. doi:10.1016/j.jarmac.2013.03.004

Barzut, V., & Zdravković, S. (2013). Discrimination of faces of the same and other race and gender modulated by familiarity. *Psihologija, 46*(1), 45-59. doi:10.2298/PSI1301045B

Blair, I. V., Judd, C. M., & Chapleau, K. M. (2004). The influence of Afrocentric facial features in criminal sentencing. *Psychological Science, 15*, 674-679. doi:10.1111/j.0956-7976.2004.00739.x

Brewer, N., & Palmer, M. A. (2010). Eyewitness identification tests. *Legal and Criminological Psychology, 15*, 77-96. doi:10.1348/135532509X414765

Brewer, N., & Wells, G. L. (2006). The Confidence–Accuracy Relationship in Eyewitness Identification: Effects of Lineup Instructions, Foil Similarity, and Target-Absent Base Rates. *Journal of Experimental Psychology: Applied, 12*(1), 11-30. doi:10.1037/1076-898X.12.1.11

Department of Justice. (2015, January 7). *FPT Heads of Prosecutions Committee Report on hte Working Group on the Prevention of Miscarriages of Justice*. Retrieved from Department of Justice: http://www.justice.gc.ca/eng/rp-pr/cj-jp/ccr-rc/pmj-pej/p5.html

Dixon, T. L., & Maddox, K. B. (2005). Skin tone, crime news, and social reality judgments: Priming the stereotype of the dark and dangerous black criminal. *Journal of Applied Social Psychology, 35*, 1555-1570.

Garrett, B. (2011). *Convicting the innocent: Where criminal prosecutions go wrong.* Cambridge, MA: Harvard University Press. doi:10.4159/harvard.9780674060982

Harland-Logan, S. (2015). *Anthony Hanemaayer*. Retrieved from The Association in Defence of the Wrongly Convicted: http://www.aidwyc.org/cases/historical/anthony-hanemaayer/

Huff, C., Rattner, A., & Sagarin, E. (1986). Guilty until Proved Innocent: Wrongful Conviction and Public Policy. *Crime and Delinquency, 32*(4), 518.

Innocence Project. (n.d.). *Eyewitness Misidentification*. Retrieved from Innocence Project: http://www.innocenceproject.org/causes-wrongful-conviction/eyewitness-misidentification

Ito, T. A., & Urland, G. R. (2003). Race and gender on the brain: Electrocortical measures of attention to the race and gender of multiply categorizable individuals. *Journal of Personality and Social Psychology, 85*, 616-626.

Kleider, H. M., Cavrak, S. E., & Knuycky, I. R. (2012). Looking like a criminal: Stereotypical Black facial features promote face source memory error. *Memory & Cognition, 40*, 1200-1213. doi:10.3758/s13421-012-0229-x

Knuycky, L. R., Kleider, H. M., & Cavarak, S. E. (2014). Line-up misidentifications: When being 'prototypically black' is perceived as criminal. *Applied Cognitive Psychology, 28*, 39-46. doi:10.1002/acp.2954

Krug, K. (2007). The relationship between confidence and accuracy: Current thoughts of the literature and a new area of research. *Applied Psychology in Criminal Justice, 3*, 7-41.

Lindsay, D. S., Read, J. D., & Sharma, K. (1998). Accuracy and confidence in person identification: The relationship is strong when witnessing conditions vary widely. *Psychological Science, 9*, 215-218. doi:10.1111/1467-9280.00041

Lindsay, R. C., & Pozzulo, J. D. (1999). Sources of eyewitness identification error. *International Journal of Law and Psychiatry, 22*(3-4), 347-360.

Macrae, C. N., & Bodenhausen, G. V. (2000). Social cognition: Thinking categorically about others. *Annual Review of Psychology, 51*, 93-120.

Makin, K. (2009, March 13). *Man accused in sex attack to be acquitted*. Retrieved from The Globe and Mail: http://www.theglobeandmail.com/news/national/man-accused-in-sex-attack-to-be-acquitted/article675110/

Marcon, J. L., Meissner, C. A., & Malpass, R. S. (2008). Cross-race effect in eyewitness identification.

Meissner, C. A., & Brigham, J. C. (2001). Thirty years of investigating the own-race bias in memory for faces: A meta-analytic review. *Psychology, Public Policy, & Law, 7*, 3-35. doi:10.1037//1076–8971.7.1.3

Narby, D. J., Cutler, B. R., & Penrod, S. (1996). The effects of witness, target, and situational factors on eyewitness identifications. In S. L. Sporer, R. S. Malpass, & G. Koehnken (Eds.), *Psychological issues in eyewitness identification* (pp. 23-52). Mahwah, NJ: Lawrence Erlbaum Associates.

O'Neill Shermer, L., Rose, K. C., & Hoffman, A. (2011). Perceptions and Credibility: Understanding the Nuances of Eyewitness Testimony. *Journal of Contemporary Criminal Justice, 27*(2), 183-203. doi:10.1177/1043986211405886

Porter, S., ten Brinke, L., & Gustaw, C. (2010). Dangerous decisions: the impact of first impressions on trustworthiness on the evaluation of legal evidence and defendant culpability. *Psychology, Crime & Law, 16*(6), 477-491. doi:10.1080/10683160902926141

Public Prosecution Service of Canada. (2011, September 13). *Chapter 5 – Eyewitness Identification and Testimony*. Retrieved from Public Prosecution Service of Canada: http://www.ppsc-sppc.gc.ca/eng/pub/ptj-spj/ch5.html

R. v. Hanemaayer, C48928 ONCA 580 (CanLII 2008). Retrieved from http://canlii.ca/t/2065m

Reinitz, M. T., Séguin, J. A., Peria, W., & Loftus, G. R. (2012). Confidence-accuracy relations for faces and scenes: Roles of features and familiarity. *Psychonomic Bulletin and Review, 19*, 1085-1093. doi:10.3758/s13423-012-0308-9

Sherrin, C. (2007). *Comment on the Report on the Prevention of Miscarriages of Justice.* University of Western Ontario.

Sporer, L. (1993). Eyewitness identification accuracy, confidence, and decision-times in simultaneous and sequential lineups. *Journal of Applied Psychology, 78*, 22-33.

The Association in Defence of the Wrongly Convicted. (2015). *About Us*. Retrieved from The Association in Defence of the Wrongly Convicted: http://www.aidwyc.org/about/

Wells, G. (1978). Applied eyewitness-testimony research: System variables and estimator variables. *Journal of Personality and Social Psychology,, 36*, 1546-1557.

Wells, G. L., & Murray, D. M. (1984). Eyewitness confidence. In G. L. Wells, & E. F. Loftus (Eds.), *Eyewitness testimony: Psychological perspectives* (pp. 362-384). New York: Cambridge University Press.

Wells, G. L., Small, M., Penrod, S. D., Malpass, R. S., Fulero, S. M., & Brimabombe, C. A. (1998). Eyewitness identification procedures: Recommendations for lineups and photospreads. *Law and Human Behavior, 22*, 603-647.

Wilson, J., Hugenberg, K., & Bernstein, M. J. (2013). The cross-race effect and eyewitness identification: How to improve recognition and reduce decision errors in eyewitness situations. *Social Issues and Policy Review, 7*(1), 83-113.

Wixted, J. T., Mickes, L., Clark, S. E., Gronlund, S. D., & Roediger III, H. L. (2015). Initial Eyewitness Confidence Reliably Predicts Eyewitness Identification Accuracy. *American Psychologist, 70*(6), 515-526. doi:10.1037/a0039510

Wright, D. B., & Stroud, J. N. (2003). Age differences in lineup identification accuracy: people are better with their own age. *Law and human behavior, 26*(6), 641-654.

Yu, M., Saleem, M., & Gonzalez, C. (2014). Developing trust: First impressions and experience. *Journal of Economic Psychology, 43*, 16-29. doi:10.1016/j.joep.2014.04.004

Appendix A. Demographics Questionnaire

1. What is your Gender? _____

2. What is your Age? _____

3. How many people lived in your household when you lived at home? _____

4. What is your occupation? _____

5. Please state what your household income was when you were living in your guardians'

    house.

    i. $20,000 or lower

    ii. $20,001 -$35,000

    iii. $35,001- $50,000

    iv. $50,001- $70,000

    v. $70,001- $90,000

    vi. $90,001 and above.

6. What socioeconomic status do you consider yourself from?

    i. Low

    ii. Middle

    iii. High

7. Where are you from? _____

8. What is your ethnicity? _____

9. How did you learn of this experiment?

    i. Sona System

    ii. PowerPoint in Class

    iii. Social Media

    iv. Dr. Tanya Peckmann

    v. Other _____

Appendix B. Judgment and Confidence Likert-Scales

This person is trustworthy.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Disagree or Agree	Somewhat Agree	Agree	Strongly Agree

This person is competent.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Disagree or Agree	Somewhat Agree	Agree	Strongly Agree

This person is attractive.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Disagree or Agree	Somewhat Agree	Agree	Strongly Agree

This person committed a crime.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Disagree or Agree	Somewhat Agree	Agree	Strongly Agree

This person is the victim of a crime.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat Disagree	Neither Disagree or Agree	Somewhat Agree	Agree	Strongly Agree

How confident are you that you can identify the individual you saw running today?

1	2	3	4	5	6	7
Not Confident			Neutral			Very Confident

Appendix C. Targets

Targets 1 and 2.
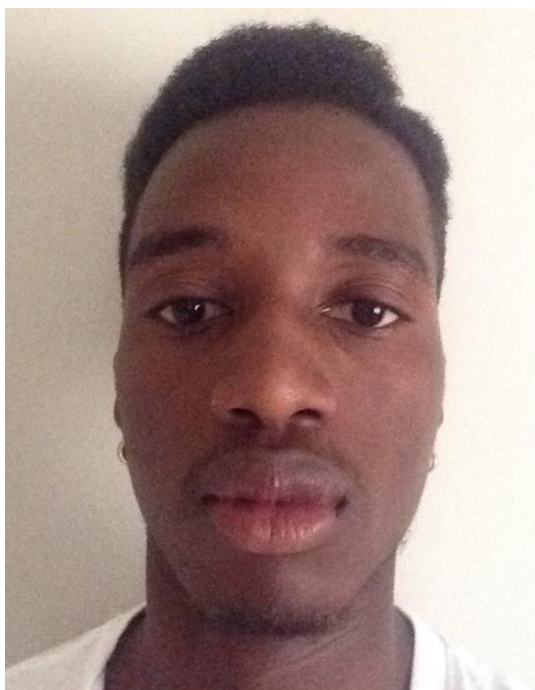
Targets 3 and 4.

Appendix D. Target-Absent Lineups

Simultaneous lineup for targets 1 and 2.

Simultaneous lineup for targets 3 and 4.