SKIN TONE OF TARGETS, LINEUP TYPE, AND CONFIDENCE LEVELS IN

CROSS-RACIAL IDENTIFICATION

A Senior Honors Thesis

By

JESSICA LYNNE WILLIAMSON

Submitted to the Office of Honors Programs & Academic Scholarships Texas A&M University In partial fulfillment of the requirements of the

UNIVERSITY UNDERGRADUATE RESEARCH FELLOWS

APRIL 2002

Group: Psychology II

SKIN TONE OF TARGETS, LINEUP TYPE, AND CONFIDENCE LEVELS IN

CROSS-RACIAL IDENTIF

A Senior Honors Th-

Bу

JESSICA LYNNE WILL

526-C

Submitted to the Office of Hoi & Academic Scholarships Texas A&M University In partial fulfillment of the requirements of the

UNIVERSITY UNDERGRADUATE RESEARCH FELLOWS

Approved as to style and content by:

Steven Smith (Fellows Advisor)

Hdwasd

Edward A. Funkhouser (Executive Director)

APRIL 2002

Group: Psychology II

ABSTRACT

Skin tone of targets, lineup type, and confidence levels in cross-racial identification.

(April 2001)

Jessica Lynne Williamson Department of Liberal Arts Texas A&M University

Fellows Advisor: Steven Smith Department of Psychology

The current experiment investigated facial recognition memory for own and other-race faces. Two variations (light-skin and dark-skin) were presented for the Black targets. The purpose of this experiment was to observe the effect of skin variations of Black targets, lineup type (target present vs. target absent), and confidence levels for identifications upon a White witnesses' memory. Ten white males therefore viewed a video staged event containing three male targets. The three targets consisted of a White male, Light-skin Black male, and Dark-skin Black male. After a 2-day interim, the male participants completed a facial recognition test consisting of six lineups each containing six color mug shots. A lineup type (target-present vs. target-absent) was presented for each racial category: White target-present; White target-absent; Light-skin Black targetpresent; Light-skin Black target-absent; Dark-skin Black target-present; Dark-skin target-absent. The hit rates (correct identification) and confidence level of a choice were measured for each lineup. An other-race effect was not established in this study. However, a significant difference occurred between the mean hit rates (correct identifications) for Dark-skin Black target-present lineups (DBpresent) and the mean hits

iii

for Dark-skin Black target-absent (DBabsent) lineups. This suggests that the darker the skin tone of a Black target, the less likely a White eyewitness is to identify the correct target in a target-present lineup. No other significant differences between groups were found.

For my mom, who serves as a vast resource of knowledge and spiritual guidance; she is my "rock of Gibraltar"; and for my dad, who never ceases to motivate me, constantly reminding me that perseverance, persistence, and patience will see you through the rough patches in life.

v

ACKNOWLEDGEMENTS

Much appreciation is extended to Jon Juzzini whose assistance with the statistical analyses and editing were without a doubt instrumental in the completion of this manuscript. In addition, I would like to thank Megan Mack and Terene Sudds for their assistance in recruiting the targets shown in both of the videotapes.

vi

TABLE OF CONTENTS

ABSTRACT	iii
DEDICATION	v
ACKNOWLEDGEMENTS	vi
TABLE OF CONTENTS	vii
LIST OF TABLES	viii
INTRODUCTION	1
OBJECTIVE	4
METHOD	5
Participants Design Procedure	5 5 6
RESULTS	8
DISCUSSION	10
CONCLUSION	12
REFERENCES	13
APPENDIX	16
Identification test	16
Questionnaire	22
VITA	25

Page

LIST OF TABLES

TABI	LE	Page
1	Mean Hits of Identifications in Lincups	23
2	Mean Confidence Levels of Choices in Lineups	24

INTRODUCTION

Cross-racial identification studies, over the past 20 years, have examined the other-race effect, a phenomenon in which members of one race perform better when identifying own-race faces, as compared to other-race faces (Meissner & Brigham, 2001; Shapiro & Penrod, 1986; Wells & Olson, 2001). Few of these studies have examined the effects of Whites identifying Black faces of varying physical characteristics, especially in respect to skin tone, which is a salient feature among the encoding strategies of Black Americans (Neal & Wilson, 1989). The lack of variation in these studies can create biased, non-representative samples, inflating the prevalence of the other-race effect (Wells & Olson, 2001).

The prominence of skin color within the Black community is evident through colloquial terms specified for certain skin complexions (e.g. high-yellow, blue-black) (Coard, Breland, & Raskin, 2001). For Black Americans, the complexion of one's skin tone can impact various facets of their lives, ranging from personal (e.g. self-concept, self-esteem) to professional (e.g. employment discrimination) (Jones, 2000).

Park & Rothbart (1982) explored the problems of in-groups perceiving similarities among out-groups, demonstrating that more variances exist within groups than between groups. Their research on the out-group homogeneity effect provides an empirical basis for the influence of perceptions upon memory. Applying this theory to cross-racial identification, one might be able to further understand the other-race effect,

This thesis follows the style and format of the Journal of Applied Psychology.

and how members of one race attribute broad similarities to other-race faces (i.e. outgroup faces).

Bigler, Jones, and Lobliner (1997) found that the use of biologically-based groups, such as skin tone or hair color, can reduce the intergroup bias in Black children. Based upon these findings, the objective of the current research is to examine whether varying the skin complexion of Black targets (i.e. a biologically-based group) can influence the recall of White witnesses for Black adult faces.

In this study, targets were categorized as follows: White, Light-skin Black, and Dark-skin Black. The facial recognition test measured hit rates (i.e. correct identifications and correct rejections) and confidence levels for two lineup types (target present, target absent). The confidence levels were measured due to the credibility that judges instruct jurors to place upon a witness' confidence levels. Neil v. Biggers (1971) explicitly states that the confidence of an eyewitness should be regarded as a reliable measure of accuracy in judicial rulings. However, the empirical literature notes several inherent problems for using confidence as a measure of accuracy of identification (Bothwell, Brigham, & Deffenbacher, 1987; Luus & Wells, 1994; Wells, 1993; Wells & Lindsay, 1985).

The lineups were simultaneous, consisting of six frontal mug shots per lineup. The poses of the mug shots were in the traditional frontal position. The frontal view at encoding and identification is intended to minimize impairments in recall (Ayuk, 1990). Although it has been found that sequential lineups (in which one face is presented at a time) reduce false identifications by relying on relative-judgments (Lindsay & Wells,

1985; Wells, 1993), it is more ecologically valid to use simultaneous lineups. In real life situations, police investigators use simultaneous lineups more often. The lineups consisted of similar faces (fillers). This is a protective measure employed in police lineups in which the investigators are unsure of the certainty of the suspect's guilt and must provide fillers to protect the suspect from a false identification (U.S. Department of Justice, 1999; Wells, Rydell, & Seelau, 1993).

OBJECTIVE

This experiment seeks to examine the effects of skin tone variations of Black targets and lineup types on the ability of White cycwitnesses to recall. The participants' confidence levels were measured in order to assess the effects of skin tone upon confidence. The results of this experiment might shed some new insight in cross-racial identification studies, revealing the ways in which memory can be impaired for White eyewitnesses identifying Black targets.

METHOD

Participants

Eight White males, ranging in age from 18 to 23, were recruited using the introductory to psychology participant pool. Two additional males were recruited on a voluntary basis.

Design

This experiment was a 3 (racial category: White, Light-skin Black, Dark-skin Black) x 2 (lineup type: target present, target absent) within-subjects design. The study was controlled for gender, thereby restricting the participants and targets to males only. Two versions of the videotape were created to balance the effects of any unusual target face upon memory. Additionally, the lineups were arranged in six different orders, balancing the effect of order. The participants were randomly assigned to a video group and lineup order. For example, a participant in video group 1 would therefore view a target present lineup that would be a target absent lineup for a subject participating in video group 2. The "video group" and "order" were counterbalancing variables that balance the effects of unique target faces and the order of the lineups presented to the participants. For each lineup that the participants completed, the hit rate (correct identification) and confidence level of their choice were the dependent measures. *Materials*

A videotape of three targets was shown to the participants on a television screen. A facial recognition test, devised by the experimenter, was used for the identification procedure. The test contained six lineups: White target-present, White target-absent,

Light-skin Black target-present, Light-skin Black target-absent, Dark-skin target-present, and Dark-skin target-absent lineup. Each lineup contained six color mug shots, labeled one through six consecutively, an option to choose "person not present", and a confidence scale. The confidence scale ranged from 1, complete guess, to 10, absolutely sure, and measured the self-rated confidence level of the participant's choice. The instructions on how to select an option and rate the confidence level were placed at the top of each lineup page (see appendix).

A questionnaire, also devised by the experimenter, assessed the racial category of cach participant and their age. The questionnaire contained filler questions as well, for which the answers yielded no importance to this study (see appendix).

Procedure

The experimenter began the session by distributing a written informed consent to the participants. After they read and signed the form, they returned one copy to the experimenter and kept one copy for their personal records. The experiment occurred in two sessions. In the first session, the participants viewed a videotaped event on a television screen. Depending upon which video group the participants were assigned to, the participants viewed video 1 or video 2. Each video contained the same racial categories (i.e. White, Light-skin Black, and Dark-skin Black) and actions (i.e. approaching a counter, signing a document, and leaving). However, different targets were used in each video as a counterbalancing variable.

The footage consisted of three males who each belonged to one racial category (i.e. White, Light-skin Black, and Dark-skin Black). Each male approached a counter,

one by one, signed a document on the counter top, looked at the camera, and then left. Because the camera was placed behind the counter, a frontal view of each male was shown to the participants. The entire video lasted for about 30 seconds, with each target on the video for 10 seconds.

After the tape was shown, the participants were dismissed after being told to return 2 days later to the same room, at the same time, for a second session. The context was held consistent in order to prevent false memories, creating an optimal environment for recall (Smith & Vela, 1992). In order to prevent the participants from differentially engaging in rehearsal strategies during the 2-day interim, the experimenter did not inform the participants that their memory would be tested in the second session.

In the second session, the experimenter passed out the identification test to each participant. The experimenter verbally informed the participants that image quality did not play a factor in whether the person in the lineup was the original target shown in the previous video. Additionally, the experimenter stated that the confidence levels must be rated even if the participant selected "person not present". The participants were given a minute to look at each lineup. However, participants were verbally informed that additional time would be given on a page if they needed it. After all participants were finished, the identification tests were collected and the questionnaire was handed out. After they completed the questionnaire, a written debriefing was distributed to the participants, and the experimenter answered any questions they had about the procedure.

RESULTS

The sample size consisted of 10 White males. Although one male was of Hispanic/Latino origin, his data was included with the other White males. Because the sample size was small, it was important to include every participant in the analyses. For all statistical analyses, a significance level of 0.05 was used.

Before carrying out the analyses, the mean hits for each lineup type were calculated and are summarized in Table 1. For the target present lineups, the participants' mean hit rates were low across the racial categories for each target; for White targets, M = 0.30, for Light-skin Black targets, M = 0.30, for Dark-skin Black targets, M = 0.10. The participants' mean hit rates were higher in the target absent lineups; for White targets, M = 0.50, for Light-skin Black targets, M = 0.60, for Darkskin Black targets, M = 0.70), displaying a slight trend across the racial categories as well.

Insert Table 1 about here

.....

T-tests were used to compare the means between certain groups. A significant difference was found between the means for Dark-skin Black target absent lineups (M = 0.70) and the means for the Dark-skin Black target present lineups (M = 0.10), t(9) = 3.674, p < 0.05.

The mean confidence level of a participants' choice was calculated for each lineup type for each racial category. Although there were slight differences for each

racial category, the mean responses were restricted near the median of the scale range. No significant differences occurred for the mean confidence levels in either the target present lineups or the target absent lineups.

Insert Table 2 about here

DISCUSSION

The accuracy of the participants' recall for the original targets' faces was low across all racial categories in the target present lineups. There was a statistically significant difference found, however, between the Dark-skin Black, target absent lineups (DBabs) and the Dark-skin Black, target present (DBpres) lineups. This finding demonstrates that the white participants in this study were significantly more likely to make a hit (i.e. correct identification) when the target was absent in the Dark-skin Black lineups, as opposed to the Dark-skin Black target present lineups.

Although no significant differences were found for the target absent lineups, the hit rates were higher and showed a slight trend in the direction of the Dark-skinned Black racial category. The data indicates that white males in this study are more likely to make a hit (correct identification) when the targets are Dark-skinned Black and the original target is absent. These results might be indicative of the options presented to the participants. The lineups did not provide an option "do not know" for the participants. Non-forced-choice recognition tests buffer the accuracy-confidence correlation from false identifications. Therefore, forced-choice recognition tests, such as the one used in this study, can consciously distort eyewitness memory, thereby increasing the probability that the witness will make a false identification (Leippe, 1980; Wells, 1993). Further research is needed to exactly pinpoint the underlying mechanism that causes this low rate of correct identification.

Because of constraints on our resources, we were unable to include Black participants in this study, inadvertently creating a "half-design" (Wells & Olson, 2001).

Due to the "half-design" of this study and the small sample size, the current research is limited in its ability to be generalized to other populations. The lack of a comparison group (e.g. Black participants) in "half-design" studies could have created stimulussampling problems, even though counterbalancing variables were used in this study for unusual target faces and the order of lineups.

The small sample size (n=10) of this study is statistically problematic, making it hard to draw conclusions about the White male population and their recall for Blacks of varying skin tones. Future research with a larger sample size is therefore needed.

Another shortcoming of this study is that the video used presented a low arousal situation. Leippe (1980) cites several researchers who have found a significant relationship between arousal level and recognition accuracy. Witnesses establish higher hit rates in high arousal situations, as opposed to the low hit rates (i.e. poorer accuracy) in low arousal situations. It would therefore be beneficial to have a follow-up study in which the video presents a high arousal situation.

In summary, the present results confirm that white males have higher hit rates for lineups in which the target is absent, and the absence of a target in a Dark-skin Black category is most likely to result in a hit (i.e. correct identification). These findings support the notion that lineups using the same racial category (e.g. all Dark-skin Blacks) appear more similar to the eyewitness who is of another race (e.g. White), increasing the probability for misidentifications of innocent people (false alarms). Also problematic is the possibility that a guilty individual will not be accurately identified.

CONCLUSION

Further research is needed to understand the trend of perceived similarity for darker skin tones and how this impairment in the accuracy of White eyewitness' recall can be improved. These findings made contributions in the area of cross-racial identification.

REFERENCES

Alley, T.R., & Schultheis, J.A. (2001) Is facial skin tone sufficient to produce a cross-racial identification effect? <u>Perceptual and Motor Skills</u>, <u>92</u>, 1191-1198.

Ayuk, R.E. (199). Cross-racial identification of transformed, untransformed, and mixed-race faces. <u>International Journal of Psychology</u>, <u>25</u>, 509-527.

Bigler, R.S., Jones, L.C., & Lobliner, D.B. (1997) Social categorization and the formation of intergroup attitudes in children. <u>Child Development</u>, <u>68</u>(3), 530-543.

Bothwell, R.K., Deffenbacher, K.A., & Brigham, J.C. (1987) Correlation of eyewitness accuracy and confidence: Optimality hypothesis revisited. Journal of Applied <u>Psychology</u>, <u>72</u>(4), 691-695.

Cord, S.I., Breland, A.M., & Raskin, P. (2001) Perceptions of and preferences for skin color, black racial identity, and self-esteem among African-Americans. <u>Journal of</u> <u>Applied Social Psychology</u>, <u>31</u>(11), 2256-2274.

Jones, Trina. (2000). Shades of brown: The law of skin color. <u>Duke Law Journal</u>. 49, 1486-1557.

Leippe, M.R. (1980) Effects of integrative memorial and cognitive processes on the correspondence of eyewitness accuracy and confidence. <u>Law and Human Behavior</u>, <u>4(4)</u>, 261-274.

Lindsay, D.S., Jack, Jr., P.C. & Christian, M.A. (1991) Other-race face perception. Journal of Applied Psychology, <u>76</u>(4), 587-589.

Lindsay, R.C.L. & Wells, G.L. (1985). Improving cycwitness identifications from lineups: Simultaneous versus sequential lineup presentation. <u>Journal of Applied</u> <u>Psychology</u>, <u>70</u>(3), 556-564.

Luus, E.C.A. & Wells, G.L. (1994) The malleability of eyewitness confidence: Co-witness and perseverance effects. Journal of Applied Psychology, 79(5), 714-723.

Meissner, C.A. & Brigham, J.C. (2001) Thirty years of investigating the ownrace bias in memory for faces. <u>Psychology, Public Policy, and Law, 7(1)</u>, 3-35.

Neal, A.M. & Wilson, M.L. (1989) The role of skin color and features in the Black community: Implications for Black women and therapy. <u>Clinical Psychology</u> Review, 9, 323-333.

Neil v. Biggers. 409 U.S. 188. (1972)

Park, B. & Rothbart, M. (1982). Perception of out-group homogeneity and levels of social categorization: Memory for the subordinate attributes of in-group and outgroup members. <u>Journal of Personality and Social Psychology</u>, 42(6) 1051-1068.

Shapiro, P.N. & Penrod, S. (1986) Meta-analysis of facial identification studies. <u>Psychological Bulletin</u>, <u>100</u>(20), 139-156.

Smith, S.M. & Vela, E. (1992) Environmental context-dependent eyewitness recognition. <u>Applied Cognitive Psychology</u>, 6, 125-139.

U.S. Department of Justice (1999). Evewitness evidence: A guide for law enforcement. Office of Justice Programs, National Institute of Justice.

Wells, G.L. (1993) What do we know about eyewitness identification? American Psychologist, 48(5), 553-571. Wells, G.L. & Lindsay, R.C.L. (1985) Methodological notes on the accuracyconfidence relation in eyewitness identifications. <u>Journal of Applied Psychology</u>, <u>70</u>(2), 413-419.

Wells, G.L. & Olson, E.A. (2001) The other-race effect in cyewitness identification: What do we do about it? <u>Psychology, Public Policy, and Law, 7(1), 230-246</u>.

Wells, G.L, Rydell, S.M., & Seclau, E.P. (1993) The selection of distractors for eyewitness lineups. Journal of Applied Psychology, 78(5), 835-844.



Rate the confidence of your choice:

APPENDIX IDENTIFICATION TEST

- Look at the photospread.
- Determine if **one** of the people from the video you saw in the first session is present: •If one person is **present**, <u>circle</u> the corresponding number of the mugshot
 - •If no one is present, circle "person not present"
- Rate the confidence of your choice by circling the appropriate number from 1 to 10.
- When the experimenter calls the time, turn to the next page.



- · Look at the photospread.
- Determine if **one** of the people from the video you saw in the first session is present: •If one person is **present**, <u>circle</u> the corresponding number of the mugshot
 - •If no one is present, circle "person not present"
- Rate the confidence of your choice by circling the appropriate number from 1 to 10.
- When the experimenter calls the time, turn to the next page.



completesomewhatabsolutelyguesssuresure

- Look at the photospread.
- Determine if one of the people from the video you saw in the first session is present:
 If one person is present, <u>circle</u> the corresponding number of the mugshot
 If no one is present, <u>circle</u> "person not present"
- Rate the confidence of your choice by circling the appropriate number from 1 to 10.
- When the experimenter calls the time, turn to the next page.



- Look at the photospread.
- Determine if **one** of the people from the video you saw in the first session is present: •If one person is **present**, <u>circle</u> the corresponding number of the mugshot

The person is present, <u>cifcle</u> the corresponding number of the r

- •If no one is present, <u>circle</u> "person not present"
- Rate the confidence of your choice by circling the appropriate number from 1 to 10.
- When the experimenter calls the time, turn to the next page.



- · Look at the photospread.
- Determine if one of the people from the video you saw in the first session is present:
 - •If one person is **present**, <u>circle</u> the corresponding number of the mugshot
 - •If no one is present, circle "person not present"
- Rate the confidence of your choice by circling the appropriate number from 1 to 10.
- When the experimenter calls the time, turn to the next page.



APPENDIX:

QUESTIONNAIRE

1. Age:
2. Classification:
3. Major:
4. How many hours are you currently taking?
5. Hometown (city, state):
6. Number of years you have lived in your hometown:
7. What high school did you graduate from? (name, city, state)
8. Do you live on campus? (circle your response) Yes No
9. Racial category/Ethnicity: (circle your response) *you may circle no response*
African-American/ Black American Indian/Alaskan Native
Anglo-American/White Asian Hispanic/Latino
Other (please specify):
No response
10. Are you currently employed? Yes No
11. Did you know any of the people in the video? Yes No

If you circled yes for question #11, please specify your relationship to them (ex: friend, relative, classmate) and/or their name:

Table 1

Lineup Type	Racial Category		
	White	Light-skin Black	Dark-Skin Black
Target Present	0.30	0.30	0.10
	(0.483)	(0.483)	(0.316)
Target Absent	0.50	0.60	0.70
	(0.527)	(0.516)	(0.483)

Mean Hits of Identifications in Lineups

<u>Note</u>. Means for each lineup type were based on whether or not the participant correctly identified the target as present or absent (i.e. hit = 1; no hit = 0) or not. The numbers in parentheses are standard deviations.

Table 2

Lineup Type	Racial Category		
	White	Light-skin Black	Dark-Skin Black
Target Present	4.00	4.60	4.60
	(2.494)	(2.011)	(2.319)
Target Absent	4.80	4.50	5.30
	(1.932)	(1.434)	(2.406)

Mean Confidence Levels of Choices in Lineups

<u>Note</u>. Means for each lineup type were based on the participants' level of confidence of their choice using a 10-point scale, with 10 being the high end of the scale. The numbers in parentheses are standard deviations.

<u>VITA</u>

JESSICA LYNNE WILLIAMSON

12021 Cabana Lane	E-mail:	dymond02@hotmail.com
Austin, TX 78727	Te	lephone: (512) 873-8508

EDUCATION

 Texas A&M University, College Station, TX
 Cumulative GPA: 3.78

 Graduation Date: May 2002
 Major GPA: 3.75

 Major: Psychology (English minor)
 Senior Honors Thesis: Skin tone of targets, lincup type, and confidence levels in cross-racial identification

MANUSCRIPTS IN PREPARATION

Williamson, J.L. (2002). <u>Skin tone of targets, lineup type, and confidence levels</u> in cross-racial identification. Unpublished manuscript.

RESEARCH EXPERIENCE

- Skin tone of targets, lineup type, and confidence levels in cross-racial identification: Advisor, Dr. Steven Smith. Senior Honors Thesis, wrote Internal Review Board proposal, designed and conducted experiment, analyzed data, wrote final report (Spring 2001 - present).
- False Priming Effects: Principal Investigator, Dr. Steven Smith, Research Assistant, conducted experiment and coded data. (Fall 2000).
- Reintroduction of Golden Lion Tamarins: Principal Investigator, Dr. Devra Kleiman. Intern, created Powerpoint presentations/lectures, fed and tracked primates, informed visitors about reintroduction program (Summer 2000).

HONORS AND ACTIVITIES

Undergraduate Honors Research Fellow (2001 - present). Sigma Xi Phi Kappa Phi Dean's List (Fall 2000; Fall 2001) Smithsonian Minority Internship Program Scholarship Award Golden Key International Honor Society National Society for Collegiate Scholars Helping One Student to Succeed Reading Program, Mentor (Fall 1999 - present) Minority Enrichment and Development through Academic & Leadership Skills (MEDALS), Director of Registration (2001 – Spring 2002) Texas A&M University Pre-Law Society, Member (Fall 2001 – present) Memorial Student Center Black Awareness Committee, Member (Fall 2000 – Spring

2001)