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Do They All Look Alike? An Exploration of Decision-Making Strategies in Cross-Race Facial Identifications

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Abstract

Although hundreds of studies have demonstrated that eyewitness testimony is error-prone, eyewitness evidence is often the strongest or only evidence used by juries when coming to a verdict. One potential cause of error occurs when eyewitnesses and the suspect are of different races. Findings regarding the cross-race effect are generally consistent, but causes for the effect are not well understood. This research explores decision-making strategies that may differentiate lineup identifications in cross-race versus same-race situations. Data were collected from 161 Caucasian subjects engaged in either a cross-race or same-race facial recognition task, similar to that used in criminal investigations. Although few differences were found between same and cross-race decision strategies, a number of other effects were found, including the impact of race on clarity of memory, and pre- and post-decision confidence. We discuss the implications for these data and propose directions for future research.

Résumé

Même si des centaines d'études ont démontré que le témoignage de témoin oculaire est sujet à l'erreur, la preuve d'un témoin oculaire est souvent la plus forte ou la seule qui est retenue par les jurys lorsqu'ils rendent un verdict. Une cause potentielle d'erreur se produit lorsque les témoins oculaires et le suspect sont de race différente. Les conclusions concernant l'effet transracial sont généralement uniformes, mais les causes de l'effet ne sont pas bien comprises. Cette recherche examine les stratégies de prise de décisions qui peuvent différencier l'identification des suspects dans des situations transraciales par opposition à des suspects de même race. Les données ont été recueillies auprès de 161 sujets caucasiens engagés soit dans une tâche de reconnaissance faciale transraciale ou de même race, semblable à celle utilisée dans les enquêtes criminelles. Bien que peu de différences n'aient été trouvées entre les stratégies de décision concernant les sujets de même race et transracial, un certain nombre d'autres effets ont été trouvés, notamment l'incidence de la race sur la clarté de la mémoire et la confiance avant et après la décision. Nous décrivons la signification de ces données et proposons des axes de recherche future.

On December 23, 1981, Tom Sophonow was visiting his sister in Winnipeg. Although his car troubles kept him in the city longer than he intended, he was able to return home to Vancouver later that evening. Little did he know that this innocent visit to Winnipeg would result in his spending almost 4 years in prison for the murder of a coffee shop clerk. Although there was no physical evidence linking Sophonow to the crime, eyewitness testimony led to his conviction. It took 15 years before the Winnipeg Police and a Manitoba Board of Inquiry pronounced Sophonow innocent (Chandler, 2002).

More innocent citizens are wrongfully tried and convicted on the basis of eyewitness evidence in Great Britain and North America than by any other factor within the legal system (Brandon & Davies, 1973; Connors, Lundregan, Miller, & McEwan, 1996; Huff, Ratner, & Sagarian, 1986). Nevertheless, eyewitness testimony is held in greater regard by juries, prosecutors, and others in the judicial system than any other type of evidence. It is estimated that eyewitness evidence plays a role in over 75,000 cases per year in North America (Goldstein, Chance, & Schneller, 1989).

Although actual rates of eyewitness errors are unknown, of 8,000 suspects arrested for sexual assault, over 2,000 were excluded by DNA testing. Typically, these arrests were made based (at least in part) on eyewitness identification. Were it not for the DNA testing, a large percentage of these individuals would probably have been convicted (Neufeld & Scheck, 1996). Further, DNA sequencing contributed to the exoneration of over 100 people on death row in the United States (Curtis, 2002; Scheck, Neufeld, & Dwyer, 2001). In 80-90% of these cases, eyewitnesses were a key factor in the conviction.

Often, eyewitness accounts are the primary evidence used by prosecutors and are the most sought-after form of evidence during the investigative process (Brigham & WolfsKeil, 1983; Lindsay, Wells, & Rumpel, 1991). Jurors often regard eyewitness testimony as the most useful evidence in a trial (Brigham & WolfsKeil; Lindsay et al., 1991), and they

often use the eyewitness' self-report of confidence to bolster their belief in their subsequent verdict. Although eyewitness confidence is often higher by the time of the trial (see Saad & Smith, 2001; Wells & Bradfield, 1998), it is an unreliable predictor of lineup identification accuracy (Smith, Lindsay, & Pryke, 2000; Sporer, Penrod, Read, & Culter, 1995).

Another factor that can lead to errors in eyewitness identification is cross-race situations. When the eyewitness is of a different race than the suspect, accuracy rates are lower than in same-race identifications (Brigham, 1981). Statistics are not collected concerning the frequency of cross-race lineups, but some inferences can be made. For example, the U.S. Justice Department states that 22% of sexual assaults involve black perpetrators and white victims (Scheck et al., 2001). Within the eyewitness literature relatively little attention has been paid to the cause of the cross-race effect (see Ng & Lindsay, 1994; Smith, Lindsay, Pryke, & Dysart, 2001). Nevertheless, the interaction between race and identification accuracy is well established (Brigham & Barkowitz, 1978; Chance, Goldstein, & McBride, 1975; Cross, Cross, & Daly, 1971; Malpass, Lavigueur, & Weldon, 1973). Meta-analyses demonstrate that Blacks and Whites are generally better at identifying individuals from their own race rather than those from another race (Bothwell, Bringham, & Malpass, 1989; Shapiro & Penrod, 1986). Ng and Lindsay reported similar findings with Oriental participants. Yet variables that allow researchers to postdict accuracy in same-race paradigms, such as decision time and confidence, are not predictive in cross-race situations (Smith et al., 2001).

Explanations of the Cross-Race Effect

Facial features. There have been a number of propositions as to why the cross-race effect occurs. Research examining in-group/out-group biases revealed that in-group members tend to assume that the facial features of in-group members are more idiosyncratic than those of out-group members (Cross et al., 1971; Malpass & Kravitz, 1969). Extending this research to explain the cross-race effect, members of one race tend to assume that members of another race have less homogeneity in facial features than their own. However, analysis of anthropometric data reveals that the common assumption that members of some races "all look alike" is erroneous. Asian, Black, and White faces are equally heterogenous (Goldstein, 1979a, 1979b). Even if there was greater homogeneity of facial features in one race compared to other races, it would not explain the relative ease with which individuals make same-race identifications (Ng & Lindsay, 1994).

The contact hypothesis. The contact hypothesis predicts that the amount of cross-race contact an individual experiences will be a strong predictor of cross-race facial recognition ability (Ng & Lindsay, 1994). An important factor in the hypothesized relationship between contact and recognition is the quality of the cross-race interactions; recognition ability improves as the number of quality interactions increases. However, the contact hypothesis has not been reliably demonstrated (e.g., Brigham & Barkowitz, 1978; Cross et al., 1971; Lavarkas, Buri, & Mayzner, 1976; but see Platz & Hosch, 1988).

A variation of the contact hypothesis was examined by Brigham and Malpass (1985). They examined whether racially prejudiced attitudes could have a negative influence on the contact-recognition relationship. Individuals high in prejudice may, upon recognition of an individual from the target race, refuse to process further the individual's facial features. This simple categorization eliminates any chance that contact can increase recognition ability. Thus, racial attitudes may act as a mediator of the contact-recognition ability relationship. Brigham and Malpass suggest that a simplistic understanding of the contact hypothesis may be at the root of failure to find support for the hypothesis. Moreover, they contend that mere contact is mediated by attitude as well as social orientation, difficulty of the identification task, and past experience with members of the other race. This complicated relationship between contact and facial recognition ability makes the use of the contact hypothesis as a postdictor of cross-racial eyewitness accuracy problematic and may offer an explanation for the lacklustre results found in research exploring this hypothesis.

Relative versus absolute judgment strategies. One area of interest with regard to eyewitness identification is the type of judgment strategies used by the witness. Inquiry into judgment strategies arose from research regarding lineup type. Lindsay and Wells (1985) were able to show that sequential lineups (photos shown one at a time) are superior to simultaneous lineups (photos presented in a single display) as people make fewer false positive errors in a sequential presentation. Simultaneous lineups facilitate judgment strategies in which eyewitnesses tend to compare the photos to each other, selecting the photo that most resembles their memory. Wells (1984) described this as a "relative" judgment strategy because the person selects the photo that best matches their memory, relative to the other photographs. This kind of strategy produces significantly more false positive errors than an "absolute" judgment strategy (Lindsay &

Bellinger, 1999; Smith et al., 2000). Absolute strategies are employed when the eyewitness compares each photo to their memory alone, deciding whether or not the photo is of the target. Thus, the superiority of sequential lineups is derived from the kind of judgment strategies engendered by the presentation of the photos one at a time. Even though sequential lineups do not prohibit the individual from comparing one photo to another, using a relative judgment strategy in that presentation format is much more difficult.

Variables that play a role in eyewitness testimony can be categorized as system or estimator variables (Wells, 1978). Lineup presentation and lineup fairness typify "system" variables, those that can be controlled by the legal system (Lindsay, Smith, & Pryke, 1999; Malpass & Lindsay, 1999). Estimator variables are measured after the identification to determine the likelihood of eyewitness error, such as the relationship between confidence and accuracy (Kassin, 1985; Lindsay, 1986; Sporer et al., 1995). Whereas system variables inform the process, estimator variables inform researchers how to assess identifications for idiosyncratic variance in accuracy.

Estimator or "postdicting" variables are of great importance to the legal process as they are frequently used in trials to assess the veracity of eyewitness testimony. Errors in systems that rely on human decisions for reliability are inevitable. Memory and facial recognition are complex processes that are vulnerable to error. Therefore, research that incrementally extends the ability to postdict the reliability of eyewitness memory must be actively pursued. Evidence that judgment strategy can act as an estimator variable has been presented by Lindsay and Bellinger (1999) and Smith et al. (2000). When mock witnesses are given a description of absolute and relative judgment strategies and are asked to indicate which style best typifies their decision process, those who report using a relative judgment strategy produced more false positive identifications than those who used an absolute strategy (Smith et al.). Clearly, an understanding of judgment strategies can incrementally improve the system's ability to predict identification error. However, research examining decision-making strategies has focused almost exclusively on same-race situations (Smith et al., 2001).

Overview of the Research

The goal of the current research was to explore if judgment strategies predict lineup identification accuracy in cross-race situations. For example, are persons engaged in an identification task with a same-race target more likely to use an absolute judgment strategy than those engaged in a cross-race identification task? Cross-race identification may induce a relative judgment strategy as the other-race member may be initially categorized as simply being of another race. The result could be biased encoding, where the eyewitness may be less inclined to process the information carefully. Then, when faced with a simultaneous lineup containing only other-race foils, the eyewitness may engage in a within-category comparison, choosing the person most resembling who they remember. This recall strategy would reflect a categorical encoding process. Alternatively, encountering a same-race individual may be more likely to provoke a more careful processing of the facial characteristics. Subsequently, eyewitnesses may be better able to engage in absolute judgment strategies when presented with the lineup. On that basis, we predicted that individuals completing a cross-race identification task would be more likely to use a relative judgment strategy than individuals engaging in a same-race identification task. Using both open-ended and closed-ended measures of decision-making, we tested this hypothesis with the hope of finding a viable explanation for the cross-race effect.

Method

Participants

Participants were 232 Caucasian undergraduate students participating in the experiment for extra credit in psychology courses. Forty-two participants were excluded on the basis that they had participated in an eyewitness experiment in the past. An additional 29 participants were excluded on the basis that they were taking or had completed a course on psychology and law where eyewitness testimony is discussed; we thought that their superior knowledge of eyewitness issues and experimental methodologies may bias their responses. The final data set included 161 participants.

Materials

The crime. Five separate 90-second videotaped staged crimes were used with a different "criminal" in each. Three videos included a black criminal and two included white criminals. Each video depicted a woman withdrawing money from a banking machine with the criminal standing behind her. Once the woman withdrew her money, the criminal grabbed the cash from her hands and ran away. While standing behind the woman, the criminal was presented in a profile position. He then took the money, faced the camera briefly, and ran outside the view of the camera.

The lineups. Two simultaneous six-photo lineups were produced for each target: One target-absent and one target-present. The foils were chosen for their resemblance to the target. Simultaneous lineups were used as this style of lineup is still the most likely to be used both in Canada and the U.S. Each lineup was comprised of six individual colour photographs taken against the same background. The lineups included only individuals of the same race as the target.

Relative and absolute judgment measures. Relative and absolute judgment strategies were assessed using two self-report items (see Smith et al., 2000). Participants were presented with descriptions of relative and absolute strategies and asked to indicate which strategy best matched the process they used when making their lineup decision (a dichotomous, forced choice self-classification). The second item asked participants to respond on a 7-point scale ranging from 1 (Completely "absolute" strategy) to 7 (Completely "relative" strategy).

Open-ended items. Decision-making strategies were also assessed in an open response format. Participants were asked to write down how they had arrived at their decision. Participants were also asked to write down their thought processes and describe the factors that led them to choose or not choose an individual from the lineup. Further, they were asked to indicate things that made their decision particularly difficult or easy. Participants' statements were coded by two independent judges in categories such as: Holistic versus specific features encoding, clarity of memory, confidence, concern for accuracy and consequences of the decision, changes in certainty, relative versus absolute judgments, pop-out effects, distractions in the criminal situation, and the participant's perspective or opportunity to view the crime.

Closed-ended items. Participants were also asked to complete a set of close-ended items concerning potential influences on their identification decision. Participants were asked if the age, race, sex, and clothing of the criminal influenced their decision on 7-point Likert-type scales ranging from 1 (Not at all) to 7 (A great deal).

Demographic information. Finally, participants were asked a series of demographic items, including age, race, and gender. To account for any bias that might occur due to similar experiences or knowledge, we asked participants to indicate if they had ever been a witness to a crime, if they had completed a similar experiment in the past, or if they had taken or were taking the Psychology and Law course offered in the Psychology department. If they indicated "yes" to any of these items, their data were excluded from analyses (see "Participants" above).

Procedure

Between one and eight participants were seated in a small room and asked to watch a video. Immediately following the video, participants were separated and asked to describe the criminal (open-ended). In addition, participants were asked to indicate their confidence in their ability to identify the criminal from the lineup if he were present, and to rate the clarity of their memory they had for the criminal. Both of these items were answered on 7-point scales ranging from "not at all certain/clear" to "absolutely certain/ clear."

Next, participants were assigned randomly to either the target present or target absent condition. Each participant was presented with the corresponding lineup and asked to complete the identification task. Participants were warned that as in a real identification task, the criminal may or may not be present. The task was completed by checking a box that corresponded physically to the position of the photograph in the lineup of their choice, or selecting "none of them" if they believed the target was absent. The identification task included two items measuring postdecision confidence and clarity of memory, similar to those described above.

Following the identification task, participants were asked to respond to a number of open-ended items asking them to describe their thoughts during the identification as well as any factors that made their decision particularly easy or difficult. This was followed by a series of Likert-type items that assessed the idiosyncratic details of the criminal (e.g., clothing, eyes, hair, and facial hair) and how these details influenced the identification task. Finally, participants were asked to respond to the demographic items. At the conclusion of the experiment, participants were thanked and debriefed.

Results

The first step in the data analysis was to examine certain participant characteristics, to evaluate our manipulation check, and to assess overall accuracy. Next, because the decision to select an individual from a lineup involves a different process than not choosing (i.e., a nonchooser) analyses were conducted separately for these two groups (see Lindsay & Wells, 1985; Sporer et al., 1995). Once split by choice, data were analyzed for differences on the lineup related measures (pre-lineup confidence, clarity of

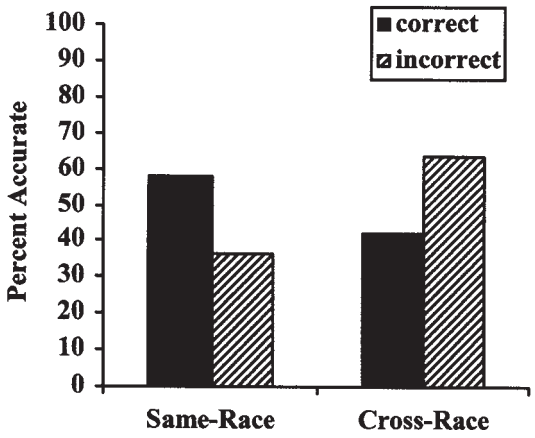

Figure 1. Cross-Race Effect: Choosers ($N = 88$).

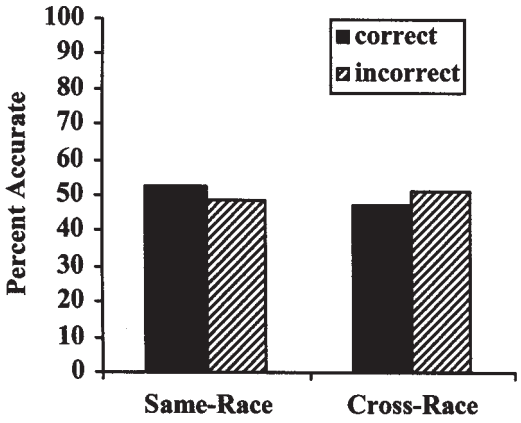

Figure 2. Cross-Race Effect: Nonchoosers ($N = 73$).

memory, etc.). Next, data were analyzed in terms of the decision-making strategies participants indicated they used, both in terms of the open- and closed-ended items.

Participant Demographics

Most participants were women (75%) with a mean age of 21 years. Participant demographic variables were unrelated to the cross-race manipulation, so the randomization check was successful.

Manipulation Check

As expected, the cross-race manipulation was successful, $\chi^2(1) = 84.03$, $p < .001$. With one exception, everyone who saw a black perpetrator indicated his race to be black. Again, with one exception, everyone who saw a white perpetrator indicated his race to be white. These participants were retained in the analyses.

Overall Accuracy

Overall, 46% of participants' lineup decisions were accurate, and 54% of participants identified someone from the photo lineup. Choosers were more likely to err in their lineup decisions than nonchoosers, $\chi^2(1) = 6.35$, $p < .01$.

Cross-Race Effect

As shown in Figures 1 and 2, the cross-race effect is evident for choosers but not for nonchoosers. Choosers in the cross-race condition were more likely to err in their lineup decision than those in the same-race condition, $\chi^2(1) = 3.76$, $p < .05$. This pattern was absent for nonchoosers, $\chi^2(1) = 0.11$, $p > .05$.

Lineup-Related Items

The cross-race manipulation impacted participants' responses on a variety of lineup-related questions. Eyewitnesses rated the clarity of their memory of the perpetrator as well as their confidence in their lineup decision both before and after their lineup identification. They also rated the extent to which the lineup procedure was fair to the perpetrator and their decision-making strategy matched a relative or absolute judgment strategy. These ratings were subjected to a series of one-way analyses of variance, the results of which are presented in Table 1 for choosers and Table 2 for nonchoosers. Interestingly (although not surprisingly), the cross-race manipulation (i.e., the race of the perpetrator) did not impact eyewitnesses' evaluations of the extent to which race of the perpetrator influenced their decisions, nor did it impact evaluations of the fairness of the lineup to the criminal, suggesting that eyewitnesses (both choosers and nonchoosers) are often unaware of factors that may influence their decision-making.

For both choosers and nonchoosers, the cross-race manipulation affected evaluations of the clarity of memory (both before and after the lineup identification). As compared to eyewitnesses in the same-race condition, those in the cross-race condition reported their memory to be less clear, and for choosers this effect became stronger after the lineup identification (see Tables 1 and 2).

Among choosers, those in the same-race condition were more confident in their ability to make an accurate lineup decision than those in the cross-race condition. Their postlineup identification confidence judgments reflected the same pattern of results. Similarly, among nonchoosers, those in the cross-race condition were less confident in their predicted accuracy in a lineup decision than those in the same-race condition. Postlineup identification confidence judgments were unaffected by the cross-race manipulation.

Finally, eyewitnesses reported on the extent to

TABLE 1
Analysis of Variance for Cross-Race Presented for Choosers

Judgment	*F*	*M* (same-race)	*M* (cross-race)	Cohen's *d*
Race of perpetrator[a]	0.12 (ns)	4.12	3.95	.07
Clarity of memory[b]	3.92*	3.92	3.39	.42
Preidentification confidence[c]	2.82†	4.03	3.61	.36
Postidentification confidence[c]	15.40**	4.03	2.92	.84
Clarity of memory (postidentification)[b]	9.82**	3.67	2.86	.67
Fairness to the criminal[d]	2.15(ns)	4.39	3.96	.30

Note. Degrees of freedom for choosers: 1, 86; ns = nonsignificant.
[a]Rating scale: 1 = not at all, 7 = a great deal. [b]Rating scale: 1 = not at all clear, 7 = extremely clear. [c]Rating scale: 1 = not at all confident, 7 = extremely confident. [d]Rating scale: 1 = not at all fair, 7 = extremely fair.
*$p < .05$; **$p < .01$; † $p < .10$.

TABLE 2
Analysis of Variance for Cross-Race Presented for Nonchoosers

Judgment	*F*	*M* (same-race)	*M* (cross-race)	Cohen's *d*
Race of perpetrator[a]	0.17 (ns)	2.97	3.19	.10
Clarity of memory[b]	5.68*	4.35	3.61	.56
Preidentification confidence[c]	8.96**	4.61	3.64	.70
Postidentification confidence[c]	1.38(ns)	3.95	3.56	.27
Clarity of memory (postidentification)[b]	2.95†	3.78	3.25	.40
Fairness to the criminal[d]	1.59(ns)	4.71	4.28	.29

Note. Degrees of freedom for nonchoosers: 1, 71; ns = nonsignificant.
[a]Rating scale: 1 = not at all, 7 = a great deal. [b]Rating scale: 1 = not at all clear, 7 = extremely clear. [c]Rating scale: 1 = not at all confident, 7 = extremely confident. [d]Rating scale: 1 = not at all fair, 7 = extremely fair.
*$p < .05$; **$p < .01$; † $p < .10$.

which various factors influenced their decision. Reports of the extent to which the age, gender, clothing, and race of the perpetrator affected lineup decisions were not affected by the cross-race manipulation.

Decision-Making Strategies

Closed-ended measures. Eyewitnesses rated the extent to which their lineup identification strategy was characteristic of an absolute judgment strategy or a relative judgment strategy. Consistent with our predictions, choosers in the cross-race condition were somewhat more likely to indicate that they had used a relative judgment strategy, $\chi^2(1) = 2.89$, $p = .09$, than those in the same race conditions, but decision-making strategy had no impact on the accuracy of lineup decisions, $\chi^2(1) = .79$, $p > .05$. This replicates previous findings on absolute/relative judgment strategy and decision accuracy (see Smith et al., 2001). For nonchoosers, the cross-race manipulation did not affect their reported use of a relative or absolute judgment strategy, $\chi^2(1) = 0.02$, $p > .05$, but nonchoosers in the same-race condition were somewhat more likely to consider the absolute judgment strategy to lead to the most accurate eyewitness decisions, $\chi^2(1) = 3.42$, $p = .06$.

Open-ended data. Participants provided some insight into their decision-making strategies by responding to several open-ended questions. These questions delved into the cognitive processes involved in making a lineup decision. The responses were coded and subjected to a content analysis by two independent raters. Raters analyzed the responses for references to specific features (e.g., specific facial features, skin tone, hair style), mental imagery (e.g., "I tried to picture his face"), relative or absolute judgment strategy (e.g., "I looked at all of them and then tried to pick the best match"), changes in decision or certainty as a consequence of reflection (e.g., "I first I thought it was #2, but then when I thought about it more it seemed like #4 was the guy"), and concerns regarding accuracy or consequences of the identification (e.g., "I wanted to be sure I was right" and "I didn't want to make a mistake that could get this guy into trouble").

Interestingly, although a rich set of open-ended data was collected (over 700 statements were coded), few significant differences emerged from the data. Among nonchoosers, those in the cross-race condition were somewhat less likely to express a desire to be accurate in the lineup identification task, but those in the same-race condition were somewhat more like-

ly to mention this concern, $\chi^2(1) = 3.17$, $p = .06$. Moreover, among nonchoosers, those in the same-race condition were somewhat more likely to express concern for their identification accuracy than those in the cross-race condition, $\chi^2(1) = 3.13$, $p < .10$. This pattern did not emerge among those who chose someone from the lineup.

For choosers, those in the cross-race condition were more likely to express concerns about the consequence of the identification than those in the same-race condition, $\chi^2(1) = 5.12$, $p = .05$, perhaps reflecting their lack of confidence in the identification task (see above). A series of chi-square analysis on the open-ended responses relating to judgment strategies (e.g., reliance on holistic vs. featural encoding, creation of mental imagery) revealed nonsignificant effects of the cross-race manipulation, or any reliable prediction of accuracy.

Discussion

Summary of Results

This study, replicating many previous studies (e.g., Bothwell et al., 1989; Shapiro & Penrod, 1986; Smith et al., 2001), demonstrated a clear cross-race effect for choosers such that cross-race identifications were more error prone. Although race had an impact on accuracy, participants did not seem aware of this effect. Cross-race identifications had an effect on the clarity with which participants remembered the criminal's face, both before and after the lineup identification. Further, at least for those who chose a person from the lineups, confidence was negatively affected by cross-race decisions.

Perhaps not surprisingly, in both open and closed-ended items assessing decision-making, few differences were found. When we asked participants to indicate how they arrived at their lineup decision, we found few differences between the same and cross-race decisions. These decision-making strategies were not predictive of accuracy.

Implications

This study is one of the few attempts at understanding the social cognitive processes underlying eyewitness decision-making in cross-racial facial identification. However, few significant differences were found between same and cross-race situations with regards to eyewitnesses' decision-making strategies. Although some might find these results disappointing, we believe these findings to be quite informative.

It is important to recognize that although participants indicated that race of the criminal had no impact on their decisions, race of the criminal clearly affected the reported clarity of participants' memories, the confidence they had in their ability to select the criminal from the lineup, and choosers' accuracy in making those decisions. Thus the impact of cross-race identifications is indisputable.

One explanation for the largely nonsignificant results found with the open-ended data may reflect people's difficulties in reporting cognitive processes involved in making difficult judgments. Indeed, in many circumstances people are unaware of the cognitive processes involved in their judgments (see, for example, Jacoby, Kelley, Brown, & Jasechko, 1989; Jacoby, Lindsay, & Toth, 1992). This suggests at least two possibilities. First, perhaps eyewitnesses are unaware of the decision-making strategies they are using. However, previous research has demonstrated (at least in same-race situations) that participants can make distinctions between their decision-making strategies, and these distinctions can be predictive of accuracy (see Lindsay & Bellinger, 1999, Smith et al., 2000). Thus the question remains: Why are cross-race decisions more error prone?

Although the answer to this question is not clear, some of the data reported here may provide a second explanation for the results. Specifically, participants reported poorer clarity of memory for the criminal in the cross-race condition, relative to the same-race condition. Poor clarity of memory may reflect that encoding cross-race facial features may be different than same-race encoding. It is possible this could be due to differences in facial features for different groups (e.g., Ng & Lindsay, 1994). Alternatively, the effect could be due to lack of contact with other groups (see Brigham & Malpass, 1985).

A third possible explanation is related to the extent to which people process information about the criminal. As we hypothesized earlier, participants may use the race of the criminal as a cue for how much to process the relevant information (in this case facial features – see Petty & Caccioppo, 1986 for a discussion of source characteristics and information processing). The result could be biased encoding, where the eyewitness may be less inclined to process the information carefully. There is some support for this hypothesis in that participants were more likely to indicate they had used a relative judgment strategy in cross-race decisions. Although these findings suggest a potentially intriguing hypothesis, further research is required.

Limitations and Future Directions

One potential limitation of this study is the lack of significant results with regard to decision-making strategies in same versus cross-race situations. In the

future, researchers should endeavour to assess decision-making strategies more directly. The use of online judgments, such as asking participants to talk through their decision-making process, could provide more complete information regarding the underlying processes. If this were the case, some differences might be found between same and cross-race decision-making strategies.

Future research should also explore the potential role of amount of information processing in same versus cross-race situations. Ideally, this could both be assessed (through thought listings, etc.), as well as manipulated (through cognitive load or distracter tasks) while an eyewitnesses is viewing a crime. If information processing were a factor, it could help to explain why cross-race decisions are more error prone.

A second potential limitation of this study is the laboratory setting in which it took place. In a laboratory setting, participants may be less inclined to attend to or make an effort to complete the task. However, there were clear indications that participants took their task seriously. For example, several participants wrote that they were concerned about being correct. Others wrote that they were concerned about the potential consequences of an error for the perpetrator.

Another potential limitation of this study was the reliance on Caucasian participants. This was done simply for convenience, as Caucasian participants are more readily available. However, it is clear that the conclusions drawn here may not necessarily generalize to situations where the criminal is white and the eyewitness is black. We are currently collecting data to address this issue.

Conclusion

The data reported here provide some interesting insights into the nature of cross-race identifications. Yet there continues to be a need for research in this area if we are to understand the inherent differences between same and cross-race identifications. Further, the inability to explain these differences highlights how the literature is unable to predict when these errors will occur. Certainly, there should be a continued focus on improving system variables in order to reduce the probability that identification errors occur in the first place. This is not to say that inquiry into variables that can incrementally improve the ability to postdict or estimate the probability of identifications error should be ignored. As long as mistaken eyewitness identifications contributes to wrongful convictions, researchers must continue to explore the reasons for these errors, as well as to understand how and under what conditions these errors are more likely to occur.

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