Cross-Race Effect

The *cross-race effect* (also referred to as the *own-race bias* or *other-race effect*) is a facial recognition phenomenon in which individuals show superior performance in identifying faces of their own race when compared with memory for faces of another, less familiar race. Over three decades of research on the cross-race effect (CRE) suggests a rather robust phenomenon that carries practical implications for cases of mistaken eyewitness identification, particularly in situations that involve a poor opportunity to encode other-race faces and when a significant amount of time occurs between observation of the perpetrator and a test of the witness's memory. While the CRE has not generally been observed in the accuracy of descriptions for own-race vs. other-race faces, research has found that individuals often attend to facial features that are diagnostic for own-race faces and misapply these feature sets when attempting to identify and describe other-race faces. As such, theorists have proposed that encoding and representational processes are largely responsible for the CRE, including the role of interracial contact and perceptual categorization processes. The present entry will summarize this research on the CRE, including how it operates in eyewitness identification and person descriptions, the influence of certain social and cognitive psychological mechanisms that may underlie the effect, and the potential role of training programs for improving other-race face identification.

Laboratory Studies of the CRE

Over three decades of research in cognitive and social psychology has examined the cross-race effect (CRE), providing a substantial body of work demonstrating the reliability and robustness of the effect. The vast majority of the research has focused on individuals' attempts to identify both own- and other-race faces. Across studies, a "mirror effect" pattern is generally observed, such that individuals demonstrate both significantly greater correct identifications of own-race faces (referred to as "hits") and significantly fewer false identifications of own-race faces (referred to as "false alarms"). Overall, participants are 1.40 times more likely to correctly identify an own-race face, while they are 1.56 times more likely to falsely identify an other-race face. Composite signal detection measures of discrimination accuracy (such as d' or A') and response criterion (such as C or B") have also been used to describe the CRE. As might be expected, discrimination accuracy is better for own-race faces and individuals generally demonstrate a more liberal response criterion for other-race faces (indicating that they are more likely to say "seen before" to such faces).

Several factors have been shown to moderate the CRE. For example, studies have shown that shorter viewing times are more likely to produce the effect such that under brief encoding conditions performance is superior on own-race faces. As viewing time increases, however, the CRE reduces in size such that performance can become equivalent on own- and other-race faces with a sufficient opportunity for encoding. Retention interval, or the time between stimulus presentation and test, has also been shown to moderate the effect. Studies indicate that as the retention interval increases, participants' response criterion becomes more liberal for other-race faces, thereby producing a CRE on measures of response criterion. As such, participants are more willing to identify other-race faces (i.e., to respond "seen before") when a lengthy delay occurs between study and test phases.

Studies have evidenced the CRE across a wide variety of ethnic and racial groups. While the original research in this area dealt primarily with Whites and Blacks in the United States, more recent studies have included samples from Canada, Great Britain, Germany, Turkey, South Africa, and parts of the Middle East and Asia. Whites, Blacks, Asians, Hispanics, Natives/Indians, Jews, and Arabs, among others, have been included in these studies with each demonstrating a CRE in face identification performance. Research has shown that, in general, Whites demonstrate a larger CRE than Blacks with respect to measures of discrimination accuracy, and that "majority-group" individuals demonstrate a more robust CRE than do "minority-group" individuals.

The CRE in Eyewitness Identification & Person Descriptions

Laboratory research on the CRE has suggested a rather robust phenomenon with some practical implications, particularly with regard to witnesses in real cases who may be confronted by an assailant of a different race or ethnicity. Could such situations lead to an increased risk of mistaken identification and/or failures to identify the perpetrator? Studies that have investigated eyewitness identification suggest that the CRE occurs just as frequently in laboratory "facial recognition" paradigms as they do in simulated "eyewitness identification" paradigms involving a single "perpetrator" at study and a six- or eight-person "lineup" presented at test. As such, researchers have suggested that the CRE is likely to be seen in real cases of eyewitness identification, most especially when the opportunity to view the perpetrator is limited and when a significant amount of time passes between the crime event and the attempted lineup identification (consistent with the moderating factors discussed above). Along these lines, researchers have examined whether mistaken eyewitness identification, and the CRE in particular, may play a critical role in cases of wrongful conviction. Data from these studies indicate that nearly 40% of cases involving mistaken identification result from the CRE. Archival studies of real cases have also indicated that the likelihood of identifying an own-race suspect is significantly greater than that of an other-race suspect, particularly when there is strong evidence to suggest his/her culpability.

Witnesses to a crime are frequently asked to provide a verbal description of the perpetrator they viewed. These descriptions are then used by investigators in attempting to identify a suspect in the immediate vicinity. Given the robustness of the CRE in face identification, researchers have also investigated whether a similar effect might be evidenced in person descriptions. To date, only a handful of studies have examined this possibility, with the majority concluding that no differences exist in the *accuracy* of descriptions provided for own-race vs. other-race faces. However, researchers have found that individuals of different races/ethnicities often report different features when differentiating faces, and further that these features are most useful for characterizing faces of their own race. For example, Caucasians frequently use hair color, hair texture, and eye color to distinguish faces, whereas African-Americans rely upon face outline, eye size, eyebrows, chin, and ears. While it is clear that we try to distinguish faces of other races by the facial features that are distinguishable within our own race, the problem appears to lie in that those same features are generally less useful when applied to other-race faces.

Theoretical Underpinnings of the CRE

Several theoretical mechanisms have been identified with regard to the CRE, including interracial contact and social attitudes, encoding and representational processes, perceptual-memory expertise, and perceptual categorization. First, racial contact and attitudes have been implicated as moderators of the CRE. Across studies, interracial contact has been shown to account for a small, but significant, amount of variance in performance on other-race faces such that greater interracial contact tends to reduce the size of the observed CRE. Furthermore, studies have suggested that the form of interracial contact may be important to its influence of face identification such that individuals must be motivated to individuate other-race members through contact (i.e., social utility). The properties of natural social environments that foster the development of high performance levels with other-race faces are presently unknown. While social attitudes have not been shown to directly moderate the CRE, an indirect relationship appears to exist such that social attitudes may account for the amount of interracial contact one engages in and thereby influence the CRE. For example, individuals who profess prejudiced attitudes towards other-race groups are less likely to have significant amounts of contact with such individuals and, as a result, appear more likely to demonstrate the CRE. However, the causal direction of the contact – attitude relationship is more difficult to identify, and could work in either direction.

A great deal of research suggests that encoding and representational processes may be responsible for recognition differences in the CRE. As noted above, individuals of different

races/ethnicities appear to rely upon different feature sets when encoding faces, and these feature sets appear to be most useful when encoding faces of one's own race. In addition, individuals have been shown to attend to greater numbers of features for own-race faces, and to group or "chunk" these features when representing the face. As a result, own-race faces are better differentiated in memory based upon these feature sets, while other-race faces appear to be more clustered and less differentiated. This encoding and representational advantage allows individuals the ability to better "recollect" own-race faces at test based upon those features identified and selected at encoding. In contrast, the clustering of other-race faces in memory leads to poorer recognition performance at test and, most prominently, a greater likelihood of falsely identifying a novel other-race face.

Studies that have validated the role of encoding and representational processes in the CRE also suggest that individuals' processing of own-race faces might be likened to that of an "expert" perceptual-memory skill. One such theory proposes that faces may be encoded with respect to individual features or isolated aspects (i.e., "featural" processing) and with regard to configural or relational aspects among features (i.e., "configural" processing). Studies suggest that "experts" encode objects (such as faces) in a more configural manner, while "novices" encode objects on a more featural basis. Using a variety of paradigms, researchers have demonstrated that own-race faces appear to be processed in a more configural manner (consistent with expert-level processing), while other-race faces are processed with respect to individual features (consistent with novice-level processing).

Research studies have also noted that the CRE may be due to a process of racial categorization. In particular, individuals appear process other-race faces at a superficial level that is consumed with a focus towards racial categorization. As a result of these categorization processes, other-race faces are coded with an emphasis on category-related information (stereotypes) and less with regard to individuating information. Researchers have demonstrated that such categorization processes can both influence our perception of a face (i.e.,

stereotype consistent) and lead to deficits in performance consistent with CRE.

Improving the Recognition of Other-Race Faces

Given the bulk of research suggesting that the CRE may be a product of interracial contact and the role of encoding-based mechanisms (e.g., perceptual learning), researchers have attempted to develop a variety of training programs over the years to improve participants' recognition of other-race faces. While some of these studies included forms of positive and negative feedback, others have focused upon improving participants' ability to distinguish between other-race faces and teaching participants to identify "critical" feature sets that are useful for discriminating such faces. Taken together, these studies have generally met with some success in producing short-term improvements in recognition performance; however, when participants are tested at longer post-training retention intervals this improvement in performance tends to diminish. Nevertheless, these studies suggest that individuals may be trained to improve their face recognition performance to a certain extent, and researchers continue to develop training protocols that might be employed by government agents or business professionals who may be sent abroad.

Jessica L. Marcon, Christian A. Meissner, & Roy S. Malpass
University of Texas at El Paso

Cross-References: Description Accuracy; Estimator and System Variables; Expert Psychological Testimony on Eyewitness Identification; Exposure Time; Eyewitness Identification, Field Studies; Eyewitness Memory; Exposure Time; Training of Eyewitnesses.

Further Readings

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