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COMMENTARY

The culture of perceptual expertise and the other-race effect

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Abstract

In our commentary, we propose that the ORE can be viewed as a form of perceptual expertise. Like experts, we recognize own-race faces at the subordinate level as individuals and novices when recognize other-race faces at the basic level of race. Applying a perceptual expertise account, we explain the ORE in terms of its cognitive, neural, and motivational factors. We suggest that by creating a culture of "other-race" expertise, improvements in other-race face recognition can be achieved.

KEYWORDS
face recognition, object recognition, other-race effect, perceptual expertise

In this Special Issue (SI), *Bridging the gap between intergroup and face perception research: Understanding the mechanisms underlying the other-race effect*, Stelter & Schweinberger examine the ORE from two contrasting perspectives: the neuro-cognitive perspective and the social-cognitive perspective. Whereas the neuro-cognitive approach focuses on how own-race experience shapes the cognitive behaviours and neural processes of own- and other-race face recognition, the socio-cognitive approach emphasizes the motivational factors behind the ORE. Here, we argue that the neuro- and social-cognitive perspectives are complementary, reflecting 'different sides of the same ORE coin'. We propose that the ORE can be cast in terms of a perceptual expertise account (Tanaka & Philibert, 2022) integrating cognitive, neural and motivational approaches to own- and other-race face recognition. We suggest that by creating a culture of 'other-race' expertise, improvements in other-race face recognition can be achieved and maintained.

PERCEPTUAL EXPERTISE AND DOWNWARD SHIFTS IN RECOGNITION

Whereas a single object can be categorized at multiple stages of abstraction, most people are fastest to identify an object at the basic level (e.g. car, bird) and slower to categorize the same object at the more general superordinate level (e.g. vehicle, animal) or the more specific level (e.g. sports car, chipping sparrow; Rosch et al., 1976). Unlike most people, experts exhibit a downward shift in their recognition

where they identify objects in their domain of expertise at the finer-grain, subordinate level. For example, a seasoned birdwatcher identifies birds at the species level (e.g. chipping sparrow, 'field sparrow') or a car aficionado identifies a car by its make and model (e.g. 'Mazda MX-5 Miata'). Downward shifts in expert object recognition are accompanied by changes in brain activity as measured by electrophysiological (Tanaka & Curran, 2001) and neuroimaging (Gauthier et al., 1999) methods. Real-world experts have more exposure to objects of expertise than novices, however, it is their intrinsic passion that drives them to identify these objects quickly, accurately and at specific levels of abstraction.

THE EXPERTISE OF OWN-RACE FACE RECOGNITION

Own-race and other-race face processing can be seen as expert and novice (non-expert) recognition. Where people individuate their own-race faces at a subordinate level of the person (e.g. 'Joe', 'Sue'), they categorize other-race faces at the basic level of race (e.g. White, Indian, Asian). Relative to other-race face recognition, people exhibit a downward shift when recognizing faces from their own-race. Individuation tunes the observer's perception to the unique visual properties of own-race faces. In contrast, categorization *detunes* those properties in favour of the visual features shared by all faces of the racial category. In a visual search task, Levin found that white participants were faster at detecting a black target among white distractors but were poorer at recognizing individual other-race faces (Levin, 2000). These results show that the classification of faces at the level of race comes at the expense of recognizing faces at an individual person level. At the neural level, the primary and subordinate level processing of own- and other-race faces are characterized by the different event-related potentials brain components (N170 and N250; Serafini & Pesciarelli, 2022) and in neuroimaging, differential activation of the OFA and FFA brain regions (Ficco et al., 2022).

EXPOSURE, MOTIVATION AND THE ORE

The perceptual expertise literature demonstrates that incidental exposure is not sufficient to promote expert recognition (Scott et al., 2006). In our everyday lives, for example we see hundreds, if not thousands, cars – each of a different make, model and year, yet very few of us would qualify as car experts. Similarly, in face recognition, exposure to people of different cultural and racial backgrounds is no guarantee that this experience will reduce the ORE. In this SI, for example Stelter et al. (2023) showed that other-race contact, as measured by subjective self-reports and objective GPS tracking data, were poor predictors of a person's ORE magnitude. Nor can motivation account for the differences in own- versus other-race face recognition. Papers in this SI showed that manipulations of social motivation, such as increasing the personality similarity between in-group and out-group members (Kawakami et al., 2022) or elevating the social status of out-group faces (Simon et al., 2022) failed to improve the recognition of other-race faces. In the end, if racial experience and social motivation are insufficient to reverse the ORE, what other interventions might enhance our ability to recognize other-race faces?

Like learning a second language, perceptual expertise is best achieved through cultural immersion. Experts create a "culture of expertise" by forming clubs and societies that not only reinforce their perceptual skills but serve as an important source of social support for their shared passions. In face recognition, Korean children adopted by White European parents are immersed in European culture and as a result, show a superior ability to recognize White European faces and a paradoxical ORE for Korean faces (Sangrigoli et al., 2005). Other-race immersion provides the perceptual richness and social incentives that are more likely to lead to significant changes in other-race face recognition. When fully immersed in a different racial culture, people are exposed to a wide range of ambient face images necessary for between-person discriminations and within-person generalizations (Jenkins et al., 2011). In this context, people are also motivated to meet and interact with out-group, other-race individuals producing better other-race individuation and better other-race face recognition. New technologies make it feasible to

create an online culture of "other-race" expertise. Brunet et al. (2022) have shown that virtual interactions with even static photographs of other-race individuals were enough to modify other-race face processing strategies. Innovative interventions could be designed where participants engage in meaningful social interactions with a diversity of other-race individuals over multiple sessions and for an extended period (e.g. 6 months to a year). It is a testable prediction that these interactions will improve other-race face recognition abilities and social attitudes.

In conclusion, based on principles of perceptual expertise and leveraging emerging face-to-face technologies, it is possible to create an immersive 'other-race' intervention that is ecologically relevant, socially impactful and long-lasting.

AUTHOR CONTRIBUTIONS

Megan Lall: Conceptualization. **James Tanaka:** Conceptualization.

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