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Brief Report

The other-race effect in children from a multiracial population: A cross-cultural comparison

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ABSTRACT

The role of experience with other-race faces in the development of the other-race effect was investigated through a cross-cultural comparison between 5- and 6-year-olds and 13- and 14-year-olds raised in a monoracial (British White, $n = 83$) population and a multiracial (Malaysian Chinese, $n = 68$) population. British White children showed an other-race effect to three other-race faces (Chinese, Malay, and African Black) that was stable across age. Malaysian Chinese children showed a recognition deficit for less experienced faces (African Black) but showed a recognition advantage for faces of which they have direct or indirect experience. Interestingly, younger (Malaysian Chinese) children showed no other-race effect for female faces such that they can recognize all female faces regardless of race. These findings point to the importance of early race and gender experiences in reorganizing the face representation to accommodate changes in experience across development.

Introduction

The other-race effect is a robust finding in adult face recognition reflected in superior recognition of own-race faces over other-race faces. The basis for the other-race effect has been explained within

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several theoretical frameworks, all sharing the principle that intergroup contact has some influence on its magnitude. Specifically, authors have argued that the other-race effect is due to formation of different mental representations of own-race and other-race faces (Valentine, 1991), leading to difficulty in generalizing expertise gained from own-race faces to other-race faces (Chance, Turner, & Goldstein, 1982; Michel, Rossion, Han, Chung, & Caldara, 2006; Rhodes, Brake, Taylor, & Tan, 1989; Tanaka, Kiefer, & Bukach, 2004). Recently, an integrative framework has been proposed where both social–cognitive variables and perceptual expertise interact in contributing to face perception (Hugenberg, Young, Bernstein, & Sacco, 2010; Sporer, 2001; Young, Hugenberg, Bernstein, & Sacco, 2012). These accounts suggest that the recognition advantage for own-race faces is dependent on social categorization mechanisms determining the in-group or out-group status of a face, perceiver motivation to individuate in-group faces, and perceiver experience with faces belonging to the relevant category (e.g., Lebrecht, Pierce, Tarr, & Tanaka, 2009; Short & Mondloch, 2010; Young & Hugenberg, 2012).

The other-race effect becomes finely tuned very early in life (Ferguson, Kulkofsky, Cashon, & Casasola, 2009; Hayden, Bhatt, Joseph, & Tanaka, 2007; Kelly et al., 2007, 2009; Sangrigoli & de Schonen, 2004b; Tham, Bremner, & Hay, 2015). For example, Kelly and colleagues (2007) found that Caucasian White 3-month-olds could discriminate between faces within four racial groups (Caucasian White, Middle Eastern, Chinese, and African Black), but this ability became specialized to two racial groups by 6 months of age (Caucasian White and Chinese) and to own-race faces only by 9 months of age (Caucasian White). Studies with children from 3 years of age onward suggest a fairly stable other-race effect during childhood, particularly with children from a monoracial population (Anzures et al., 2014; Chiroro, Tredoux, Radaelli, & Meissner, 2008; Chiroro & Valentine, 1995; Cross, Cross, & Daly, 1971; Feinman & Entwisle, 1976; Pezdek, Blandon-Gitlin, & Moore, 2003; Suhrke et al., 2014), and have been replicated in individuals from different racial backgrounds, including individuals with Caucasian White, African Black, and Chinese parentage (for reviews, see Hancock & Rhodes, 2008; Meissner & Brigham, 2001).

Despite the prevalence of an own-race face recognition advantage, experience with other-race individuals (due to exposure training or immersion in natural multiracial environments) can enhance the ability to recognize other-race faces. Laboratory exposure studies have been successful in reducing the other-race effect in infant, child, and adult face recognition (Anzures et al., 2012; Heron-Delaney et al., 2011; Lebrecht et al., 2009; Sangrigoli & de Schonen, 2004b; Tanaka & Pierce, 2009). In addition, experience effects have been shown in the case of children adopted into families of a different race. For example, de Heering, de Liedekerke, Deboni, and Rossion (2010) studied 6- to 14-year-old Asian children who were adopted by Caucasian White families in Europe between the ages of 2 and 26 months. Age-matched (Asian) controls showed a clear other-race effect in favor of own-race faces, whereas the adopted participants performed equally well with all faces (Caucasian White and Asian faces). In another study, a complete reversal of the other-race effect can be seen in adults that have been adopted for approximately 23 years (Sangrigoli, Pallier, Argenti, Ventureyra, & de Schonen, 2005). Thus, face representations remain plastic enough to incorporate faces from another race when experience is acquired with the new facial type.

Because most studies of the other-race effect have been with individuals from monoracial populations, an important theoretical question remains unanswered: How does consistent exposure to a variety of face races influence the development of the other-race effect? Although training and adoption studies provide important information regarding the flexibility of the other-race effect and the plasticity of children's face recognition system, the effect from training studies is transitory (e.g., Hills & Lewis, 2011) and evidence from adoption studies is retrospective. These studies do not assess the effects of permanent immersion in multiracial environments.

To date, there are a few rather inconclusive studies of the other-race effect in individuals born and raised from multiracial environments. Three-month-old single-race infants (both parents of the same race) living in a multiracial environment showed no visual preference for own-race and other experienced race faces (Bar-Haim, Ziv, Lamy, & Hodes, 2006) and showed no evidence of recognition of faces belonging to either group (Gaither, Pauker, & Johnson, 2012). Work with children (6–12 years of age) in a multiracial environment showed comparable recognition for own-race and other experienced race (e.g., Cross et al., 1971; Feinman & Entwisle, 1976). Work with adults with multiracial experience suggested that high levels of contact are associated with a reduced other-race effect for experienced races