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The influence of averageness on judgments of facial attractiveness: No own-age or own-sex advantage among children attending single-sex schools



Larissa Vingilis-Jaremko^a, Daphne Maurer^{a,*}, Xiaoqing Gao^{a,b}

^a Department of Psychology, Neuroscience & Behaviour, McMaster University, Hamilton, Ontario L8S 4K1, Canada

^b Centre for Vision Research, York University, Toronto, Ontario M3J 1P3, Canada

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ABSTRACT

We examined how recent biased face experience affects the influence of averageness on judgments of facial attractiveness among 8- and 9-year-old children attending a girls' school, a boys' school, and a mixed-sex school. We presented pairs of individual faces in which one face was transformed 50% toward its group average, whereas the other face was transformed 50% away from that average. Across blocks, the faces varied in age (adult, 9-year-old, or 5-year-old) and sex (male or female). We expected that averageness might influence attractiveness judgments more strongly for same-age faces and, for children attending single-sex schools, same-sex faces of that age because their prototype(s) should be best tuned to the faces they see most frequently. Averageness influenced children's judgments of attractiveness, but the strength of the influence was not modulated by the age of the face, nor did the effects of sex of face differ across schools. Recent biased experience might not have affected the results because of similarities between the average faces of different ages and sexes and/or because a minimum level of experience with a particular group of faces may be adequate for the formation of a veridical prototype and its influence on judgments of attractiveness. The results suggest that averageness affects children's judgments of the attractiveness of the faces they encounter in everyday life regardless of age or sex of face.

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* Corresponding author.

E-mail address: maurer@mcmaster.ca (D. Maurer).

Introduction

When asked to judge the attractiveness of faces, adults from different cultures and children of different ages show striking agreement about which faces are most attractive (Bernstein, Lin, & McClellan, 1982; Cunningham, Roberts, Barbee, & Druen, 1995; Johnson, Dannenbring, Anderson, & Villa, 1983; Langlois et al., 1987; Langlois et al., 2000; Perrett, May, & Yoshikawa, 1994; Rhodes, Harwood, Yoshikawa, Nishitani, & McLean, 2002; Samuels, Butterworth, Roberts, Graupner, & Hole, 1994; Slater, Quinn, Hayes, & Brown, 2000; Slater et al., 1998). These attractiveness judgments affect social interactions because they lead to attributions of positive qualities to those perceived as attractive (“what is beautiful is good” stereotype; Dion, Berscheid, & Walster, 1972). One influence on judgments of facial attractiveness is the proximity of a face to the population average. Composite faces created by averaging luminance levels from 16 or 32 images are judged by adults to be more attractive than the original faces used to create the composites (Langlois & Roggman, 1990). The attractiveness of more average faces is a robust finding, and control experiments have ruled out artifactual explanations based on smoothing of skin texture in the pixel-based averaging procedure (Little & Hancock, 2002; Rhodes & Tremewan, 1996) or the increasing symmetry of faces as they approach group averages (Rhodes, Sumich, & Byatt, 1999; Valentine, Darling, & Donnelly, 2004).

There is also evidence that children’s judgments of attractiveness are influenced by averageness; adolescents find faces that have been transformed toward an average face to be more attractive than the original versions of the faces (Saxton, DeBruine, Jones, Little, & Roberts, 2009; Saxton, DeBruine, Jones, Little, & Roberts, 2011; Saxton et al., 2010), and children as young as 5 years find faces that have been transformed toward average to be more attractive than faces transformed away from average, although to a lesser extent than 9-year-olds or adults (Vingilis-Jaremko & Maurer, 2013a). These studies, along with evidence that averageness influences judgments of attractiveness cross-culturally (see Rhodes, Harwood, et al., 2002; Rhodes et al., 2001) and that faces naturally lying closer to the population average are considered to be more attractive than more distinctive faces (Light, Hollander, & Kayra-Stuart, 1981), provide strong evidence that average faces are attractive.

Faces are hypothesized to be encoded within a multidimensional face space centered on a prototype that is formed from our accumulated experience with faces (Rhodes, 2006; Valentine, 1991). The prototype is constantly being updated as we encounter new faces, each of which is encoded as a multidimensional vector based on differences and distance from the prototype. As a result, more distinctive faces lie farther from the prototype (Valentine, 1991). It has been theorized that faces closer to the prototype may be processed more quickly and easily than more distinctive faces and consequently may be preferred (Valentine, 1991; Winkielman, Halberstadt, Fazendeiro, & Catty, 2006). Indeed, adults categorize prototypical random dot and geometric patterns more quickly than less prototypical patterns and rate them as more attractive than less prototypical patterns (Winkielman et al., 2006). Adults also judge more prototypical dogs, wristwatches, and birds to be more attractive than more distinctive exemplars of these categories (Halberstadt & Rhodes, 2000). Similarly, adapting adults to a distorted face in which all of the features are compressed (or expanded) shifts their subsequent judgments of attractiveness in the distorted direction, as would be expected if the norm had been updated during the adaptation (Rhodes, Jeffery, Watson, Clifford, & Nakayama, 2003; see Cooper & Maurer, 2008, for similar evidence with adaptation to high or low feature height in adults). Thus, adults may perceive prototypical faces, objects, and patterns as attractive because they more closely match the norm for that category and hence are processed more fluently than less prototypical exemplars.

There is evidence that children also process faces relative to a norm and that, at least by 5 years of age, the norm influences their judgments of attractiveness, as 5-year-olds select faces that have been transformed toward the group average to be more attractive than faces that have been transformed away from the group average, although to a lesser extent than adults (Vingilis-Jaremko & Maurer, 2013a). Three-month-old infants (but not 1-month-olds) treat a four-face composite as familiar after being exposed to the four individual faces (de Haan, Johnson, Maurer, & Perrett, 2001; see Rubenstein, Kalakanis, & Langlois, 1999, for similar evidence in 6-month-olds), a pattern suggesting that they have the cognitive skills to form a prototype. Six-month-old infants look longer at an average face than at faces rated by adults as unattractive (Rubenstein et al., 1999), although 5- to 8-month-olds do not look

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