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An own gender bias and the importance of hair in face recognition

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Abstract

There is a large literature on the *own race bias*, the finding that people are better at recognizing faces of people from their own race. Here an *own gender bias* is shown: Males are better at identifying male faces than female faces and females are better at identifying female faces than male faces. Encoding a person's hair is shown to account for approximately half of the own gender bias when measured using hit and false alarm rates. Remember/know judgements and confidence measures are taken. Encoding a person's hair is critical for having a "remember" recollective experience. Parallels with the own race bias and implications for eyewitness testimony are discussed.

PsycINFO classification: 2343
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1. Introduction

Ninety percent of eyewitness experts believe that the *own race bias*—that people are better at identifying others of their own race—has produced results that are reliable and large enough to be part of expert scientific testimony (Kassin, Tubb, Hosch, & Memon, 2001; see special issue of *Psychology, Public Policy, and Law*, March 2001; for a meta-analysis see Meissner & Brigham, 2001). The explanation usually given for this bias is that people become experts in recognizing faces of their own race because of having much interest in and contact with people of their own

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race (Brigham & Malpass, 1985; Furl, Phillips, & O'Toole, 2002; Wright, Boyd, & Tredoux, 2003). Other own group biases, for example, an own age bias, have also been found (Wright & Stroud, 2002). Here we are interested in an own gender bias, and the quality of the resulting memories.

There have been some studies that have investigated whether there is an own gender bias. For example, Shaw and Skolnick (1994, 1999) have conducted several studies investigating this. In their studies, male and female participants were shown simulated crime videos of either a male or a female perpetrator. They found that people were more accurate with their own gender. This type of study, where participants see a small number of targets in a relatively realistic format, is important for establishing the ecological validity of any finding. However, there are two disadvantages of this type of study which we address here. The first is that each person can contribute only a small number of data points. This means that a large number of participants is needed to achieve precise estimates and to have sufficient power to detect even moderate effects. The second disadvantage is that only a small number of faces are used as stimuli. There may be peculiarities about these particular faces that make the results not generalize (for discussion see Wells & Windschitl, 1999; Wright, 1998). The standard "old"/"new" memory recognition procedure does not have these disadvantages, though it has less ecological validity than the approach used by Shaw and Skolnick (1994, 1999). Thus, these studies should be seen as complementary to Shaw and Skolnick's approach.

The results of studies using "old"/"new" recognition procedures have been mixed (McKelvie, 1981, 1987). Shapiro and Penrod (1986) conducted a meta-analysis of a large number of face recognition studies. Some of these studies reported the gender of the face and the participant, so this allowed the authors to look to see if there was, overall, an effect. Shapiro and Penrod found an own gender bias for correct identifications, but no bias for correctly rejecting faces that had not been previously seen. The effect, however, was much smaller than for the own race effect, and the size/presence of the effect varied across studies. The effect also does not appear to occur to the same extent for females and males. In one early study, Cross, Cross, and Daly (1971) found the effect was due mostly to females performing better with female faces than male faces, not to a similar own gender bias for male participants (see also Lewin & Herlitz, 2002).

As with other own group biases, the own gender bias is shown by a statistical interaction. Here it is between the gender of the target face and the gender of the participant. Herlitz and colleagues (Herlitz, Airaksinen, & Nordstrom, 1999; Lewin, Wolgers, & Herlitz, 2001; Nyberg, Habib, & Herlitz, 2000) have shown gender differences in memory performance on several test batteries. Females are generally better with verbal tasks and males are generally better with visuospatial tasks. With respect to face recognition, these gender biases would show up as main effects (Lewin & Herlitz, 2002). It is more difficult to explain an own gender interaction from gender differences on these test batteries unless characteristics of female faces differ in their ease of verbal encoding compared with male faces.

A second aim of this research is to investigate memory for a person's hair. O'Donnell and Bruce (2001) have shown that hair is a particularly important characteristic