Will you remember me? Cultural differences in own-group face recognition biases☆

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HIGHLIGHTS

- We examine face memory biases with European Canadians (EC) and East Asians (EA).
- EC show better memory for minimal ingroup (vs. outgroup) faces.
- EC show better memory for same-university (vs. other-university) faces.
- EA do not show these two own-group face memory biases.
- Cultural differences in the conception of ingroup may explain these results.

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ABSTRACT

East Asians often define their ingroups based on preexisting social relationships (e.g., friends, family), whereas North Americans define their ingroups largely based on broader social categories (e.g., race, nationality; Brewer & Yuki, 2007). In the present research we examined the consequences of this cultural difference for own-group face recognition biases. In Study 1, European Canadians and first-generation East Asian Canadians were assigned to minimal groups. Consistent with previous findings, European Canadians showed superior memory for own-group faces; however, as expected, first-generation East Asian Canadians did not. In Study 2, using university affiliation as the experimentally manipulated social group, European Canadians again showed superior memory for own-group faces, whereas first-generation East Asian Canadians did not. The results are consistent with current theorizing and suggest that the effect of mere social categorization on face recognition is moderated by culture.

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People generally find it easier to recognize same-race as compared to cross-race faces—a phenomenon known as the cross-race effect (CRE; see Anthony, Copper, & Mullen, 1992; Meissner & Brigham, 2001 for reviews). The CRE has been widely documented among European Americans (e.g., Chance, Goldstein, & McBride, 1975; Devine & Malpass, 1985; MacLin, van Sickler, MacLin, & Li, 2004; O'Toole, Deffenbacher, Valentin, & Abdi, 1994; Shepherd, Deregowski, & Ellis, 1974) and African Americans (e.g. Chance et al., 1975; Devine & Malpass, 1985; Malpass & Kravitz, 1969; Shepherd et al., 1974). There is also evidence to suggest a CRE among Asian Americans and East Asians (e.g., Hayward, Rhodes, & Schwaninger, 2008; Michel, Rossion, Han, Chung, & Caldara, 2006; O'Toole et al., 1994), but a reverse CRE has also been documented, with East Asian participants in at least one study recognizing White faces better than East Asian faces (Valentine & Endo, 1992).

Although researchers initially believed that the CRE occurred exclusively due to people's greater perceptual experience with same-race versus cross-race faces (e.g. Shepherd et al., 1974; Wright, Boyd, & Tredoux, 2003), more recent theorizing suggests that this and other group-based face recognition biases (e.g., religious affiliation: Rule, Garrett, & Ambady, 2010; sexual orientation: Rule, Ambady, Adams, & Macrae, 2007) arise from a combination of perceptual experience, social categorization, and people's motivations to individuate (Hugenberg, Wilson, See, & Young, 2013; Hugenberg, Young, Bernstein, & Sacco, 2010). According to the Categorization–Individuation Model (CIM), own-group face recognition biases can emerge because people categorize outgroup members but are motivated to individuate ingroup members (Hugenberg et al., 2010), and as such, "the motivational nature of the CIM predicts that virtually any contextually meaningful shared

ingroup membership may signal the need to individuate" (p. 1173). Building on the CIM, in the current research we tested the possibility that what serves as a motivationally relevant ingroup/outgroup distinction in one culture might not in another, leading to predictable cultural differences in face recognition biases.

1. Face recognition biases

Numerous findings support the idea that social categorization and motivational processes can both play a role in maintaining an own-group bias in face recognition. In one study, the hairstyle of ambiguously Hispanic–Black faces was manipulated to make the targets appear to be either Hispanic or Black (MacLin & Malpass, 2001). Although the facial features were identical, Hispanic Americans in this study were better at recognizing faces that, based on the hairstyle, appeared to be Hispanic (i.e., their racial ingroup) as opposed to Black (i.e., a racial outgroup). Additional research has established that face recognition accuracy for same-race faces similarly increased when participants believed that the targets belonged to the same (versus different) university (Bernstein, Young, & Hugenberg, 2007; Study 1), socioeconomic group (Shriver, Young, Hugenberg, Bernstein, & Lanter, 2008), or minimal group as themselves (Bernstein et al., 2007; Study 2). Notably, all of these experiments used the same target faces while simply manipulating social categorization. Hence, these findings support the notion that even holding perceptual expertise constant, recognition accuracy is increased for targets categorized into the same social group as the perceiver. This has led to the conclusion that mere social categorization alone is sufficient to elicit group-based face recognition biases (Bernstein et al., 2007).

It is important to note that experimental work examining the social motivational underpinnings of cross-category face recognition has primarily been conducted in North-American cultural contexts, predominantly with European American participants. In the current research we aimed to further our understanding of face recognition biases by examining whether cultural background can moderate these group-based face recognition biases.

2. Culture and the meaning of ingroups

Group processes, including the way that ingroups are conceptualized, are often shaped by the cultural context (Yuki & Brewer, 2014). In North American cultures, social groups tend to be represented as broad social collectives (Brewer & Yuki, 2007). Thus, strangers who share the same social category or group (e.g., university, sports team, or race) are treated as "ingroup" members even though there is no pre-existing interpersonal relationship between them. By contrast, in East Asian cultures, social groups are more likely to be conceived of as networks of interpersonal relationships (Brewer & Yuki, 2007). Hence, the "ingroup" includes only others with whom one has direct or indirect personal ties.

These two culturally divergent representations of the ingroup are substantiated by comparative studies of intergroup biases. With regard to category-based social groups, North Americans typically exhibit stronger ingroup biases than do East Asians. For example, North American students exhibited an own-group evaluative bias toward students in their own university, whereas Japanese students either did not demonstrate such a bias (Snibbe, Kitayama, Markus, & Suzuki, 2003) or showed a reversed bias, favoring students in a competing university (Heine & Lehman, 1997). Moreover, using a minimal group paradigm to artificially create two social categories, Americans were more likely to favor ingroup members when deciding the amount of a monetary bonus that other participants would receive, whereas Japanese participants showed no such bias (Falk, Heine, & Takemura, 2014).

These culturally distinct conceptualizations of the ingroup raise an interesting and as yet untested possibility for the process of face recognition. Unlike North Americans, East Asians may not treat strangers who belong to the same social category as an ingroup member if they have no pre-existing direct or indirect personal connection with them (Yuki, 2003). Because East Asians may not hold ingroup biases toward category-based social groups in the first place (e.g., Falk et al., 2014), a shared social category alone may be sufficient to enhance memory of a target's face for North Americans (e.g., Bernstein et al., 2007), but not for East Asians.

3. The present research

In the present research, we aimed to replicate and extend the findings of Bernstein et al. (2007) by examining the effect of target race (White and East Asian) and social group membership on face recognition biases among European Canadian and East Asian participants. We hypothesized a moderating effect of culture on the relationship between social categorization and face recognition. Specifically, consistent with previous findings (Bernstein et al., 2007), we predicted that European Canadians would show enhanced memory for faces that shared the same minimal group (Study 1) or university affiliation (Study 2). By contrast, we expected that for East Asians, sharing the same minimal group (Study 1) or university affiliation (Study 2) would not lead to a comparable face recognition bias.

4. Study 1

4.1. Method

4.1.1. Design and participants
Ninety-one participants, including 39 European Canadians (30 female; $M_{age} = 21.8$ years) and 52 first-generation East Asian Canadians[1] (32 female; $M_{age} = 21.2$ years), completed a purported study of personality and face perception for course credit.[2] The study had a 2 (Culture: European vs. East Asian) × 2 (Target Race: White vs. East Asian) × 2 (Target Group: Ingroup vs. Outgroup) mixed design, with the last two factors within-subjects.

4.1.2. Materials

4.1.2.1. Personality test. In order to create minimal groups, participants were asked to complete 40 questions from the Big Five Personality Test (Goldberg, 1993), purportedly to assess their personality type.

4.1.2.2. Face stimuli. One hundred and twenty gray-scaled photographs of White ($n = 60$) and East Asian male targets ($n = 60$), each displaying neutral facial expressions, were used as face stimuli.[3] Each photograph was 6×5.25 in. and appeared on either an orange or green background, with half of the faces of each race appearing on each color background.

4.1.3. Procedure
Consenting participants first completed the personality test on a computer. They were led to believe that their responses were analyzed by the computer which then provided ostensible results, indicating that the participant fit either an "orange" or a "green" personality type. In reality, participants' color group was randomly assigned. To help foster identification with their purported personality group, participants were asked

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[1] Thirty-four of the self-identified European Canadians were born in Canada and five were born in the United States or a European country (e.g., England). All of the self-identified first-generation East Asian Canadians were born in an Asian country (e.g., China, Korea) with the average length of residence in Canada being 8.8 years ($SD = 5.35$).

[2] The data collection stop point for Study 1 was primarily determined by the availability of participants (aiming for at least 30 participants per culture group) and the end of term. The number was determined by convention and our anticipation of the power required to detect our effects.

[3] The face stimuli for the two studies were adapted from Blair, Judd, Sadler, and Jenkins (2002), Gao et al. (2008), and Minear and Park (2004).