Published in final edited form as:
J Exp Child Psychol. 2009 September ; 104(1): 105–114. doi:10.1016/j.jecp.2009.01.006.

Development of the other-race effect during infancy: Evidence toward universality?

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Abstract

The other-race effect in face processing develops within the first year of life in Caucasian infants. It is currently unknown whether the developmental trajectory observed in Caucasian infants can be extended to other cultures. This is an important issue to investigate because recent findings from cross-cultural psychology have suggested that individuals from Eastern and Western backgrounds tend to perceive the world in fundamentally different ways. To this end, the current study investigated 3-, 6-, and 9-month-old Chinese infants' ability to discriminate faces within their own racial group and within two other racial groups (African and Caucasian). The 3-month-olds demonstrated recognition in all conditions, whereas the 6-month-olds recognized Chinese faces and displayed marginal recognition for Caucasian faces but did not recognize African faces. The 9-month-olds' recognition was limited to Chinese faces. This pattern of development is consistent with the perceptual narrowing hypothesis that our perceptual systems are shaped by experience to be optimally sensitive to stimuli most commonly encountered in one's unique cultural environment.

Keywords

Face processing; Other-race effect; Development; Infancy; Culture; Perceptual narrowing

Introduction

Adults are typically better at recognizing faces from their own ethnic group as compared with faces from other ethnic groups. This is commonly referred to as the *other-race effect* (ORE) (see Meissner & Brigham, 2001, for a review). The ORE has been reliably demonstrated in multiple studies conducted during the past 40 years with adults from a range of ethnic groups, including Caucasian (e.g., Chiroro & Valentine, 1995), African (e.g., Caroo, 1986), Chinese (e.g., Hayward, Rhodes, & Schwaninger, 2008), and Japanese (e.g., Valentine & Endo, 1992). However, questions concerning the development of the ORE are

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unresolved. Currently, its precise onset remains equivocal, and the potential universality of its ontogenetic emergence across ethnic groups is unknown.

Concerning development, early investigations reported a relatively late onset, with initial estimates at 8 years of age (Feinman & Entwhistle, 1976) and then 6 years of age (Chance, Turner, & Goldstein, 1982). Studies conducted over the past 5 years lowered the estimated point of inception to 5 years of age (Pedzek, Blandon-Gitlin, & Moore, 2003) and then to 3 years of age (Sangrigoli & de Schonen, 2004a). The negative correlation observed between publication chronology and estimated onset of the ORE is not coincidental. A similar downward shift has been observed throughout developmental psychology as child-appropriate paradigms have been relentlessly modified and fine-tuned. This latter assertion is supported by even more recent experimental reports that place the developmental onset of the ORE at the first year of life.

Sangrigoli and de Schonen (2004b; see also Hayden, Bhatt, Joseph, & Tanaka, 2007) demonstrated that an ORE for "Asiatic" faces is present at 3 months of age in French Caucasian infants, but it is also easily removed with minimal exposure to Asiatic faces, suggesting that a robust ORE does not emerge until later in life. To investigate this issue more fully, Kelly and colleagues (2007b) adopted a similar but slightly modified paradigm as Sangrigoli and de Schonen (2004b) (see Kelly et al., 2007b, for a detailed description of the methodological differences) in which they extended the range of face stimuli to four distinct ethnic groups (African, Middle Eastern, Chinese, and Caucasian) and tested three different age groups of British Caucasian infants (3-, 6-, and 9-month-olds). In contrast to Kelly and colleagues (2007b), Sangrigoli and de Schonen (2004b) found that the ORE was not present at 3 months of age and that instead it developed gradually between 3 and 9 months of age. The 3-month-olds were able to recognize faces in all four ethnic conditions, the 6-month-olds in two conditions (Chinese and Caucasian), and the 9-month-olds in just the own-race condition (Caucasian). The observed *decrease* in processing abilities for other-race faces may initially seem counterintuitive, but in fact it is consistent with the notion of "perceptual narrowing" as outlined by Nelson (2001). According to this account, the infant begins life with a broad face processing mechanism that permits the processing of "faces" in general. Then, as visual input is received, the system becomes "tuned" to process the category of faces that are most prevalent in the infant's visual environment. Thus, it can be tentatively concluded that the ORE emerges early in development and probably within the first year of life. However, this statement can be applied only to Caucasian populations. Currently, there are no available data to inform us about when the ORE develops in other ethnic populations.

The failure to test more than one ethnic group, and in many cases more than one age group, is commonplace within psychological literature. Although it could be argued that it is inadequate to not test more age/ethnic groups, it is almost certainly of greater concern that we readily assume our findings embody universal effects. A recent yet burgeoning literature is beginning to challenge our preconceptions about the universality of even the most fundamental aspects of human perception. In brief, individuals from Western cultures process information *analytically* by focusing on salient objects and using categorical rules when organizing their environment. In contrast, people from Eastern cultures process information in a more *holistic* manner, focusing on relationships and perceptual similarities among objects (see Nisbett & Miyamoto, 2005, for a review). In addition, there is now evidence that cultural differences of perception also exist within the domain of face processing. Since the seminal work conducted by Yarbus (1965), it has consistently been reported that when scanning human faces, observers fixate predominantly on the eyes and mouth region, forming a triangular scan path. It was assumed that this was a universal strategy that was likely to be optimal for encoding the diagnostic information that is known to be required to perform face recognition (e.g., Gosselin & Schyns, 2001). However, contrary to intuition, Blais, Jack, Scheepers, Fiset, and Caldara (2008) found that individuals from Eastern cultures fixate centrally on the nose region and generally avoid the eyes when learning, recognizing, and categorizing faces. This pattern of scanning is found consistently regardless of the race of the face being viewed and even persists when viewing inverted faces, which is known to typically disrupt natural perceptual strategies. Intriguingly, the strategy used by Westerners (fixations to discrete locations) is consistent with an analytical processing style, and the strategy used by Easterners (fixating a central point) is consistent with the holistic processing style reported in the perceptual literature described above. The differences between these strategies are not trivial; instead, they characterize profoundly antithetic ways to extract and process visual information. Such findings make it increasingly evident that prudence must be observed when generalizing empirical findings or attempting to map developmental trajectories across ethnic groups.

In their concluding remarks, Kelly and colleagues (2007b) advocated that future research must extend the reported findings to an additional ethnic population before any notion of universal development could be considered. In light of the literature cited above, it has never been more pertinent to further explore the developing face processing system across ethnic groups. Thus, the purpose of the experiment reported here was to explore whether our previous results can indeed be extended to a novel ethnic group, namely, Han Chinese.

Method

Participants

A total of 135 infants were included for the final analysis: 46 3-month-olds (age range = 89–98 days, 22 females and 24 males), 48 6-month-olds (age range = 182–197 days, 23 females and 25 males), and 41 9-month-olds (age range = 275–288 days, 18 females and 23 males). All participants were healthy full-term infants and were allocated to one of the three different ethnic testing conditions (African, Chinese, or Caucasian). All infants were Han Chinese and had been recruited from a community hospital in Hangzhou, People’s Republic of China, where the infants visited for routine checkups. In Hangzhou, Han Chinese represents 99.99% of the population. The infants had not previously received any direct contact with African or Caucasian individuals. Although it is likely that some infants would have been exposed to Caucasian and/or African individuals through television and billboard advertisements, previous studies have suggested that interaction with other-race individuals is more likely to reduce the ORE than mere exposure through film or advertising (e.g., Brigham & Malpass, 1985). Thus, even though some infants may have seen other-race faces, they had never interacted with African or Caucasian individuals. In addition to the infants included for final analysis, 18 3-month-olds were excluded due to a failure to habituate (not habituated after 3 mins, $n = 8$), side bias during testing (>95% looking time to one side, $n = 6$), or fussiness ($n = 4$); 11 6-month-olds were excluded due to a failure to habituate ($n = 4$), side bias during testing ($n = 4$), or fussiness ($n = 3$); and 6 9-month-olds were excluded due to a failure to habituate ($n = 2$) or fussiness ($n = 4$).

Stimuli

A total of 12 adults (age range = 23–27 years, 6 males and 6 females) from three different ethnic groups (4 African, 4 Chinese, and 4 Caucasian) served as models for the stimuli. Photographs were taken of each of the 12 adults in a full face orientation and a three-quarters profile orientation. Therefore, the stimuli created were 24 color images of male and female adult faces from three different ethnic groups (8 African, 8 Chinese, and 8 Caucasian). All faces had dark hair and dark eyes so that infants would be unable to demonstrate recognition on the basis of these features. The images used were photos of students. The Africans were members of the African and Caribbean Society at the University of Sheffield (Sheffield, UK), the Chinese were Han Chinese psychology students at Zhejiang Sci- Tech University (Hangzhou), and the Caucasians were psychology students at the University of Sheffield.

For all three ethnic groups, we tested male and female faces in separate conditions. The images for each combination of ethnic group and gender consisted of a habituation face and two test faces: a novel face and the familiar face. The two test faces were always displayed in the same orientation, and this orientation was different from the orientation of the face seen during habituation. There were two different orientation conditions. In one orientation condition, infants were habituated to frontal view faces and subsequently viewed the test faces in a three-quarters profile view. These views were reversed in the other orientation condition. By changing face orientation between habituation and test, we ensured that infants demonstrated genuine face recognition abilities rather than just picture matching.

All photos of the faces used as test stimuli were taken with a Canon S50 digital camera and subsequently were cropped using Adobe Photoshop (Adobe Systems, San Jose, CA, USA) to remove the neck and background detail. All individual pictures were then mounted on a uniform dark gray background and resized identically to ensure uniformity. A total of 16 independent observers from a range of ethnic groups (Caucasian [$n = 8$], Chinese [$n = 5$], and African [$n = 3$]) rated a pool of 24 individual faces (all frontal view) for attractiveness and distinctiveness using a scale from 1 to 10. The final set of 12 face identities (4 African, 4 Chinese, and 4 Caucasian) were paired according to ethnicity and gender (6 pairs: 1 male pair and 1 female pair for each of the three ethnic groups) and were of comparable attractiveness and distinctiveness ratings (see Fig. 1 for sample stimuli).

Procedure

Each infant was tested in a quiet infant lab at the community hospital in Hangzhou. The infant was seated on the mother's lap approximately 60 cm away from a 42-inch Toshiba plasma television on which the images were displayed. The mother could also see the images displayed on the screen, but because the infant was seated facing away from the mother, behavior could not be influenced by the mother's eye movements. In addition, to further reduce the likelihood of parental influence, the mother was instructed before testing to fixate centrally above the screen and to remain as quiet as possible throughout the session. Each infant was pseudo-randomly assigned to one of the three ethnic group conditions (African, Chinese, or Caucasian). In the final sample, the numbers of male and female infants participating in each ethnic condition were approximately equal. Within each condition, infants were tested with either male or female faces. Testing was counterbalanced appropriately with infants divided as evenly as possible between male and female face conditions.

Habituation phase

The infant was first presented with a single face measuring 18 × 18 cm (14° visual angle) displayed on a screen measuring 45 × 30 cm. A color charge-coupled device (CCD) camera (specialized for low light conditions) was positioned above the screen and displayed on a monitor to the experimenter in a room next door. This enabled the experimenter to observe the infant's eye movements throughout testing. Eye movements were recorded at 25 frames per second. Attention to the face was recorded by the experimenter by pressing the *z* key on a keyboard at all times when the infant fixated the image. When the infant averted his or her attention from the image, the experimenter released the key. Once the infant's attention was averted for more than 2 s, the image disappeared from the screen and the trial ended. The experimenter then presented the image again and repeated the procedure, with the next trial beginning when the infant fixated the stimulus again. Habituation ceased when the infant's looking time on any trial, from the third trial onward, was equal to or less than 50% of the average looking time from the infant's first two trials. Thus, our measure of looking time was the sum of looking across all trials until the habituation criterion was reached.

Test phase

The test phase consisted of two trials. First, two faces (novel and familiar) measuring 18 × 18 cm (14° visual angle) were displayed to the infant on the television screen. The faces appeared on the left and right sides of the screen and were separated by a 9-cm gap. At the point of the infant's first look to the screen, the experimenter pressed a key to begin a 5-s countdown. At the end of the 5 s, the faces disappeared from the screen. The faces were then displayed a second time with their left and right positions reversed on the screen. At the point of the infant's first look, the 5-s countdown was again initiated. Eye movements were recorded throughout, and the film was digitized to be analyzed frame by frame by two independent observers on a computer using specialized software. For each frame, observers coded whether the infant was looking at the image on the left, at the image on the right, or away from the screen. Importantly, the observers did not know which ethnic conditions they were coding or the left/right positions of the novel and familiar faces. Total looking times to the images were then calculated by summing the time spent looking at the images across both test trials. The average level of interobserver agreement was high (Pearson's $r = .97$). Recognition was inferred from a preference for the novel face stimulus across the two 5-s test trials.

Results

Habituation trials

Preliminary analysis revealed no significant gender differences of stimuli or participants, so data were combined for further analysis. A 3 (Age: 3, 6, or 9 months) × 3 (Face Condition: African, Chinese, or Caucasian) × 2 (Face Orientation: full face or profile) between-participants analysis of variance (ANOVA) was conducted on habituation time. The ANOVA yielded only a significant effect of age, $F(2,178) = 101.556$, $p < .0001$, $\eta_p^2 = .659$. Post hoc Tukey's honestly significant difference (HSD) tests revealed significant differences among all three age groups. The 3-month-olds ($M = 105.82$ s, range = 65.35–171.48) habituated more slowly than both the 6-month-olds ($M = 59.86$ s, range = 31.62–138.74, $p < .0001$) and the 9-month-olds ($M = 47.39$ s, range = 27.15–69.65, $p < .0001$). Furthermore, 9-month-olds habituated significantly faster than 6-month-olds ($p < .012$). There were no main effects of face condition or face orientation, nor were there any interactions.

Test trials

Preliminary analysis again found no significant gender differences of stimuli or participants, so data were combined for further analysis. A 3 (Age: 3, 6, or 9 months) × 3 (Face Condition: African, Chinese, or Caucasian) × 2 (Orientation: full face or profile) between-participants ANOVA was conducted on the percentage of looking time to the novel stimulus combined from both trials of the test phase. The ANOVA yielded a significant effect of ethnicity, $F(2,178) = 3.219$, $p < .044$, $\eta_p^2 = .052$. Post hoc Tukey's HSD tests revealed that novelty preferences in the Chinese face condition ($M = 59.54\%$) were significantly greater ($p < .047$) than novelty preferences in the African face condition ($M = 53.77\%$) and marginally greater ($p = .064$) than novelty preferences in the Caucasian face condition ($M = 53.97\%$). The ANOVA also yielded a marginal main effect of age, $F(2,178) = 2.904$, $p = .059$, $\eta_p^2 = .047$. Post hoc Tukey's HSD tests revealed that 3-month-olds' novelty preferences ($M = 59.07\%$) were significantly greater ($p < .045$) than 9-month-olds' novelty preferences ($M = 53.13\%$). There was no main effect of orientation, nor were there any interactions.

To investigate novelty preferences for individual ethnic face categories within each age group, a series of two-tailed *t* tests comparing time spent looking at the novel stimulus versus chance (50%) were conducted (see Table 1). The results showed that 3-month-olds demonstrated significant novelty preferences in all three face conditions, whereas 6- and 9-month-olds demonstrated significant novelty preferences only in the Chinese face condition. It should also be noted that 6-month-olds' novelty preference in the Caucasian condition just failed to reach statistical significance ($p < .067$) and would have been significantly different from chance if a one-tailed criterion had been adopted ($p < .033$).

Discussion

Previous reports have shown that the ORE develops early in life in Caucasian infants (Hayden et al., 2007; Kelly et al., 2007b; Sangrigoli & de Schonen, 2004b). The purpose of this study was to investigate whether the developmental pattern reported by Kelly and colleagues (2007b) extends to an additional ethnic group, namely, Han Chinese. Our results provide evidence to support the notion that the ORE develops at the same point during ontogeny in Chinese infants. Han Chinese infants recognized both own- and other-race faces at 3 months of age. Over the subsequent 3 to 6 months, the ability to recognize own-race faces was retained, whereas the capacity to individuate other-race faces was simultaneously reduced, demonstrating a pattern of perceptual narrowing.

It is necessary to delineate the subtle differences between the results obtained by Kelly and colleagues (2007b) and those reported here. Kelly and colleagues reported a gradual emergence of the ORE, with the most dramatic phase of perceptual narrowing occurring between 6 and 9 months of age. Accordingly, they concluded that the ORE is partially present at 6 months of age but not fully entrenched until 9 months of age. In contrast, in the current study, at first glance it would appear that the ORE is fully present in Chinese infants at just 6 months of age. However, we have reasons to challenge this interpretation of events. First, as noted above, in the current study the preference for Caucasian faces at 6 months of age was only marginally nonsignificant, $t(15) = 1.975$, $p < .067$, and was significant when a one-tailed criterion was adopted ($p < .033$). Second, due to testing constraints, we were able to investigate Chinese infants with only three categories of stimuli as opposed to the four categories used by Kelly and colleagues previously. The Caucasian 6-month-old group in that study showed evidence of recognition with only one category of other-race faces in addition to own-race faces. Therefore, it is possible that we might have obtained a significant result with additional categories of face stimuli and fully replicated the findings reported with Caucasian infants. Thus, although the results obtained in the current study point toward an earlier inception of the ORE in Chinese infants, the pattern of results obtained in the current study is actually quite similar to that reported by Kelly and colleagues (2007b).

It is worth noting that the stimuli used in the current study were identical to those used by Kelly and colleagues (2007b) and that although the patterns of results were essentially similar, Caucasian and Chinese infants actually responded differently to the stimulus sets. More explicitly, Caucasian infants individuated Caucasian faces but not Chinese faces at 9 months of age, whereas Chinese infants individuated Chinese faces but not Caucasian faces at 9 months of age. Importantly, this strongly suggests that the results reported here and by Kelly and colleagues previously cannot be attributed to specific stimulus characteristics; instead, they are driven by genuine differences in own- and other-race face processing during infancy.

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If we collectively consider the current results and those reported previously involving British, French, American, Chinese, Israeli, and Ethiopian infants, we can conclude that (a) the ability to make between-race preference-based classificatory judgments is present at 3 months of age (Bar-Haim, Ziv, Lamy, & Hodes, 2006; Kelly et al., 2005, 2007a, b) the ability to individuate within-race (i.e., no presence of the ORE) is also achievable at 3 months of age but declines rapidly during the subsequent 6 months. Furthermore, the points during ontogeny at which these abilities rise and fall have been reported at identical ages in infants from disparate populations. Therefore, it becomes critical to ask why the ORE develops so rapidly, what its functional purpose is, and how it relates to the own-race face preference observed in 3-month-olds? Although it is currently not possible to answer these questions definitively, couching the current results in terms of "other-group" face processing (i.e., processing faces belonging to *any* category such as species or race not typically found in the infants' visual environment) will allow us to conjecture about possible responses to these issues.

Within the first months of life, infants display remarkable abilities of categorization of certain classes of objects, such as animals and furniture, despite limited exposure to exemplars from these groups (e.g., Quinn, 2002). In short, infants possess a propensity to classify objects on the basis of perceptual similarity. Although this ability is highly impressive, it is arguably more remarkable that infants rapidly demonstrate within-group categorization of faces. Visual preference studies have indirectly shown that 3-month-olds categorically differentiate faces according to gender (Quinn, Yahr, Kuhn, Slater, & Pascalis, 2002) and ethnicity (Bar-Haim et al., 2006; Kelly et al., 2005, 2007a). Differential recognition capabilities are also observed for gender at 3 months of age (Quinn et al., 2002) in addition to species (Pascalis, de Haan, & Nelson, 2002; Pascalis et al., 2005) and ethnicity (Kelly et al., 2007b) by 9 months of age. Furthermore, there is an interaction between gender and ethnicity, with Caucasian infants failing to display a gender preference with other-race faces (Quinn et al., 2008). From an evolutionary perspective, responding cautiously toward anybody whose physical attributes are unfamiliar and, accordingly, classifying that individual as an other-group member is an indispensable ability because the likelihood of reproduction in an organism that is unable to detect potential threat will be reduced dramatically. Accordingly, it seems that all species appear to be capable of performing this basic function (e.g., Baron-Cohen, 1995). This interpretation is also supported by results from classification tasks with adults (e.g., Caldara, Roisson, Bovet, & Hauert, 2004; Levin, 1996), which have consistently found that other-race faces are detected more readily and classified more rapidly than ownrace faces. Collectively, the findings from both infants and adults suggest that we begin to display sensitivity to race at a very early age and continue to show differences related to classification throughout the lifespan.

Further support for this view comes from the comparative literature, which has revealed that a preference for conspecifics' faces is not particular to humans. Face preferences have also been reported in pigtailed macaques (*Macaca nemestrina*) (Lutz, Lockard, Gunderson, & Grant, 1998), Japanese macaques (*Macaca fuscata*) (Kuwahata, Adachi, Fujita, Tomonaga, & Matsuzawa, 2004), gibbons (*Hylobates agilis*) (Myowa-Yamakoshi & Tomonaga, 2001), and sheep (*Ovis aries*) (Kendrick, Atkins, Hinton, Heavens, & Keverne, 1996). Furthermore, available data show that chimpanzees (*Pan troglodytes*) (Boysen & Berntson, 1986; Tomonaga, Itakura, & Matsuzawa, 1993), longtail macaques (*Macaca fascicularis*), pigtailed macaques (Kim, Gunderson, & Swartz, 1999), and rhesus macaques (*Macaca mulatta*) (Parr, Winslow, Hopkins, & de Waal, 2000; Pascalis & Bachevalier, 1998) are able to recognize conspecifics' faces at the individual level. In a dramatic demonstration of perceptual narrowing, Sugita (2008) tested infant Japanese macaques that were separated from their parents at birth and reared by humans for a period of 6 to 24 months. Throughout this period, they received no exposure to other monkeys, and their human caregivers wore masks. All monkeys displayed a preference for faces over objects, but no preference for monkey faces over human faces, and demonstrated recognition abilities with faces from both categories despite no exposure to faces. Following deprivation, when monkeys were introduced to either macaque or human faces, their behavioral performance was altered dramatically. Monkeys subsequently displayed a preference for the category of faces to which they were exposed over the other category and displayed individuation only with their familiar category of faces. This finding offers support for the view that primates possess a genetic predisposition to look at faces in general, but specific within-category preferences and differential recognitions abilities are subsequently formed through visual experience.

Empirical findings from human newborns (e.g., Kelly et al., 2005; Quinn et al., 2008) have demonstrated that preference-based classificatory judgments (i.e., preference for the gender of the primary caregiver and same race over other race) are not performed at birth (presumably due to a lack of exposure to faces in general) but instead begin to emerge from 3 months of age. It is our contention that we have been equipped with the capacity to rapidly perceive even subtle differences in physical attributes that facilitate classificatory responses and ultimately serve to aid survival by allowing us to detect individuals from unfamiliar groups. Furthermore, the ability to individuate faces that are classified as “other group” is consequently reduced. This notion that automatic classification of other-race faces results in “shallower” processing for such faces is not novel (e.g., Chance & Goldstein, 1981), yet direct evidence for this view remains elusive. A challenge for future research will be to elucidate the precise nature of the assumed relationship between classification and recognition, as described above. In addition, understanding which aspects of face processing are subject to cultural influence, as reported in adults (Blais et al., 2008), and which aspects are resistant represents a major obstacle, but one that offers to transform our understanding of face processing. It is our belief that developmental research will be at the forefront of attempts to clarify these issues as the emergence of strategic cultural differences can be observed by testing across age groups.

To summarize, for the first time, we have offered evidence to suggest that the ORE could develop universally during infancy. Chinese infants performed comparably to Caucasian infants, as reported in a previous study (Kelly et al., 2007b), despite growing up in different visual and social environments. However, it remains possible that infants raised in atypical (e.g., biethnical) environments might develop differential recognition abilities at a different stage during ontogeny (Bar-Haim et al., 2006; Sugita, 2008). It will be important for future research to address this question. In conclusion, the development of the ORE occurs early in life and is likely to originate from differential visual input of face categories and evolutionary pressures that have provided us with heightened sensitivity to other-race faces and other-group members in general.

Acknowledgments

This research was supported by an Economic and Social Research Council postdoctoral fellowship (PTA-026-27-1678) awarded to David J. Kelly and a National Institute of Health grant (R01 HD-46526) awarded to Kang Lee.

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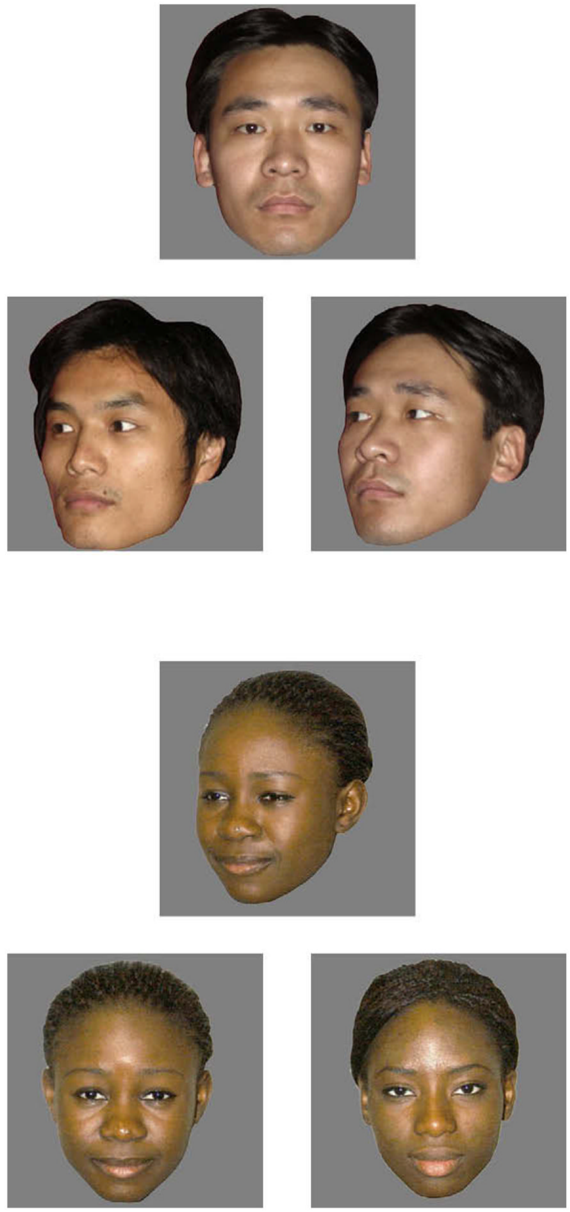

Fig. 1.
Sample stimuli from Chinese male and African female conditions.

Table 1

Results from the novelty preferences test by age group and face ethnicity.

Age	Face ethnicity	Mean time looking at novel face[a] (%)	*t* (*df*)	p^b	p_{rep}
3 months	African	58.55 (14.76)	2.316 (15)	.035*	.899
	Caucasian	57.04 (9.94)	2.650 (13)	.020*	.926
	Chinese	61.36 (15.66)	2.904 (15)	.011*	.947
6 months	African	50.02 (10.42)	0.008 (15)	>.05	.039
	Caucasian	54.25 (8.61)	1.975 (15)	>.05	.855
	Chinese	59.50 (10.63)	3.572 (15)	.003*	.975
9 months	African	52.75 (9.99)	1.101 (15)	>.05	.653
	Caucasian	50.59 (10.80)	0.205 (13)	>.05	.240
	Chinese	56.93 (7.96)	2.889 (10)	.016*	.934

[a]Standard deviations for looking times are in parentheses.

[b]Asterisks highlight conditions in which the infants viewed novel faces significantly more often than by chance.