Supplementary Materials for:
Infants' visual attention to own- and other-race faces is moderated by experience with diverse others in their daily lives

Section 0: Coding

Coding proceeded in five steps using the platform Datavyu (Datavyu Team, 2014). All coding occurred at the level of individual frames. All coders were blind to what face pair was displayed in each trial, as well as which face was on which side of the screen. Coders could only see the babies, their parents (as applicable), and hear the sounds of attention-getters between trials (if videos contained sound). The six steps proceeded as follows:

1. The lead author set up all Datavyu files to ensure the timing of trials from Qualtrics lined up with the timing in all videos.
2. The lead author or one of two trained undergraduate research assistants coded whether the infant was looking at the computer or not for the duration of the calibration and all 12 trials.
3. The lead author or a trained undergraduate research assistant coded whether the parent's eyes were closed or not for the duration of all 12 trials.
4. After the second and third steps were complete, the lead author selected all trials that met inclusion criteria (see Exclusion Criteria in the manuscript) for the fourth stage of coding.
5. A team of four undergraduate research assistants coded the 203 videos for whether the infant was looking at the left, right, center, offscreen, or indeterminant for the calibration and all valid trials. If a frame was deemed indeterminate, the first author examined the video and resolved coding for all but two instances where the frames were too blurry to determine location of looking. This is the primary coding and is the data used in all analyses.
6. 25% of all files (n = 51) were randomly selected to be reliability coded for the infant's looking direction by the lead author or an undergraduate research assistant. Intraclass correlations (ICC; absolute agreement) were calculated for the fixation percentage for faces on the left side of the screen of each trial, total time spent looking at the left face of each trial, and total time spent looking at the right face of each trial across the 51 videos (total trials = 584). All three correlations were excellent, ICC(3,1) = .91, ICC(3,1) = .93, and ICC(3,1) = .94, respectively.

Section 1: Data Quality Check

In this section, we visualize the distribution of our independent and dependent variables as well as additional data quality checks. The independent variables are infant age, racial-ethnic entropy in neighborhoods and social networks, and proportion racial-ethnic outgroup in neighborhoods and social networks. The dependent variable is total looking time. We also describe the relationship (or lack thereof) among different features of our study design (e.g., age and number of trials completed).

Figure S1

Histogram of Infants' Age in Months

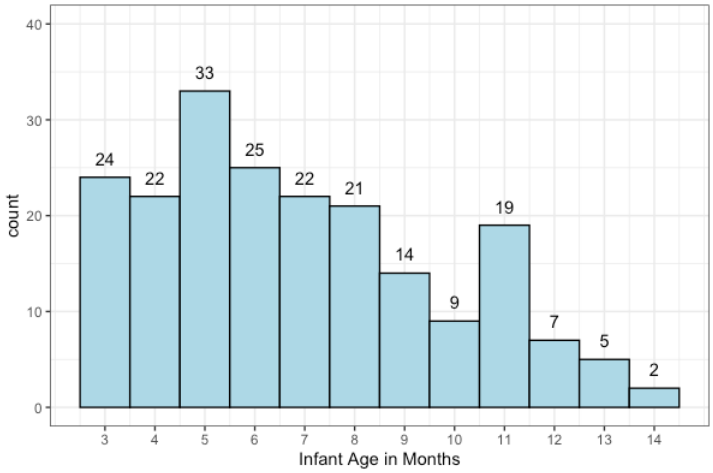


Figure S2

Number of Trials Completed by Infant Age

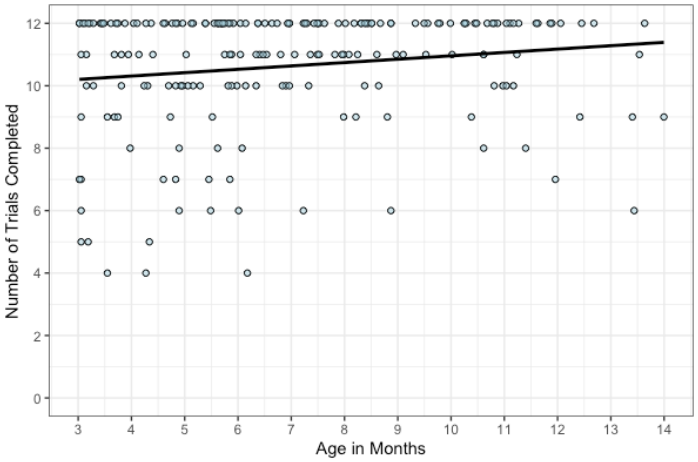


Figure S3

Average Time Spent Looking at Trials by Infant Age

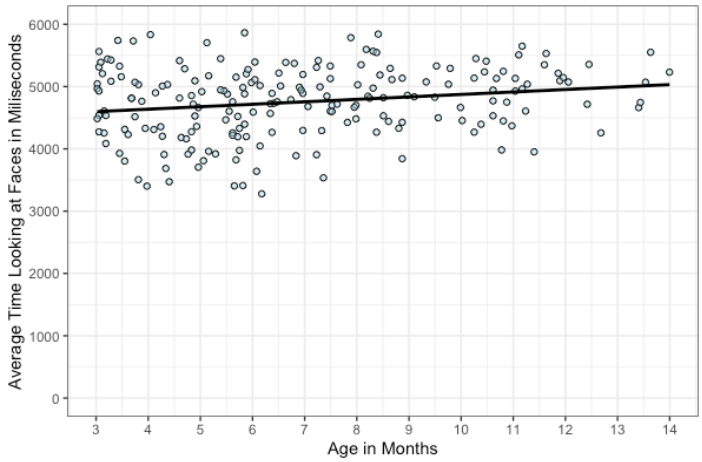
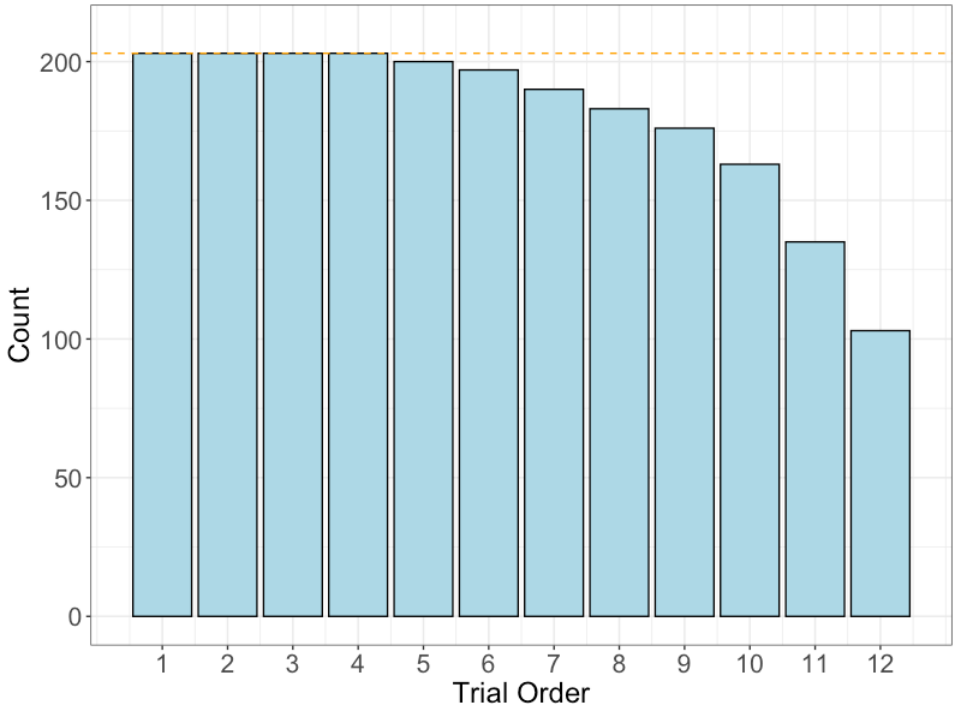


Figure S4

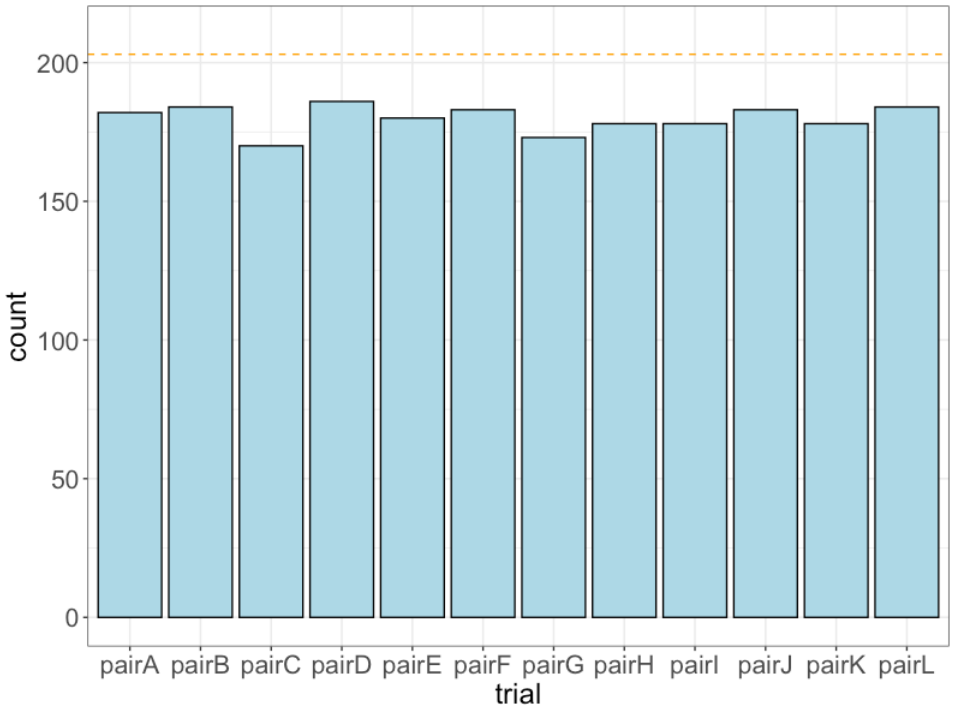
Number of Infants Who Completed Each Trial by Trial Order



Note. Dashed orange line represents total number of infants (*N* = 203).

Figure S5

Number of Infants Who Completed Each Trial

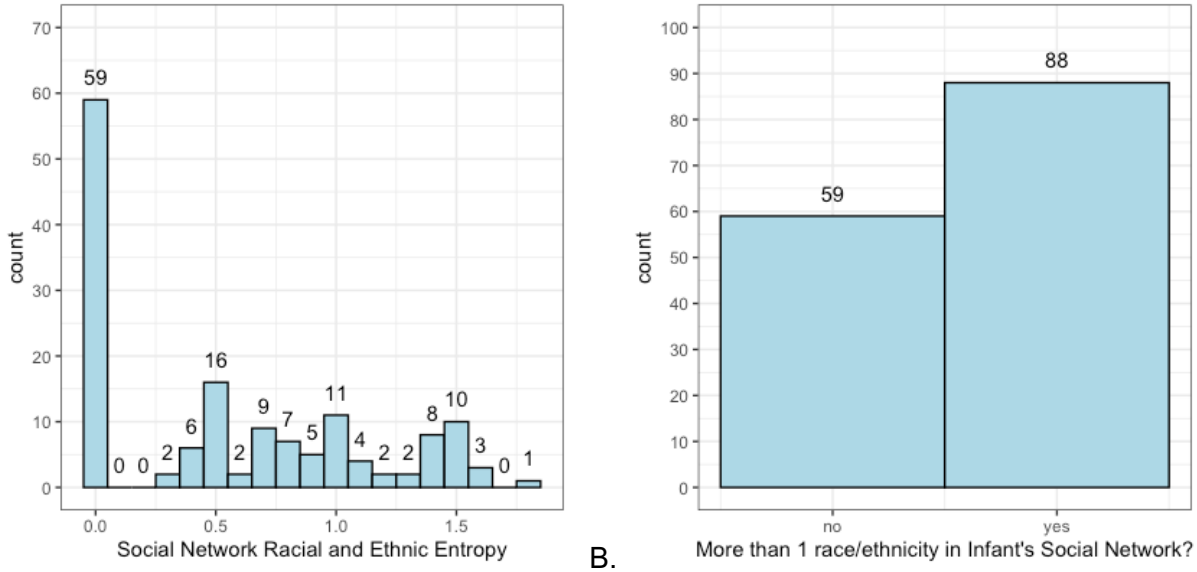


Note. Dashed orange line represents total number of infants (*N* = 203).

Social Network and Neighborhood Diversity: Entropy (analyses presented in main text)

Figure S6

Histogram of Racial-Ethnic Entropy in Infants' Social Network

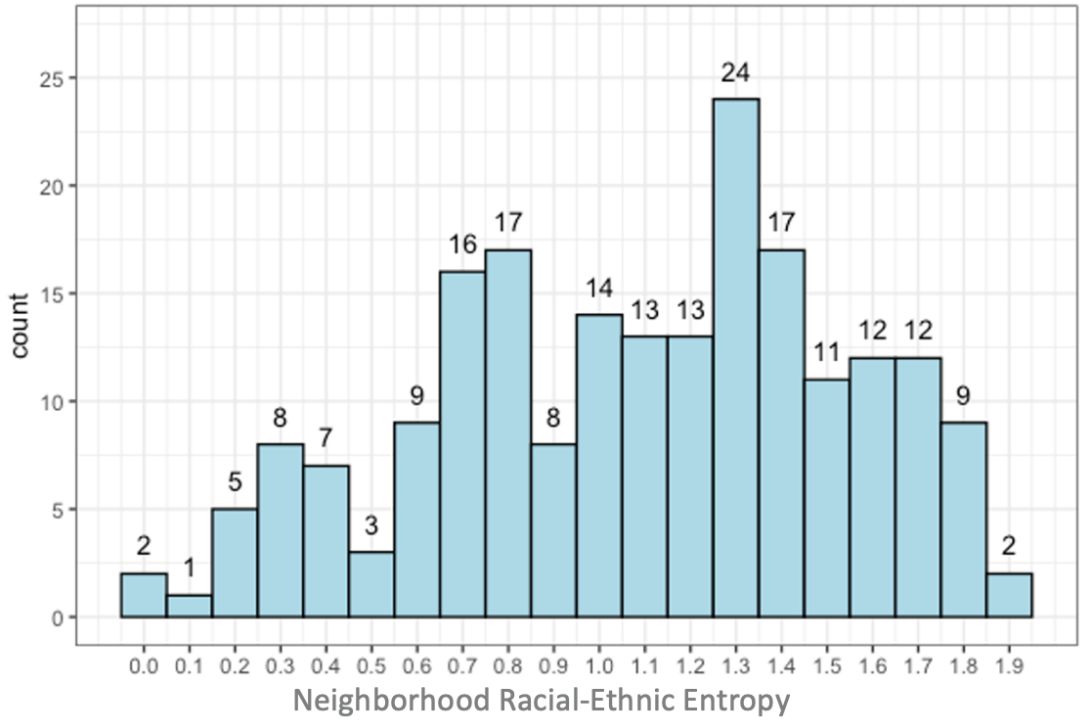


A. B.

Note. Panel A depicts the distribution of the racial-ethnic entropy in infants' social network as a continuous variable. Given the strong skew, we dichotomized this variable for all analyses, resulting in the distribution shown in Panel B.

Figure S7

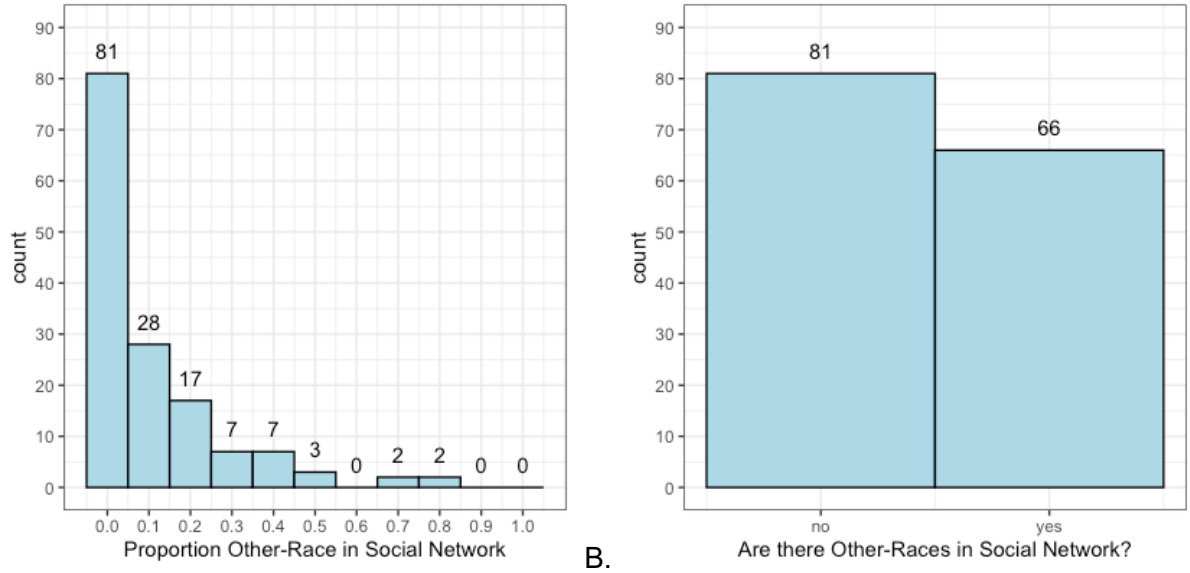
Histogram of Racial-Ethnic Entropy in Infants' Neighborhoods



Social Network and Neighborhood Diversity: Proportion Other-Race People (analyses presented in SOM)

Figure S8

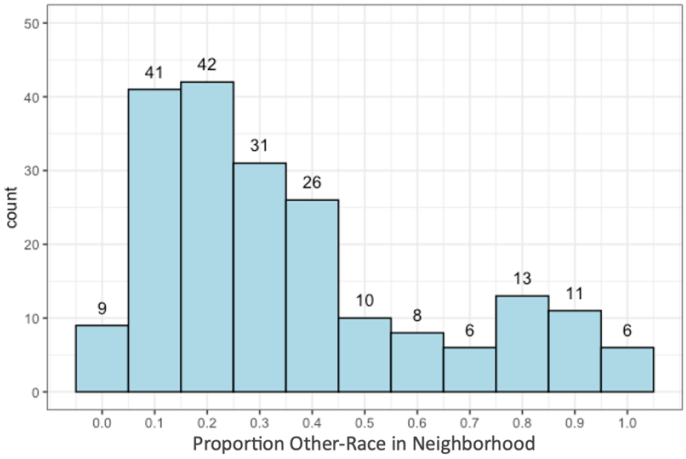
Histogram of the Proportion of Racial-Ethnic Outgroup Members in Infants' Social Network



Note. Panel A depicts the distribution of the proportion of other-race people in infants' social network as a continuous variable. Given the strong skew, we dichotomized this variable for all analyses, resulting in the distribution shown in Panel B.

Figure S9

Histogram of Proportion of Racial-Ethnic Outgroup Members in Infants' Neighborhoods



Section 2: Main Analyses Regression Tables

In this section, we report the regression tables for all results reported in the main text. All predictors are mean-centered to facilitate interpretation of lower-order effects, similar to an Anova table.

Table S1

Linear Mixed-Effects Regression Results for Infants' Attention to Own- and Other-Race Faces by Infant Age

	Full Model			**No Age Predictor**		
Predictors	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*
(Intercept)	2395.9	27.2	<0.001	2398.1	27.2	<0.001
Own-Race (Own-Race = 1, Other-Race = 0)	−288.1	54.5	**<0.001**	−288.7	54.4	**<0.001**
Age	0.6	0.3	0.065			
Own-Race * Age	−0.1	0.6	0.817			
N	12 $_{trial}$			12 $_{trial}$		
	203 $_{ID}$			203 $_{ID}$		
Observations	2250			2250		
Marginal R^2	0.014			0.012		

Note. Estimates (with standard error) and goodness-of-fit statistics for the two separate linear mixed effects models regressing infants' time spent looking at a face on whether the face was an own-race or other-race face (own-race = 1, other-race = 0, mean-centered; "No Age") and infants' age in days (mean-centered), and an interaction term ("Full Model"). Both models included a random intercept for participant ID and a random intercept for face pair.

Table S2

Linear Mixed-Effects Regression Results for Infants' Attention to Own- and Other-Race Faces by Binary Social Network Diversity

	Binary Entropy			**Binary Entropy (no age predictor)**			**Binary Proportion Outgroup**		
Predictors	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*
(Intercept)	2405.2	32.3	<0.001	2412.2	32.2	<0.001	2405.4	32.6	<0.001
Own-Race	−210.9	64.7	**0.001**	−222.6	64.4	**<0.001**	−190.1	65.3	**0.004**
Age	0.7	0.4	0.068				0.6	0.4	0.107
Binary Diversity	−96.4	66.2	0.145	−84.7	65.9	0.199	−3.0	65.9	0.964
Own-Race * Age	−0.3	0.8	0.735				−0.5	0.8	0.531
Own-Race * Binary Diversity	402.6	132.3	**0.002**	398.2	131.9	**0.003**	321.0	131.7	**0.015**
Age * Diversity	1.2	0.8	0.128				0.6	0.8	0.438
Own-Race * Age * Binary Diversity	−2.7	1.5	0.077				−4.1	1.6	**0.010**
N	12_{trial}			12_{trial}			12_{trial}		
	147_{ID}			147_{ID}			147_{ID}		
Observations	1616			1616			1616		
Marginal R^2	0.019			0.014			0.016		

Note. Estimates (with standard error) and goodness-of-fit statistics for the two separate linear mixed effects models regressing infant's time spent looking at a face on infants' age in days (mean-centered), which face (own-race = 1, other-race = 0, mean-centered), the diversity of infants' social network, and all interactions. Both models included a random intercept for participant ID and a random intercept for face pair. The first model includes the racial-ethnic entropy of infants' social networks (1 = any diversity, 0 = no diversity, mean-centered) as the "Binary Diversity" predictor. The second model is the same as the first, just without the age predictor variable (as it did not improve model fit; reported in main text). The third model includes the number of racial and ethnic outgroup members in an infants' social networks (1 = more than one other-race or other-ethnic infants' social network, 0 = no other-race people in infants' social network, mean-centered) as the "Binary Diversity" predictor.

Table S3

Linear Mixed-Effects Regression Results for Infants' Attention to Own- and Other-Race Faces by Neighborhood Diversity

		Entropy			**Proportion Other-Race**	
Predictors	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*
(Intercept)	2395.2	27.3	<0.001	2396.1	27.3	<0.001
Own-Race	−291.4	54.7	**<0.001**	−288.3	54.5	**<0.001**
Age	0.6	0.3	0.066	0.6	0.3	0.064
Diversity	4.9	60.3	0.935	11.0	99.7	0.912
Own-Race * Age	−0.1	0.6	0.831	−0.2	0.6	0.815
Own-Race * Diversity	5.0	120.5	0.967	−50.0	199.4	0.802
Age * Diversity	0.3	0.8	0.716	0.9	1.2	0.446
Own-Race * Age * Diversity	1.3	1.5	0.403	−0.3	2.4	0.890
N	12_{trial}			12_{trial}		
	203_{ID}			203_{ID}		
Observations	2250			2250		
Marginal R^2	0.014			0.014		

Note. Estimates (with standard error) and goodness-of-fit statistics for the two separate linear mixed effects models regressing infants' time spent looking at a face on infants' age in days (mean-centered), which face (own-race = 1, other-race = 0, mean-centered), the diversity of infants' neighborhoods, and all interactions. Both models included a random intercept for participant ID and a random intercept for face pair. The first model includes the racial and ethnic entropy of infants' neighborhoods as the "Diversity" predictor. The second model includes the proportion of racial-ethnic outgroup members in infants' neighborhoods as the "Diversity" predictor. Infants looked longer at other-race than own-race faces, regardless of the diversity of infants' neighborhoods.

Section 3: Supplementary Analyses

In this section, we report results for 5 preregistered supplementary analyses (summarized in the main text).

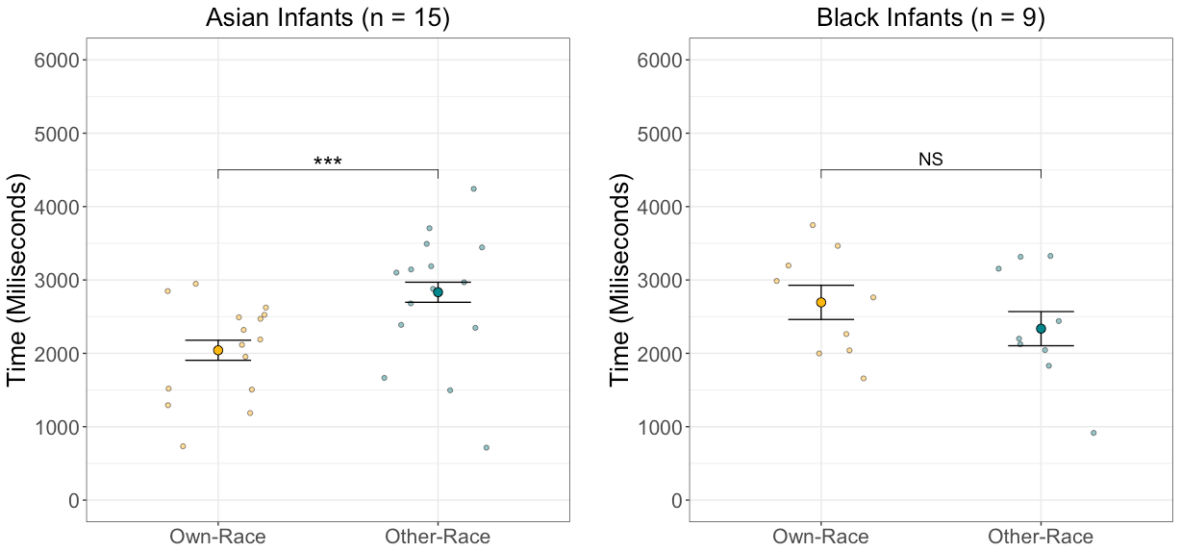
Section 3A: Does infant race moderate infant attention to own- and other-race faces?

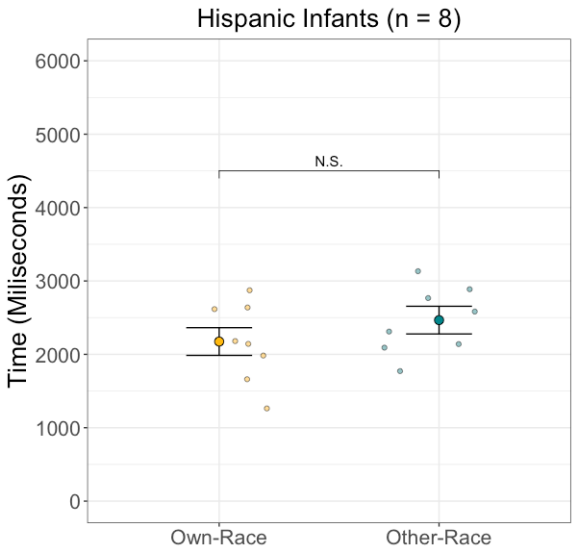
We were interested in how infants' own racial and ethnic identity—and thus, in most cases, the racial and ethnic identity of the close family members they see most—might shape their visual attention for own- and other-race faces. To address this question, we grouped infants into five racial and ethnic groups—monoracial Asian, monoracial Black, monoethnic Hispanic, monoracial White, and Multiracial/ethnic. As in the analyses reported in the main text, our analysis of Asian (*n* = 15), Black (*n* = 9) and White (*n* = 130) infants includes only monoracial, non-Hispanic infants of those racial identities. Hispanic infants are those who were identified by their parents as only Hispanic (no racial group specified; *n* = 8). Infants who were identified as more than one racial/ethnic group (e.g., Black-Hispanic, Asian-White) are grouped as 'Multiracial' (*n* = 41).

The overall pattern in which infants in our sample looked longer at other-race than own-race faces across age held for Asian infants (b = −792.6, *SE* = 193.6, *p* < .001; Figure S10 Panel A), White infants (b = −270.6, *SE* = 69.5, *p* < .001; Figure S10 Panel D), and Multiracial infants (b = −307.3, *SE* = 131.2, *p* = .020; Figure S10 Panel E). Hispanic and Black infants looked equally long at other-race than own-race faces, though this effect should be interpreted cautiously as there were very few Black and Hispanic infants in this sample (Wald X^2(1)s < 1.21, *p*s > . 276; Figure S10 Panels B and C).

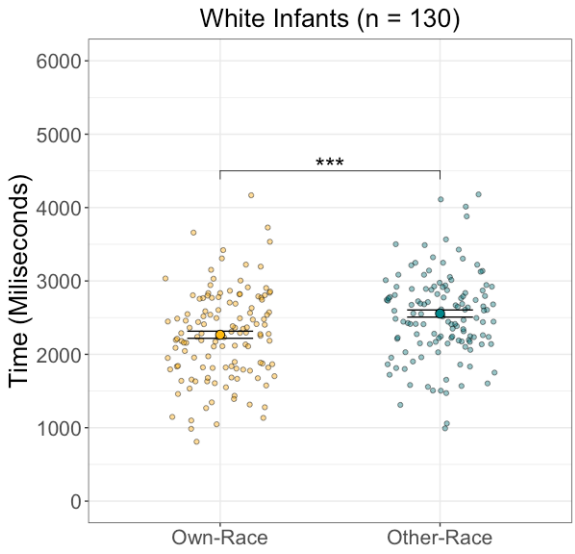
Figure S10

Infants' Attention to Own-Race vs. Other-Race faces by Infant Race/Ethnicity

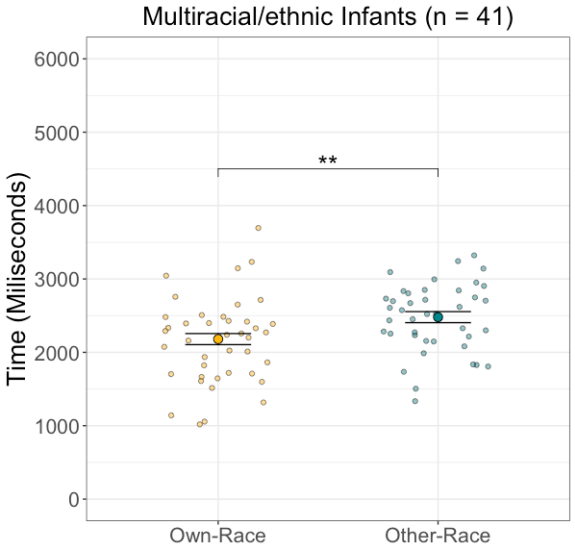




C.



D.



E.

Note. Large dots are predicted effects, error bars are standard errors, small dots are individual data points. For Asian Infants (A), there was a 0.61 *SD* gap favoring looking longer at other-race than own-race faces. For Black infants (B), there was a 0.22 SD gap favoring looking longer at own-race than other-race faces, though this gap was not statistically significant. For Hispanic infants (C), there was a 0.23 *SD* gap favoring looking longer at other-race than own-race faces, though this gap was not statistically significant. For White infants (D), there was a 0.21 *SD* gap favoring looking longer at other-race than own-race faces. For multiracial infants (E), there was a 0.26 *SD* gap favoring looking longer at other-race than own-race faces.

To summarize, infants' own race moderated their tendency to look longer at other-race than own-race faces. While Asian, White, and Multiracial infants looked longer at other-race faces than own-race faces, this pattern did not reach significance for Hispanic infants and was in the opposite—though again, non-significantly so—direction for Black infants. However, given

the small sample of Black (*n* = 9) and Hispanic (*n* = 8) infants in this sample, we hesitate to overinterpret the present findings.

Table S4

Linear Mixed-Effects Regression Results for Infants' Attention to Own- and Other-Race Faces by Infant Race/Ethnicity

	Monoracial Asian Infants			**Monoracial Black Infants**			**Monoethnic Hispanic Infants**			**Monoracial White Infants**			**Multiracial Infants**		
Predictors	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*
(Intercept)	2428.2	96.8	<0.001	2516.1	164.7	<0.001	2322.1	133.3	<0.001	2413.2	34.8	<0.001	2322.5	53.5	<0.001
Own-Race (Own-Race = 1, Other-Race = 0)	−792.6	193.6	**<0.001**	370.7	329.4	0.263	−297.3	266.7	0.268	−270.6	69.5	**<0.001**	−310.3	107.1	**0.004**
Age	2.3	1.1	**0.043**	0.3	1.8	0.859	1.1	1.5	0.487	0.3	0.4	0.508	1.0	0.6	0.110
Own-Race * Age	0.4	2.3	0.868	6.6	3.6	0.073	−3.3	3.0	0.274	−0.8	0.8	0.358	1.5	1.3	0.245
N	6_{trial}			6_{trial}			6_{trial}			6_{trial}			12_{trial}		
	15_{ID}			9_{ID}			8_{ID}			130_{ID}			41_{ID}		
Observations	162			100			88			1404			496		
Marginal R^2	0.115			0.044			0.032			0.012			0.023		

Note. Estimates (with standard error) and goodness-of-fit statistics for the four separate linear mixed effects models regressing infants' time spent looking at a face on infants' age in days (mean-centered), which face (own-race = 1, other-race = 0, mean-centered), , and an interaction term. There are five separate models: one for monoracial Asian infants, one for monoracial Black infants, one for monoethnic (no race noted) Hispanic infants, one for monoracial White infants, and one for multiracial infants. All five models included a random intercept for participant ID and a random intercept for face pair.

Section 3B: Does exposure to other-race people in infants' environments moderate attention to own- and other-race faces?

As detailed in the main text, social network and neighborhood diversity can be described in two ways: 1) in terms of the *absolute* presence of different social categories and 2) in terms of how diverse the network is *relative* to the child. Because infants aren't yet aware of their own racial and ethnic identity, we focused on the first measure—the absolute presence of different social categories—in the main text. Here, we include analyses by the second measure: how diverse the environment is relative to the infant. We operationalize this variable as the *proportion of racial-ethnic outgroup* members in (a) a child's social network (dichotomized, see below) and (b) a child's neighborhood.

Proportion of Other-Race Members in the Social Network. To calculate the proportion of other-race members in the network, each person in the network needed to be classified as either an other-race member or own-race member. For monoracial infants, this calculation is quite simple–any person in the network that shares the same race or ethnicity as the infant is coded as an own-race member, and all others are coded as other-race members. For the multiracial infants, a person in the network was considered an own-race member if they shared any of the races or ethnicity of the infant. For example, for a Black-White multiracial infant, any person in the network that was White *or* Black would be coded as an own-race member. Given the strong skew in the proportion of racial outgroup members in infants' social networks (see Figure S4 Panel A), we dichotomized this variable into two groups: infants with only own-race people in their network (no diversity or "only own-race", $n = 81$) and infants with any other-race person in their network (any diversity or "any other-race", $n = 66$).

Proportion of Other-Race Members in a Neighborhood. To calculate the proportion of other-race individuals in an infant's neighborhood, we summed the total number of other-race individuals in the neighborhood and divided that by the neighborhood's total population. For example, for monoracial Asian infants, we took the total number of people in infants' neighborhoods, subtracted the number of Asian people in their neighborhoods, and divided that by the total population of the neighborhood to get the proportion of other-race faces in the neighborhood. For multiracial infants, we took the total population in infants' neighborhoods and subtracted the total number of people with each racial identity possessed by the infant (as reported by infants' parents, e.g., Asian and White for Asian-White biracial infants) and divided the resulting number by the total population. For infants who were only identified as Hispanic, we divided the total number of non-Hispanic people by the total population in the neighborhood. For infants who were identified as a racial group and Hispanic, we took the total population of infants' neighborhoods and subtracted the racial group(s) specified as well as the number of Hispanic people who simultaneously identified with that racial group (e.g., for a Black-Hispanic infant, we summed Black and Black-Hispanic) and divided by total population.

Note: The key difference between entropy (as reported in the main text) and the proportion of racial outgroup is perhaps most evident in the case of multiracial infants. For example, a Black-White biracial infant could have only Black and White people in their social network, which would be scored as *no* diversity for the proportion other-race measure (no other-race or -

ethnicity members present) and *any diversity* for the entropy measure (more than one racial or ethnic group present). For our sample, these two metrics are highly correlated; infants with more racial-ethnic entropy in their social network also have a higher proportion of racial/ethnic outgroup members in it (r = .43, p < .001). Infants with more racial-ethnic entropy in their neighborhoods also have a higher proportion of racial/ethnic outgroup members in their neighborhoods (r = .58, p < .001).

Analyses of Relative Diversity in Infants' Racial-Ethnic Environments. Next, we use the two aspects of infants' exposure to racial and ethnic diversity (explained above) to examine whether such exposure attenuates greater attention to other-race than own-race faces: the racial-ethnic diversity of their social network and the racial- ethnic diversity of their neighborhood.

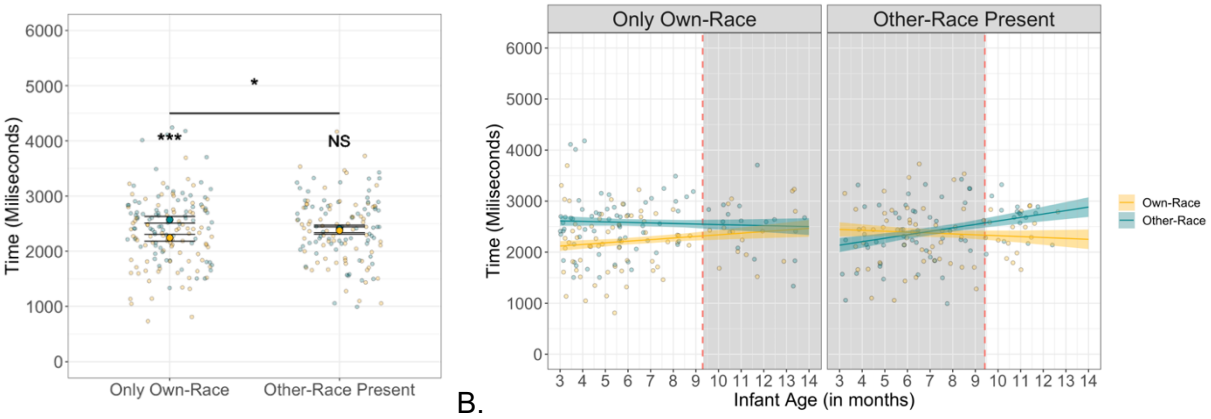
Social Network Diversity: Exposed to Other-Race People? We found a significant interaction between whether the face was an own- or other-race face and whether infants had any other-race people in their social networks (Wald $X^2(1) = 4.77$, p = .029) on infants' looking time. That is, infants whose social networks were comprised of only own-race people (n = 81) looked longer at other-race than own-race faces (b = 329.4, SE = 87.0, p < .001), whereas those with any other-race people in their social networks (n = 66) did not differentiate their attention to own-race and other-race faces (b = 22.8, SE = 98.2, p = .816; (interaction between type of face and whether there were any other-race people in the social network: b = 321.0, SE = 131.7, p = .015; see Figure S11 Panel A)—corroborating the findings with entropy reported in the main text.

This two-way interaction was further moderated by age (Wald $X^2(1) = 6.73$, p = .009): we unpack this three-way interaction using the Johnson-Neyman procedure (Johnson & Fay, 1950) with the 'interactions' package in R (Long, 2019). Infants with only own-race people in their social networks who were *younger* than 9.30 months old (n = 65) looked longer at other- than own-race faces while infants *older* than 9.30 months old (n = 16) looked similarly long at other- and own-race faces (see Figure S11 Panel B). Infants with any other-race people in their social networks who were *younger* than 9.77 months old (n = 52) looked similarly long at other- and own-race faces while those who were *older* than 9.77 months old (n = 14) looked longer at other-race than own race faces. In sum, infants younger than ~9.3 months (n = 114; 78%) showed the same pattern as reported in the main text, that is, exposure to diversity moderating attention to own- and other-race faces.

Neighborhood Diversity. We found no main or interactive effects of the diversity of infants' neighborhoods on infants' looking towards own- or other-race faces (see SOM Section 2 Tables S3).

Figure S11

Infants' Visual Attention to Own- and Other-Race Faces by Social Network Diversity



Note. For Panel A, large dots are estimated means, error bars are standard errors, small dots are horizontally jittered data points averaged at the participant level, meaning that these points represent the average amount of time an infant spent looking at own-race and other-race faces. For infants with only own-race people in their social network, there was a 0.25 SD gap in how long they looked at other-race vs. own-race faces. For Panel B, lines are predicted effects, ribbons are standard errors, and small dots are data points averaged at the participant level. The gray background represents non-significant difference in attention to own- vs. other-race faces while the white background represents significant difference in attention to own- vs. other-race faces (as per a Johnson-Neyman procedure).

In summary, when diversity is conceptualized as a relative measure, infants equated their attention to own- and other-race faces as a function of exposure to racial-ethnic diversity in their social network, but not their neighborhood. Thus, when measuring exposure to diversity as absolute (as reported in the main text) or relative to the infants' identity (as reported here), we find similar results: 1) a moderating effect of social network diversity such that infants with *any diversity* in their social network look similarly long at own- and other-race faces while infants with *no diversity* look longer at other-race faces and 2) no moderation of infants' attention by neighborhood diversity. However, we found one main difference between social network diversity as an absolute (as in the main text) or relative measure (reported here): the effect of age. We hesitate to overinterpret this three-way interaction, as we have relatively few older infants in our sample (n = 30; 20%).

Section 3C: Do infants differentially attend to different race and ethnicity faces?

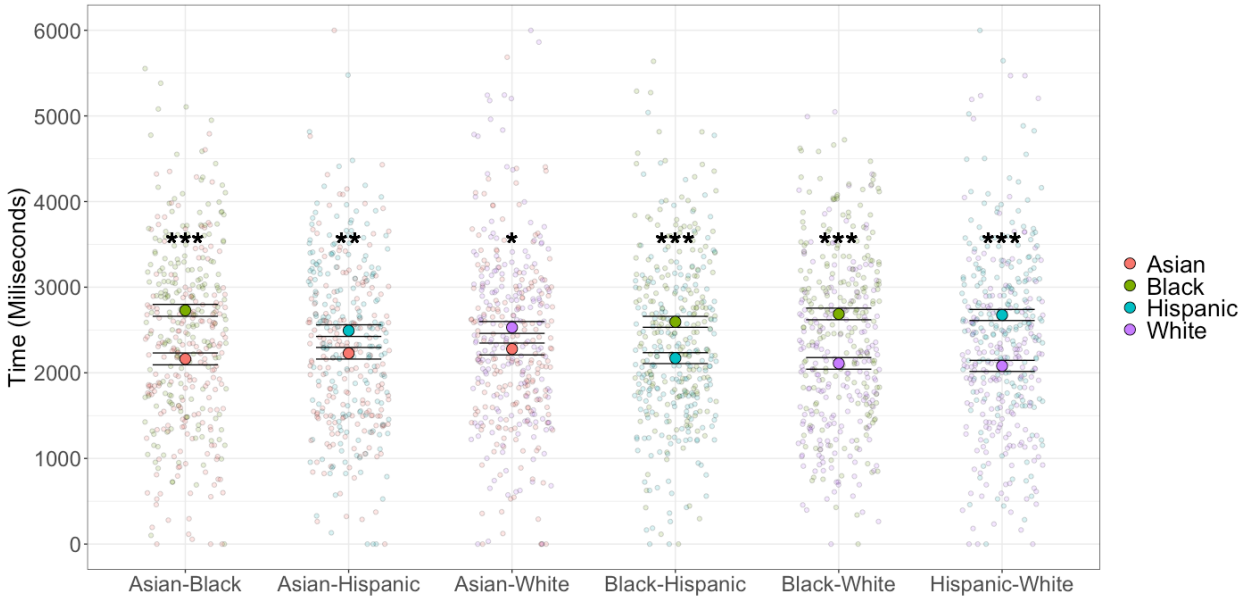
We were additionally interested in how infants attend to each of the race-ethnicity face pairs in our stimuli (e.g., Asian-Black, Hispanic-White). For these analyses divided by participants' own race and ethnicity, see SOM Section 3D.

For these analyses, we regressed infants' looking time on the race or ethnicity of each face (for coding purposes, we assigned the face whose race label comes first in the alphabet a 1 and the face whose race label comes second a 0; e.g., for Black-Hispanic pairs Black = 1, Hispanic = 0), infants' age, and the interaction term with random intercepts for face pair and participant. All predictors were mean-centered.

To summarize across all the comparisons of racial pairs, infants look longest at Black faces, then Hispanic faces, then White faces, and least at Asian faces (see Figure S12 for a visualization, Section 3D for these analyses separated by infant's racial identity, and Section 3E for analyses of looking to each race by exposure to racial and ethnic groups in infants' neighborhoods). Infants looked longer at Black than Asian faces (b = 566.7, *SE* = 98.0, $p < .001$), Hispanic faces (b = 424.5, *SE* = 90.2, $p < .001$), and White faces (b = 572.2, *SE* = 96.1, $p < .001$); they looked longer at Hispanic than Asian faces (b = 264.5, *SE* = 96.0, $p = .006$) and White faces (b = 594.4, *SE* = 91.9, $p < .001$) ; they looked longer at White than Asian faces (b = 251.4, *SE* = 97.6, $p = .010$). These effects only interacted with age for looking to Black-White face pairs (Wald X^2 (1) = 4.52, $p = .033$); for these pairs, the tendency to look longer at Black faces increased across age, (b = 1.96, *SE* = 0.80, $p = .015$), while looking to White faces remained constant across age, b = −0.45, *SE* = 0.80, $p = .573$; Figure S13).

Figure S12

Infants' Attention to Asian, Black, Hispanic, and White Face Pairs

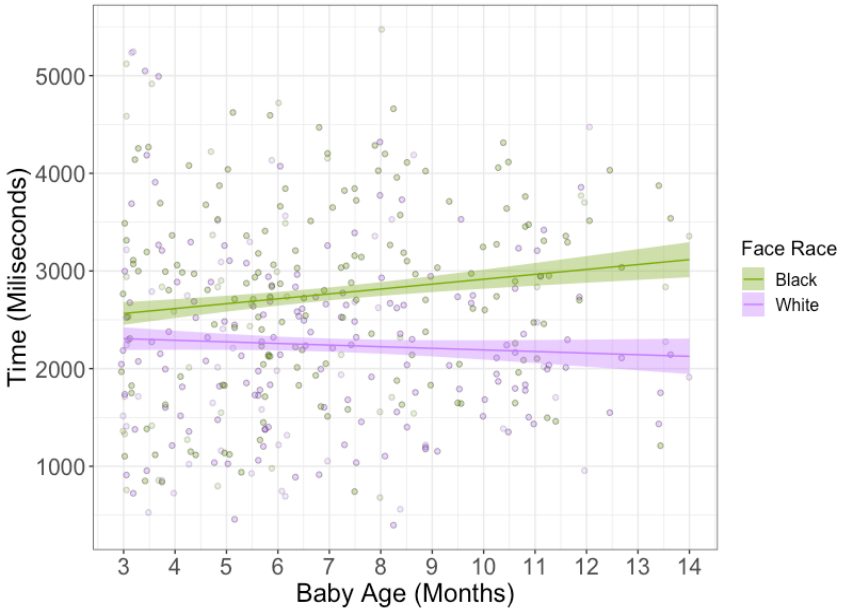


Note. The points plotted above represent the average amount of time infants spent looking at faces for each race-ethnicity pair. Large dots are estimated means, error bars are standard errors, small dots are horizontally jittered data points averaged at the participant level. For Asian-Black face pairs, there was a 0.42 *SD* gap favoring looking longer at Black than Asian faces. For Asian-Hispanic face pairs, there was a 0.21 *SD* gap favoring looking longer at Hispanic than Asian faces. For Asian-White face pairs, there was a 0.19 *SD* gap favoring looking longer at White than Asian faces. For Black-Hispanic face pairs, there was a 0.35 *SD*

gap favoring looking longer at Black than Hispanic faces. For Black-White face pairs, there was a 0.43 *SD* gap favoring looking longer at Black than White faces. For Hispanic-White faces, there was a 0.46 *SD* gap favoring looking longer at Hispanic than White faces.

Figure S13

Infants' Attention to Black vs. White faces



Note. Lines are predicted effects, ribbons are standard errors, small dots are individual data points.

To summarize, infants displayed a strikingly consistent pattern in visual attention to the four racial-ethnic category faces presented to them: infants looked longest at Black, then Hispanic, then White, and least at Asian faces (although this pattern showed some moderation by infants' own race, see SOM Section 3D). This pattern is remarkably consistent with Singarajah and colleagues (2017), who found that 11-month-old White and Hispanic infants in the US look longest at Black, then Hispanic, then White faces, but it further extends this work to show stability across the first year of life and also clarifies how Asian faces fit into this pattern. Interestingly, because infants in our sample looked longer at White than Asian faces, the overall pattern of looking (longest at Black, then Hispanic, then White, then Asian) cannot be explained either by differences in skin tone (e.g., a tendency to look longer at faces of darker skin tone). Thus, future research will be needed to examine the source of this pattern.

Table S5

Linear Mixed-Effects Regression Results for Infants' Attention to Different Race and Ethnicity Faces

	Asian-Black			**Asian-Hispanic**			**Asian-White**			**Black-Hispanic**			**Black-White**			**Hispanic-White**		
Predictors	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*
(Intercept)	2445.6	49.0	<0.001	2360.2	48.0	<0.001	2403.2	48.8	<0.001	2382.8	45.1	<0.001	2397.3	49.1	0.013	2377.2	52.5	0.014
Face (1 = left face, 0 = right face)	−566.1	98.0	**<0.001**	−266.2	96.0	**0.006**	−253.0	97.6	**0.010**	425.0	90.1	**<0.001**	572.2	96.1	**<0.001**	595.9	91.8	**<0.001**
Age	0.7	0.6	0.216	0.2	0.6	0.759	0.5	0.6	0.364	0.8	0.5	0.106	0.8	0.6	0.184	0.6	0.5	0.235
Face * Age	−1.1	1.2	0.328	1.6	1.1	0.164	1.0	1.1	0.367	−0.8	1.1	0.473	2.4	1.1	**0.034**	−1.2	1.1	0.260
N	2_{trial}			2_{trial}			2_{trial}			2_{trial}			2_{trial}			2_{trial}		
	198_{ID}			191_{ID}			193_{ID}			197_{ID}			199_{ID}			201_{ID}		
Observations	724			696			710			716			734			738		
Marginal R^2	0.047			0.014			0.012			0.034			0.055			0.057		

Note. Estimates (with standard error) and goodness-of-fit statistics for the six separate linear mixed effects models regressing infants' looking to face pairs on infants' age in days (mean-centered), which race-ethnicity of the face attended to (left face in label = 1, right face in label = 0, mean-centered; example: Asian = 1, Black = 0, mean-centered), and an interaction term. There are six separate models: one each for Asian-Black face pairs, Asian-Hispanic face pairs, Asian-White face pairs, Black-Hispanic face pairs, Black-White face pairs, and Hispanic-White face pairs. All six models included a random intercept for participant ID and a random intercept for face pair.

Section 3D: Does infant race moderate attention to different race-ethnicity face pairs?

Due to the small number of monoracial infants of color (n_{Asian} = 15; n_{Black} = 9; $n_{Hispanic}$ = 8), we next report separate analyses for monoracial infants of color (n = 32), multiracial infants (n = 41), monoracial white infants (n = 130). We specifically examine how infants in each of these groups look at pairs of faces of different races (e.g., Asian-Black pairs).

We find that monoracial infants of color look longer at Black than Asian faces and Hispanic than White faces. They also look longer at Hispanic than Asian infants with age (see Figure S14).

Multiracial infants look longer at Black than White and Hispanic than White faces. There is also moderation by age: while younger infants look longer at Hispanic than Asian faces, older infants look longer at Asian than Hispanic faces (see Figure S15). Similarly, younger infants look longer at Asian than White faces while older infants look longer at White than Asian faces (see Figure S16). For looking to Black and Hispanic faces, younger infants look longer at Black than Hispanic faces while older infants attend similarly long to both faces (see Figure S17).

White monoracial infants look longer at Black than Hispanic than White faces. For Black-White pairs, White infants look even longer at Black than White faces with age (see Figure S18).

Table S6

Linear Mixed-Effects Regression Results for Attention to Different Race and Ethnicity Faces among Monoracial Infants of Color

	Asian-Black			**Asian-Hispanic**			**Asian-White**			**Black-Hispanic**			**Black-White**			**Hispanic-White**		
Predictors	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*
(Intercept)	2514.9	132.7	<0.001	2310.6	104.6	<0.001	2437.5	123.3	<0.001	2325.4	109.7	<0.001	2424.2	134.6	<0.001	2318.9	108.8	<0.001
Face (1 = left face, 0 = right face)	−581.6	265.4	**0.031**	−291.5	209.1	0.166	−376.3	246.7	0.123	395.9	219.3	0.074	211.4	269.2	0.434	541.2	217.5	**0.014**
Age	0.7	1.5	0.662	1.4	1.2	0.246	1.6	1.4	0.237	1.3	1.2	0.305	0.7	1.5	0.612	1.1	1.2	0.397
Face * Age	−4.0	3.0	0.189	−5.9	2.4	**0.014**	4.9	2.7	0.074	3.5	2.5	0.160	1.2	2.9	0.680	3.6	2.5	0.143
N	2_{trial}			2_{trial}			2_{trial}			2_{trial}			2_{trial}			2_{trial}		
	31_{ID}			32_{ID}			32_{ID}			31_{ID}			31_{ID}			32_{ID}		
Observations	116			118			122			112			118			116		
Marginal R^2	0.055			0.075			0.055			0.052			0.009			0.072		

Note. Estimates (with standard error) and goodness-of-fit statistics for the six separate linear mixed effects models regressing Asian infants' time spent looking at face pairs on infants' age in days (mean-centered), which face (left face = 1, right face = 0, mean-centered; example: Asian = 1, Black = 0, mean-centered), and an interaction term. There are six separate models: one each for Asian-Black face pairs, Asian-Hispanic face pairs, Asian-White face pairs, Black-Hispanic face pairs, Black-White face pairs, and Hispanic-White face pairs. All six models included a random intercept for participant ID and a random intercept for face pair.

Table S7

Linear Mixed-Effects Regression Results for Multiracial Infants' Attention to Different Race and Ethnicity Faces

	Asian-Black			**Asian-Hispanic**			**Asian-White**			**Black-Hispanic**			**Black-White**			**Hispanic-White**		
Predictors	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*
(Intercept)	2421.6	104.5	<0.001	2300.2	99.0	<0.001	2323.8	110.2	<0.001	2271.5	90.5	<0.001	2348.0	93.5	<0.001	2299.9	126.6	0.037
Face (1 = left face, 0 = right face)	−112.8	209.0	0.590	−577.7	198.0	**0.004**	125.7	220.5	0.570	746.6	181.0	**<0.001**	956.3	187.0	**<0.001**	719.6	209.8	**<0.001**
Age	0.7	1.3	0.609	0.6	1.2	0.597	2.0	1.3	0.139	1.2	1.1	0.279	0.4	1.1	0.726	1.7	1.2	0.168
Face * Age	−3.5	2.6	0.176	9.3	2.3	**<0.001**	−6.6	2.7	**0.015**	−4.4	2.2	**0.045**	1.3	2.2	0.576	−1.5	2.5	0.560
N	2_{trial}			2_{trial}			2_{trial}			2_{trial}			2_{trial}			2_{trial}		
	41_{ID}			36_{ID}			36_{ID}			39_{ID}			41_{ID}			41_{ID}		
Observations	144			118			134			142			144			144		
Marginal R^2	0.017			0.174			0.061			0.136			0.158			0.089		

Note. Estimates (with standard error) and goodness-of-fit statistics for the six separate linear mixed effects models regressing multiracial infants of color's time spent looking at a face on infants' age in days (mean-centered), which face (left face = 1, right face = 0, mean-centered; example: Asian = 1, Black = 0, mean-centered), and an interaction term. There are six separate models: one each for Asian-Black face pairs, Asian-Hispanic face pairs, Asian-White face pairs, Black-Hispanic face pairs, Black-White face pairs, and Hispanic-White face pairs. All six models included a random intercept for participant ID and a random intercept for face pair.

Table S8

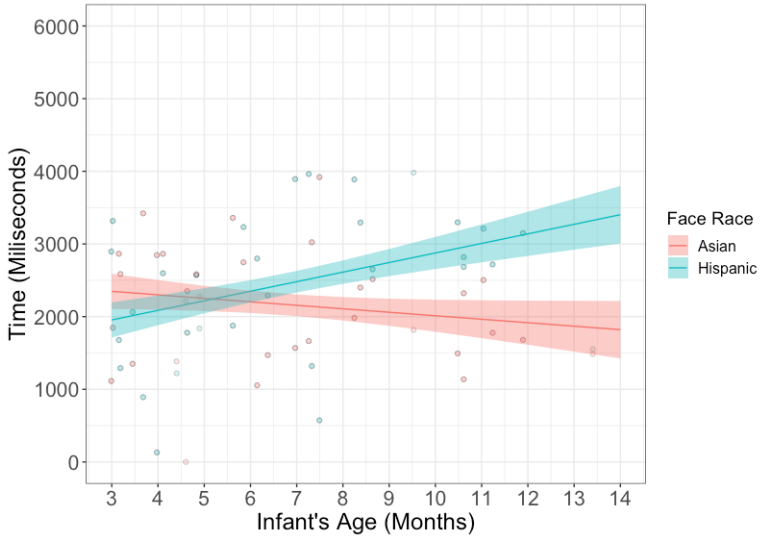
Linear Mixed-Effects Regression Results for Monoracial White Infants' Attention to Different Race and Ethnicity Faces

	Asian-Black			**Asian-Hispanic**			**Asian-White**			**Black-Hispanic**			**Black-White**			**Hispanic-White**		
Predictors	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*
(Intercept)	2435.7	60.8	<0.001	2390.1	61.7	<0.001	2420.5	60.0	<0.001	2431.6	58.1	<0.001	2406.2	86.2	0.023	2414.8	57.7	<0.001
Face (1 = left face, 0 = right face)	−704.6	121.5	**<0.001**	−180.2	123.4	0.145	−336.4	119.9	**0.005**	337.6	116.2	**0.004**	545.8	120.7	**<0.001**	576.7	115.4	**<0.001**
Age	0.8	0.7	0.291	−0.3	0.7	0.686	−0.2	0.7	0.741	0.6	0.7	0.349	0.9	0.7	0.221	0.2	0.7	0.797
Face * Age	0.3	1.4	0.821	1.8	1.5	0.227	2.0	1.4	0.158	−0.9	1.4	0.520	3.1	1.5	**0.035**	−2.5	1.4	0.074
N	2_{trial}			2_{trial}			2_{trial}			2_{trial}			2_{trial}			2_{trial}		
	126_{ID}			123_{ID}			126_{ID}			127_{ID}			127_{ID}			128_{ID}		
Observations	464			460			464			462			472			478		
Marginal R^2	0.070			0.008			0.070			0.021			0.054			0.055		

Note. Estimates (with standard error) and goodness-of-fit statistics for the six separate linear mixed effects models regressing monoracial White infants' time spent looking at a face on infants' age in days (mean-centered), which face (left face = 1, right face = 0, mean-centered; example: Asian = 1, Black = 0, mean-centered), and an interaction term. There are six separate models: one each for Asian-Black face pairs, Asian-Hispanic face pairs, Asian-White face pairs, Black-Hispanic face pairs, Black-White face pairs, and Hispanic-White face pairs. All six models included a random intercept for participant ID and a random intercept for face pair.

Figure S14

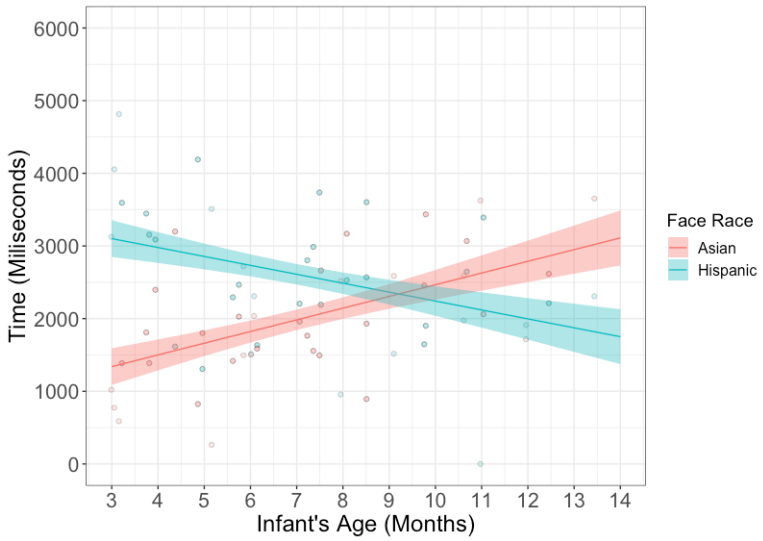
Visual attention of monoracial infants of color to Asian and Hispanic faces



Note. Lines are predicted effects, ribbons are standard errors, small dots are individual data points averaged at the participant level; that means that these points represent the average amount of time one baby spent looking at an Asian or Hispanic face.

Figure S15

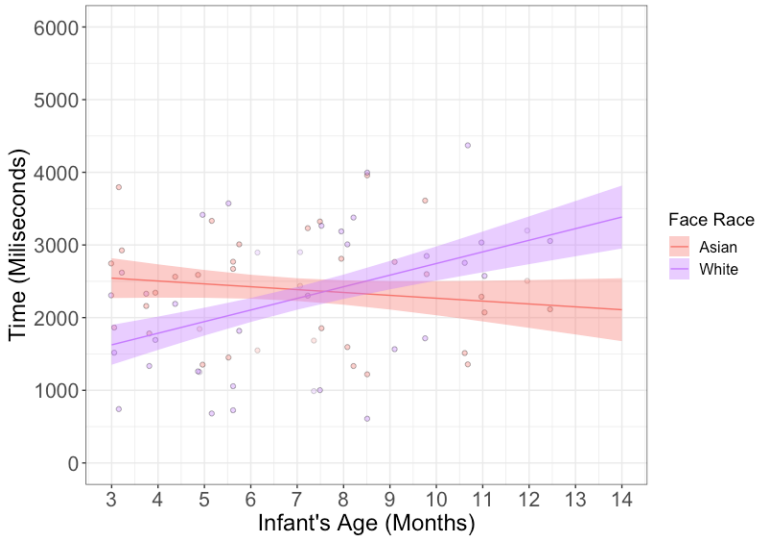
Multiracial infants' visual attention to Asian and Hispanic faces



Note. Lines are predicted effects, ribbons are standard errors, small dots are individual data points averaged at the participant level; that means, these points represent the average amount of time one baby spent looking at an Asian or Hispanic face.

Figure S16

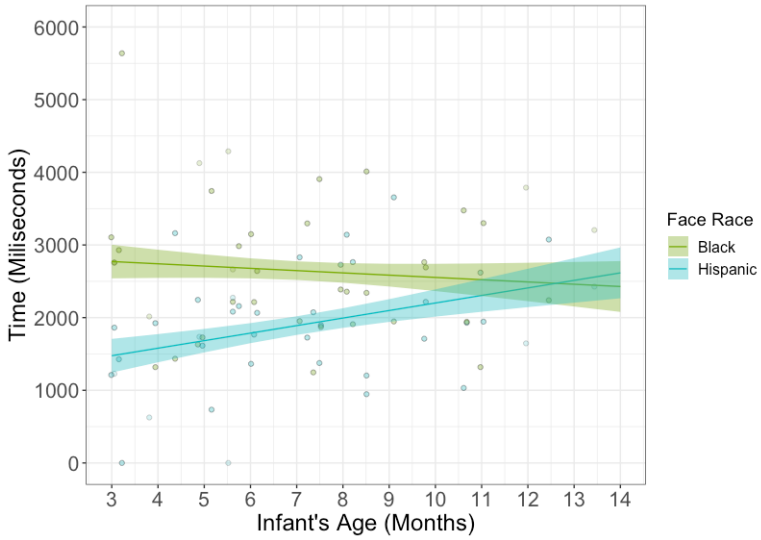
Multiracial infants' visual attention to Asian and White faces



Note. Lines are predicted effects, ribbons are standard errors, small dots are individual data points averaged at the participant level; that means that these points represent the average amount of time one baby spent looking at an Asian or White face.

Figure S17

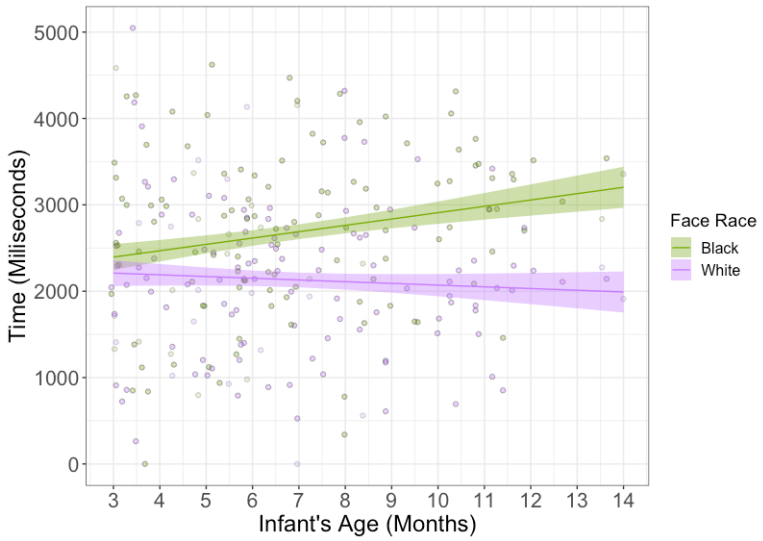
Multiracial infants' visual attention to Black and Hispanic faces



Note. Lines are predicted effects, ribbons are standard errors, small dots are individual data points averaged at the participant level; this means that these points represent the average amount of time one baby spent looking at a Black or Hispanic face.

Figure S18

Monoracial White infants' visual attention to Black and White faces



Note. Lines are predicted effects, ribbons are standard errors, small dots are individual data points averaged at the participant level; that means that these points represent the average amount of time one baby spent looking at a Black or White face.

Section 3E: Does the relative proportion of a racial or ethnic group in an infant's neighborhood moderate attention to different face pairs?

Below, we examine whether the relative proportion of individuals in infants' neighborhoods belonging to a racial or ethnic category moderates infants' looking at different race faces. For example, in looking at Asian-Black face pairs, does infants' looking at Black faces vary depending on the relative proportion of Asian and Black faces in their neighborhood?

To address this question, we calculated the percentage of Black, White, Asian, and Hispanic individuals in each infant's neighborhood. For the percentage of Black, White, and Asian individuals in infants' neighborhoods, we took the total population of monoracial individuals of that identity and divided it by the total population of the neighborhoods. For the percentage of Hispanic individuals in infants' neighborhoods, we took the total number of people who identified as Hispanic and divided it by the total population of the neighborhoods.

We find that for five of the six face pairs (Asian-Hispanic, Asian-White, Black-Hispanic, Black-White, Hispanic-White), there is no moderation by the relative proportion of each race or ethnicity in an infant's neighborhood. However, for Asian-Black pairs, there was a three-way interaction among face race, infants' age, and proportion of Asian relative to Black residents in infants' neighborhoods (i.e., proportion of Asian residents - proportion of Black residents; p = .008). Breaking this interaction down, we observed that older infants look longer at Black faces than Asian faces when they have the same number of Black and Asian people in their neighborhood or *more* Black people in their neighborhood. When they had more Asian than Black people in their neighborhoods, they instead look similarly long at Asian and Black faces. In contrast, younger infants look longer at Black than Asian faces when they have a similar proportion of Black and Asian people in their neighborhood or more Asian than Black people in their neighborhoods; see Figure S19 for visualization.

Table S9

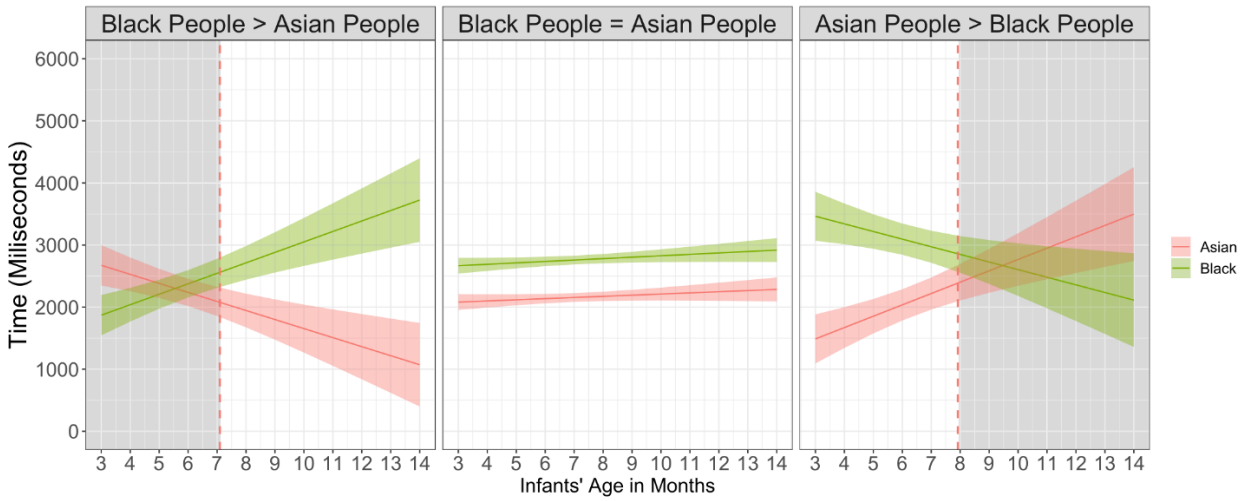
Linear Mixed-Effects Regression Results for Infants' Attention to Different Race and Ethnicity Faces Moderated by the Relative Representation of Those Races and Ethnicities in Infants' Neighborhoods

	Asian-Black			**Asian-Hispanic**			**Asian-White**			**Black-Hispanic**			**Black-White**			**Hispanic-White**		
Predictors	Estimate	SE	p	Estimate	SE	p	Estimate	SE	p	Estimate	SE	p	Estimate	SE	p	Estimate	SE	p
(Intercept)	2443.6	49.1	<0.001	2362.2	48.2	<0.001	2409.3	49.1	<0.001	2382.4	45.2	<0.001	2394.1	48.3	<0.001	2382.0	46.3	<0.001
Face (1 = left, 0 = right)	−589.8	98.2	**<0.001**	−258.4	96.3	**0.007**	−243.7	98.1	**0.013**	427.5	90.4	**<0.001**	582.5	96.5	**<0.001**	600.0	92.5	**<0.001**
Age	0.7	0.6	0.244	0.2	0.6	0.745	0.5	0.6	0.370	0.8	0.5	0.108	0.7	0.6	0.204	0.7	0.5	0.219
Difference	272.3	331.9	0.412	8.0	335.6	0.981	−93.3	186.7	0.618	−40.8	269.6	0.880	−130.1	150.7	0.388	−1.4	140.4	0.992
Face * Age	−0.9	1.2	0.445	1.7	1.1	0.142	1.0	1.1	0.378	−0.8	1.1	0.461	2.4	1.1	**0.032**	−1.2	1.1	0.264
Face* Difference	−314.1	663.8	0.636	−441.8	671.1	0.511	−176.7	373.5	0.636	380.4	539.2	0.481	180.2	301.3	0.550	−92.0	280.8	0.743
Age * Difference	0.6	3.8	0.866	−2.7	4.0	0.507	2.8	2.3	0.234	0.3	3.0	0.932	−0.8	1.7	0.639	1.7	1.6	0.307
Face * Age * Difference	20.3	7.6	**0.008**	−9.9	8.0	0.216	4.1	4.6	0.376	1.7	6.1	0.780	4.2	3.4	0.208	1.8	3.3	0.592
N	198 $_{ID}$			191 $_{ID}$			193 $_{ID}$			197 $_{ID}$			199 $_{ID}$			201 $_{ID}$		
Observations	724			696			710			716			734			738		
Marginal R^2	0.060			0.017			0.016			0.035			0.058			0.059		

Note. Estimates (with standard error) and goodness-of-fit statistics for the six separate linear mixed effects models regressing infants' time spent looking at face pairs on infants' age in days (mean-centered), which face (left face = 1, right face = 0, mean-centered; example: Asian = 1, Black = 0, mean-centered), and the difference in proportion of that race/ethnicity in infants' own neighborhoods (proportion Right Face - proportion Left Face; example: proportion Asian - proportion Black) and all interactions. There are six separate models: one each for Asian-Black face pairs, Asian-Hispanic face pairs, Asian-White face pairs, Black-Hispanic face pairs, Black-White face pairs, and Hispanic-White face pairs. All six models included a random intercept for participant ID and a random intercept for face pair.

Figure S19

Infants' Looking to Black vs. Asian Faces as a Function of their Age and Relative Proportion of Black vs. Asian People in Their Neighborhoods



Note. Lines are predicted effects and ribbons are standard errors. The panels represent three levels of difference in the proportion Asian and Black people in an infant's neighborhood: "Black People > Asian People" is the predicted effect when the proportion Asian – proportion Black people = –0.5, "Black People = Asian People" is the predicted effect when the proportion Asian – proportion Black people = 0, "Asian People > Black People" is the predicted effect when the proportion Asian – proportion Black people = 0.5 (observed proportion difference range = –0.74, 0.51). The gray background represents non-significant difference in attention to Asian and Black faces while the white background represents significant difference in attention to Asian and Black faces which were calculated using a Johnson-Neyman procedure.

In general, the relative proportion of racial and ethnic groups in infants' neighborhoods does not appear to moderate infants' visual attention to faces of different races. In the case of infants' visual attention to Asian vs. Black faces, only younger infants moderated their attention in the predicted direction as a function of the relative population of Asian and Black people such that they consistently looked longer at the more novel stimuli: Black faces for infants who had more Asian than Black people in their neighborhood. Older infants show the opposite pattern, attending more to Black faces when there are more Black people in their neighborhoods.

Section 4: Preregistered Exploratory Analyses

In this section we explore whether parent's political ideology (Section 4A) and stimuli gender (Section 4B) moderate infants' attention to faces.

Section 4A: Does parents' political ideology moderate infants' looking at own-race vs. other-race faces?

Here, we examine whether parents' political orientation moderates infants' looking at own-race and other-race faces. We find that parent's political orientation does not relate to infants' looking–that is, infants look longer at other-race than own-race faces regardless of their parents' political orientation.

Table S10

Linear Mixed-Effects Regression Results for Infants' Attention to Own-Race or Other-Race Faces by Age and Parents' Political Orientation

	Full Model			**No Age Predictor**		
Predictors	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*
(Intercept)	2403.7	29.0	<0.001	2406.3	28.9	<0.001
Own-Race (1 = own, 0 = other)	−270.1	58.1	**<0.001**	−272.2	57.9	**<0.001**
Age	0.5	0.3	0.121			
Politics	9.3	18.9	0.621	11.6	18.8	0.538
Own-Race * Age	−0.3	0.7	0.640			
Own-Race * Politics	−20.8	37.8	0.581	−22.5	37.6	0.551
Age * Politics	0.1	0.2	0.768			
Own-Race * Age * Politics	−0.1	0.5	0.822			
N	12_{trial}			12_{trial}		
	185_{ID}			185_{ID}		
Observations	2036			2036		
Marginal R^2	0.013			0.011		

Note. Estimates (with standard error) and goodness-of-fit statistics for the linear mixed-effects models regressing (1) infants' time spent looking at a face on whether the face was an own-race or other-race face (own-race = 1, other race = 0, mean-centered), parents' political orientation

(mean-centered), infants' age in days (mean-centered), and an interaction term ("Full Model") and (2) the same model without age as a predictor (as it did not improve model fit, "No Age Predictor"). Both models included a random intercept for participant ID and a random intercept for face pair. Parents' political orientation was recorded on a scale from very conservative (1) to very liberal (7). The responding parent reported their own and their partner's (as applicable) political orientation. If they reported two parent's political orientation for an infant, we averaged those two responses ($r = 0.74$, $p < .001$) together to get our measure of political orientation.

Section 4B: Does stimuli gender moderate infants' looking at faces?

Here, we examine whether the gender of the stimuli moderates infants' looking at different race faces. Specifically, we test whether infants show more differentiation when they are looking at women's faces compared to men's faces (similar to Quinn et al., 2008), as well as whether infants' own race-ethnicity might moderate this pattern. We find no effect of stimuli gender on infants' looking at own- vs. other-race faces for the total sample or the five subsamples by infant race-ethnicity.

As an aside, and while not the goal of the present work, we also obtained a small but sizeable sample of biracial infants (n = 41). It could be the case that stimulus gender operates differently for biracial infants; for example, Asian-White biracial infants with an Asian mom and White father might look longer at White than Asian faces of women but Asian than White faces of men, if infants look longer at other- than own-race faces. We did not test this possibility directly here as our biracial infants themselves all have different identities (and parents from various racial-ethnic backgrounds), but it could be promising for future research.

Examining each face pair individually, infants showed the patterns documented in Section 3C—specifically, more looking to Black than White and White than Asian —to a larger degree (i.e., more differentiated looking) when presented with faces of women than faces of men, as in Quinn et al., 2008. Further, we find a significant three-way interaction between stimuli gender, infant age, and face race for Asian-Black pairs. We unpack this three-way interaction using the Johnson-Neyman procedure (Johnson & Fay, 1950) with the 'interactions' package in R (Long, 2019). For faces of Asian and Black men, infants younger than 6.12 months old (n = 92) look similarly long at the two faces while infants older than 6.12 months (n = 105) look longer at Black than Asian faces. For faces of Asian and Black Women, infants younger than 11.76 months (n = 185) look longer at Black than Asian faces while infants older than 11.76 months (n = 12) look similarly long at the two faces (see Figure S21).

Table S11

Linear Mixed-Effects Regression Results for Infants' Attention to Own-Race or Other-Race Faces by Age and Stimuli Gender

	Full Model			**No Age Predictor**		
Predictors	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*
(Intercept)	2396.0	27.2	<0.001	2398.1	27.2	<0.001
Own-Race (1 = own, 0 = other)	−288.4	54.5	**<0.001**	−288.7	54.4	**<0.001**
Age	0.6	0.3	0.065			
Woman (1 = women, 0 = men)	74.8	54.5	0.170	75.5	54.4	0.166
Own-Race * Age	−0.1	0.6	0.821			
Own-Race * Woman	−145.4	108.9	0.182	−149.3	108.8	0.170
Age * Woman	0.4	0.6	0.577			
Own-Race * Age * Woman	−1.1	1.3	0.395			
N_{trial}	12			12		
N_{ID}	203			203		
Observations	2250			2250		
Marginal R^2	0.016			0.014		

Note. Estimates (with standard error) and goodness-of-fit statistics for the linear mixed-effects models regressing (1) infants' time spent looking at a face on whether the face was an own-race or other-race face (own-race = 1, other race = 0, mean-centered), whether the faces were those of women or men (woman = 1, man = 0, mean-centered), infants' age in days (mean-centered), and an interaction term ("Full Model") and (2) the same model without age as a predictor (as it did not improve model fit, "No Age Predictor"). Both models also include a fixed effect for stimuli gender ("Woman": women = 1, men = 0, mean-centered) and all interactions, as well as random intercepts for face pair and participant.

Table S12

Linear Mixed-Effects Regression Results for Infants' Attention to Own- and Other-Race Faces by Infant Race/Ethnicity and Stimuli Gender

	Asian Infants			**Black Infants**			**Hispanic Infants**			**White Infants**			**Multiracial Infants**		
Predictors	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*
(Intercept)	2426.9	98.0	<0.001	2515.1	167.9	<0.001	2324.5	133.9	<0.001	2413.2	34.8	<0.001	2322.4	53.6	<0.001
Own-Race (1 = own, 0 = other)	−791.8	195.9	**<0.001**	387.0	335.7	0.252	−314.1	267.9	0.244	−271.9	69.5	**<0.001**	−311.8	107.2	**0.004**
Age	2.3	1.2	**0.048**	0.3	1.9	0.855	1.0	1.5	0.504	0.3	0.4	0.489	1.0	0.6	0.119
Woman (1 = women, 0 = men)	58.2	196.0	0.767	−135.2	335.7	0.688	−162.2	268.2	0.547	93.5	69.5	0.179	108.6	107.2	0.312
Own-Race * Age	0.4	2.3	0.862	6.9	3.7	0.066	−3.3	3.0	0.285	−0.8	0.8	0.341	1.5	1.3	0.256
Own-Race * Woman	−88.4	391.9	0.822	−5.7	671.4	0.993	367.8	536.4	0.495	−186.8	139.0	0.179	−229.6	214.4	0.285
Age * Woman	1.0	2.3	0.680	0.4	3.7	0.911	1.3	3.1	0.662	0.1	0.8	0.932	0.4	1.3	0.745
Own-Race * Age * Woman	−0.6	4.6	0.898	−5.8	7.5	0.436	−9.2	6.1	0.134	−1.5	1.7	0.366	2.3	2.6	0.370
N	6_{trial}			6_{trial}			12_{trial}			6_{trial}			12_{trial}		
	15_{ID}			9_{ID}			28_{ID}			130_{ID}			41_{ID}		
Observations	162			100			344			1404			495		
Marginal R^2	0.114			0.049			0.026			0.015			0.029		

Note. Estimates (with standard error) and goodness-of-fit statistics for the five separate linear mixed effects models regressing infants' time spent looking at a face on infants' age in days (mean-centered), whether the face was an own-race or other-race face

(“Own-Race”: own-race = 1, other-race = 0, mean-centered), stimuli gender (“Woman”: women = 1, men = 0, mean-centered), and all interactions. There are five separate models: one for monoracial Asian infants, one for monoracial Black infants, one for monoethnic (no race noted) Hispanic infants, one for monoracial White infants, and one for multiracial infants. All five models included a random intercept for participant ID.

Table S13

Linear Mixed-Effects Regression Results for Infants' Attention to Different Race and Ethnicity Faces by Stimuli Gender

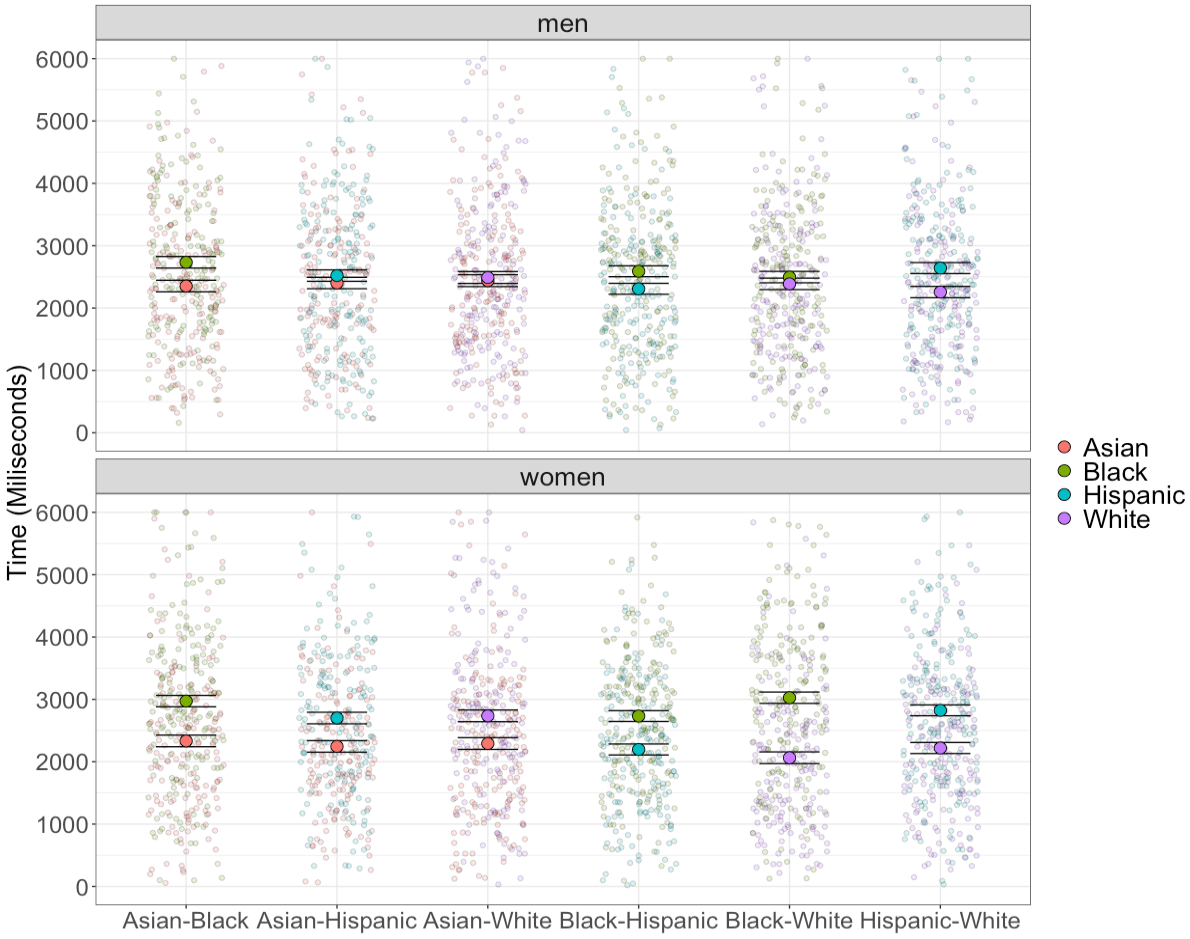
	Asian-Black			**Asian-Hispanic**			**Asian-White**			**Black-Hispanic**			**Black-White**			**Hispanic-White**		
Predictors	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*
(Intercept)	2445.6	48.8	<0.001	2359.9	48.0	<0.001	2403.4	48.8	<0.001	2382.8	45.1	<0.001	2397.2	47.3	<0.001	2377.7	45.9	<0.001
Face (1 = left, 0 = right)	−566.1	97.7	**<0.001**	−265.6	96.0	**0.006**	−253.1	97.6	**0.010**	425.1	90.2	**<0.001**	572.5	94.6	**<0.001**	594.0	91.8	**<0.001**
Age	0.7	0.6	0.217	0.2	0.6	0.749	0.5	0.6	0.364	0.8	0.5	0.109	0.8	0.6	0.176	0.7	0.5	0.226
Woman (1 = women, 0 = men)	58.5	97.7	0.549	53.5	96.1	0.578	2.6	97.6	0.979	19.7	90.2	0.827	98.7	94.6	0.297	104.2	91.8	0.257
Face * Age	−1.2	1.2	0.304	1.5	1.1	0.178	1.0	1.1	0.378	−0.8	1.1	0.474	2.5	1.1	**0.028**	−1.2	1.1	0.260
Face * Woman	−351.8	195.4	0.072	−341.8	192.1	0.076	−410.2	195.3	**0.036**	329.3	180.3	0.068	957.9	189.1	**<0.001**	217.8	183.6	0.236
Age * Woman	0.4	1.2	0.755	−0.2	1.1	0.855	0.2	1.1	0.846	0.3	1.1	0.805	−0.3	1.1	0.777	0.6	1.1	0.588
Face * Age * Woman	5.3	2.3	**0.021**	0.5	2.3	0.820	−0.3	2.3	0.902	−0.1	2.1	0.950	1.7	2.2	0.448	−2.7	2.2	0.216
N	2_{trial}			2_{trial}			2_{trial}			2_{trial}			2_{trial}			2_{trial}		
	198_{ID}			191_{ID}			193_{ID}			197_{ID}			199_{ID}			201_{ID}		
Observations	724			696			710			716			734			738		
Marginal R^2	0.059			0.019			0.018			0.039			0.089			0.062		

Note. Estimates (with standard error) and goodness-of-fit statistics for the six separate linear mixed effects models regressing infants' time spent looking at a face on infants' age in days (mean-centered), which face ("Face": left face = 1, right face = 0, mean-centered; example: Asian = 1, Black = 0, mean-centered), stimuli gender ("Woman": women = 1, men = 0, mean-centered) and all interactions. There are six separate models: one each for Asian-Black face pairs, Asian-Hispanic face pairs, Asian-White face pairs, Black-

Hispanic face pairs, Black-White face pairs, and Hispanic-White face pairs. All six models included a random intercept for participant ID.

Figure S20

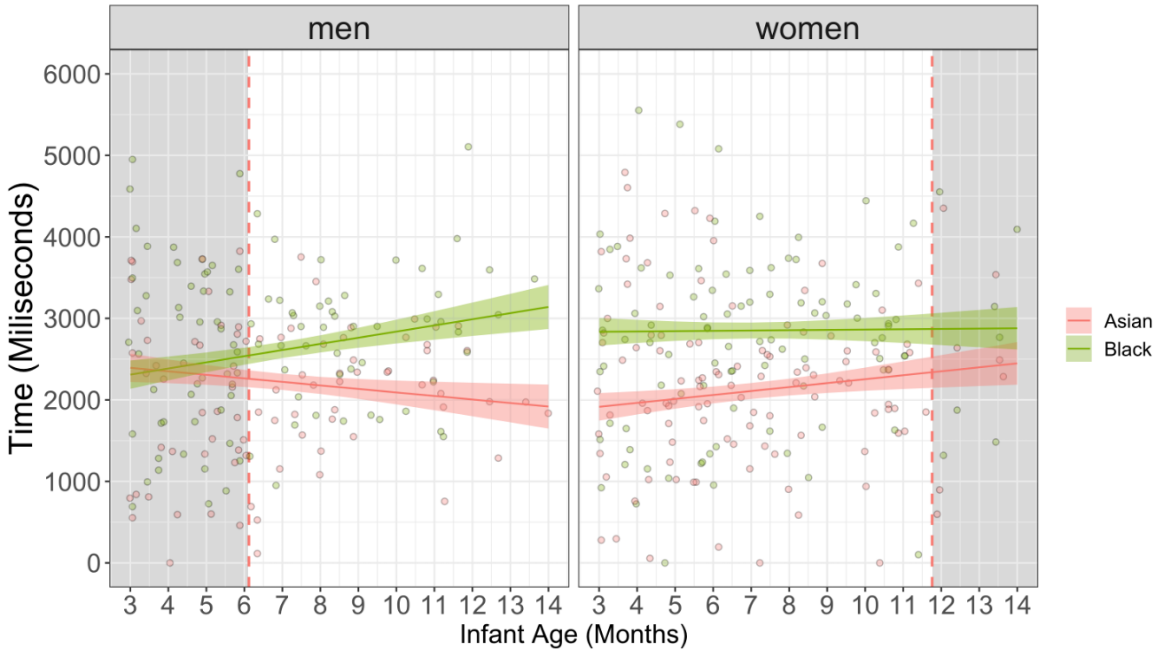
Duration of Infants' Looking at Different Race Faces by Stimuli Gender



Note. Large dots are estimated means, error bars are standard errors, small dots are horizontally jittered data points averaged at the participant level; that means that these points represent the average amount of time one baby spent looking at faces of different racial-ethnic groups. The two panels are for men's faces (top panel) and women's faces (bottom panel). The only pairs with significant differences by stimuli gender are the Asian-White and Black-White pairs. In both cases, infants show more differentiation for women's faces and no differentiation for men's faces.

Figure S21

Infants' Visual Attention to Asian-Black Face Pairs by Infant Age and Stimuli Gender



Note. Lines are predicted effects, ribbons are standard errors, small dots are horizontally jittered data points averaged at the participant level; that means that these points represent the average amount of time one baby spent looking at an Asian or Black face. The two panels are for men's faces (left panel) and women's faces (right panel). The gray background represents non-significant difference in attention to own- vs. other-race faces while the white background represents significant difference in attention to own- vs. other-race faces (as per a Johnson-Neyman analysis).

Section 5: Regression Tables for Proportion Looking as DV for Main Analyses

In the models reported below (Table S14-S18), we calculated the proportion of time infants spent looking at own- vs. other-race faces (rather than the total time, as reported in the main text) by dividing the total amount of time spent looking at an own-race face in a trial by the total time spent looking at either face in a trial. This resulted in a proportion ranging from 0 (only look at other-race face) to 1 (only look at own-race face). In order to make the intercept of all models interpretable, we subtracted 0.5 from the proportion of time spent looking at own-race faces. By doing this, the intercept can be interpreted in the following manner: a significantly negative intercept means that infants looked longer at other-race than own-race faces (proportion of looking time significantly less than 0.5), a significantly positive intercept means that infants looked longer at own-race than other-race faces (proportion of looking time significantly greater than 0.5), and an insignificant intercept means that infants looked similarly long at own- and other-race faces (proportion of looking time not significantly different from 0.5).

These results corroborate the results with total looking time as our DV (reported in the main text).

Table S14

Logistic Mixed-Effects Regression Results for Infants' Attention to Own- vs. Other-Race Faces by Infant Age

	Proportion		
Predictors	*Estimate*	*SE*	*p*
(Intercept)	−0.03	0.01	**0.030**
Age	−0.00	0.00	0.728
Random Effects			
σ^2	0.06		
$\tau_{00\ ID}$	0.00		
$\tau_{00\ trial}$	0.00		
N_{trial}	12		
N_{ID}	203		
Observations	1125		

Note. Estimates (with standard error) and goodness-of-fit statistics for the linear mixed effects models regressing the proportion of time infants spent looking at own-race faces on their age (in days) with a random intercept for participant ID (ID) and a random intercept for face pair (trial). Infants look longer at other-race than own-race faces (see estimate of intercept) and this does not change as a function of infants' age.

Table S15

Logistic Mixed-Effects Regression Results for Infants' Attention to Own- vs. Other-Race Faces by Infant Race-Ethnicity

	Asian Infants			**Black Infants**			**Hispanic Infants**			**White Infants**			**Multiracial Infants**		
Predictors	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*
(Intercept)	−0.07	0.04	0.135	0.04	0.04	0.379	−0.03	0.04	0.479	−0.03	0.01	**<0.001**	−0.04	0.01	**0.011**
Age	−0.00	0.00	0.763	0.00	0.00	0.247	−0.00	0.00	0.371	−0.00	0.00	0.496	0.00	0.00	0.220
Random Effects															
σ^2	0.04			0.09			0.06			0.06			0.05		
$T_{00\ ID}$	0.02 $_{ID}$			0.00 $_{ID}$			0.00 $_{ID}$			0.00 $_{ID}$			0.00 $_{ID}$		
N	15 $_{ID}$			9 $_{ID}$			8 $_{ID}$			130 $_{ID}$			41 $_{ID}$		
Observations	81			50			44			732			248		
Marginal R^2	0.003			0.032			0.019			0.001			0.006		

Note. Odds Ratios (with standard error) and goodness-of-fit statistics for the five logistic mixed effects models regressing the proportion infants spent looking at own-race faces on their age in days (mean-centered) with a random intercept for participant ID. There are five separate models: one for monoracial Asian infants, one for monoracial Black infants, one for monoethnic (no race noted) Hispanic infants, one for monoracial White infants and one for multiracial infants. All five models included a random intercept for participant ID and a random intercept for face pair. There is no random intercept for trial in these models because including this term caused the models to fail to converge and this term explained relatively little, if any, variance in all other models.

Table S16

Logistic Mixed-Effects Regression Results for Infants' Attention to Different Race and Ethnicity Faces

	Asian-Black			**Asian-Hispanic**			**Asian-White**			**Black-Hispanic**			**Black-White**			**Hispanic-White**		
Predictors	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*
(Intercept)	−0.06	0.01	**<0.001**	0.478	0.01	**<0.001**	0.48	0.01	**<0.001**	0.54	0.01	**<0.001**	0.56	0.25	**<0.001**	0.57	0.01	**<0.001**
Age	0.00	0.00	0.573	0.00	0.00	0.174	0.00	0.00	0.559	0.00	0.00	0.575	1.00	0.00	0.133	−0.00	0.00	0.501
Random Effects																		
σ^2	0.07			0.06			0.06			0.06			0.06			0.06		
τ_{00}	0.00 $_{ID}$			0.00 $_{ID}$			0.00 $_{ID}$			0.00 $_{ID}$			0.00 $_{ID}$			0.00 $_{ID}$		
N	198 $_{ID}$			191 $_{ID}$			193 $_{ID}$			197 $_{ID}$			199 $_{ID}$			201 $_{ID}$		
Observations	362			348			355			358			367			369		
Marginal R^2	0.001			0.005			0.001			0.001			0.006			0.001		

Note. Estimates (with standard error) and goodness-of-fit statistics for the six linear mixed effects models regressing the proportion infants spent looking at the left face in a pair (e.g., Asian for Asian-Black, Hispanic for Hispanic-White)* on infants' age in days (mean-centered) with a random intercept for participant ID (ID) and a random intercept for face pair (trial), separated by the race/ethnicity pair comparison (e.g., Asian-Black).

* To allow for interpretation of the intercept in these models, that is, the tendency to look longer at one face or the other, we subtracted 0.5 from the proportion spent looking at one face vs. the other. Taking Asian-Black trials as an example, we subtracted 0.5 from each infants' proportion attention to Asian faces on these trials. The intercept is a test against 0. That means, if the estimate of the intercept on the Asian-Black trial is significantly positive, infants would look longer at Asian than Black faces. If the estimate of the intercept is instead significantly negative (as it is), infants look longer at Black than Asian faces. A nonsignificant intercept would mean that infants look similarly long at Asian and Black faces.

Table S17

Logistic Mixed-Effects Regression Results for Infants' Attention to Own- vs. Other-Race Faces by Social Network Diversity

	Binary Entropy			**Binary Proportion Other-Race**		
Predictors	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*
(Intercept)	−0.03	0.01	0.062	−0.03	0.01	0.085
Age	−0.00	0.00	0.722	−0.00	0.00	0.503
Diversity	0.04	0.02	**0.018**	0.04	0.02	**0.030**
Age * Diversity	−0.00	0.00	0.448	−0.00	0.00	**0.048**
Random Effects						
σ^2	0.06			0.06		
$\tau_{00\ ID}$	$0.00_{\ ID}$			$0.00_{\ ID}$		
$\tau_{00\ trial}$	$0.00_{\ trial}$			$0.00_{\ trial}$		
N_{ID}	$147_{\ ID}$			$147_{\ ID}$		
N_{trial}	$12_{\ trial}$			$12_{\ trial}$		
Observations	808			808		
Marginal R^2	0.008			0.010		

Note. Odds Ratios (with standard error) and goodness-of-fit statistics for the two logistic mixed effects models regressing the proportion infants spent looking own-race faces on their age in days (mean-centered) with a random intercept for participant ID (ID) and a random intercept for face pair (trial) separately for (1) diversity as measured by whether there was more than one race/ethnicity represented in their social network (Binary Entropy; more than one: diversity = 0, only one: diversity = 1, mean-centered; analyses with this measure reported in the main text) and (2) diversity as measured by whether there was any other-race people in their social networks (Binary Proportion Other-Race; only own-race: diversity = 0, other-race present: diversity = 1, mean-centered; analyses with this measure reported elsewhere in SOM).

Table S18

Logistic Mixed-Effects Regression Results for Infants' Attention to Own- vs. Other-Race Faces by Neighborhood Diversity

	Entropy			**Proportion Other-Race**		
Predictors	*Estimate*	*SE*	*p*	*Estimate*	*SE*	*p*
(Intercept)	−0.03	0.01	**0.028**	−0.03	0.01	**0.031**
Age	−0.00	0.00	0.738	−0.00	0.00	0.728
Diversity	0.00	0.02	0.792	0.00	0.03	0.988
Age * Diversity	0.00	0.00	0.4**26**	−0.00	0.00	0.973
Random Effects						
σ^2	0.06			0.06		
τ_{00}	0.00_{ID}			0.00_{ID}		
	0.00_{trial}			0.00_{trial}		
N	12_{trial}			12_{trial}		
	203_{ID}			203_{ID}		
Observations	1125			1125		
Marginal R^2	0.001			0.000		

Note. Estimates (with standard error) and goodness-of-fit statistics for the linear mixed effects models regressing the proportion infants spent looking own-race faces on their age in days (mean-centered) with a random intercept for participant ID (ID) and a random intercept for face pair (trial) separately for (1) diversity as measured by the entropy of the racial diversity of their neighborhood (Entropy; diversity is mean-centered) and (2) diversity as measured by the proportion of other-race members in their neighborhood (Outgroup; diversity is mean-centered).

Section 6: Comparison with past research on infants' differential looking at own- and other-race faces

Table S19

Comparison between the characteristics of the present sample and those in prior literature.

Paper	Infant Age	Infant Race/Ethnicity	Number of Participants (per condition)	Exclusion Criteria	Stimuli Race/Ethnicity	Stimuli Gender	Mean Fixation Time	# Trials	Trial Length (Seconds)	Exposed to Diversity?
Present	3m – 14m	White, Asian, Black, Bi- or Multiracial, Hispanic	203	Infants did not provide at least 3s of accumulated dwell time on at least 4 trials (*n* = 8), parents' eyes were visible for 9 or more trials (*n* = 22), or both (*n* = 1), premature infants (n = 25), poor video quality (n = 7), not from US (n = 2)	All combinations of: (East) Asian, Black, Hispanic, White	women, men	4.79	12	6s	Yes
Kelly et al., 2005	3m	White, UK	64 (16)	side bias (n = 16), fussiness (n = 2)	Black-White; Middle Eastern-White; White-Asian; White-White	women, men	*NR*	2	10s	No
Bar-Haim et al., 2006	3m	White Israeli, Black Ethiopian	36 (12)	fussiness (n = 6)	Black-White	women, men	7.11s	8	10s	1/3 conditions
Kelly et al., 2007	3m	Chinese	64 (16)	side bias (> 95% of time spent looking at one face from the pairing, n = 11), fussiness (n = 6)	Chinese-White; Chinese-Middle Eastern; Chinese-Black; Chinese-Chinese	women, men	*NR*[c]	2	10s – 18s (12.7s average)	No
Liu et al., 2015[a]	3m, 6m, 9m	Chinese	100 (50)	failure to complete the calibration procedure, incomplete data capture, experimenter distraction, or parental interference (n = 26)	White-Asian, Black-Asian	women	*NR*[c]	6	10s – 18s	No
Fassbender et al., 2016[a]	3m, 6m, 9m	White, German	40, 44, 31[b]	ever seeing a Black person (n = 6, 5, 8[a]), not watching the screen/side bias/out of age range (n = 14, 5, 10[a])	Black-White	women	*NR*	24, 18, 12[b]	5.5s	No
Montoya et al., 2017[a]	4m, 6m, 8m, 10m, 12m	White, Black, East Asian, Multiracial	47	*NR*	all combinations of: Black, White, East-Asian, Indian	women	*NR*[d]	6	*NA*[c]	Yes
Singarajah et al., 2017	11m	White, Hispanic	77	infants did not provide at least 300 ms of accumulated dwell times on at least half the trials (n = 10)	Black-White, Black-Hispanic, Hispanic-White	women, men	*NR*	24	4s	Yes
Singh et al., 2022, Study 1	3m, 6m, 9m	Chinese	135	technical errors (n = 4), fixation times that exceeded 3 standard deviations of the group mean (n = 1), or prematurity (n = 1)	Chinese-Indian	women, men	*NR*[c]	4	minimum 10s accumulated dwell time	Yes
Singh et al., 2022, Study 2	6-7m	Chinese	20	*NR*	Chinese-White	women, men	*NR*[c]	4	minimum 10s accumulated dwell time	Yes

Note. NR stands for "not reported." All studies except the present study and Montoya et al. (2017) used proportion looking time at own- vs. other-race faces averaged at the participant level as their main DV. Montoya et al. (2017) used a slightly different method: they used *differential attention to faces*, rather than the proportion spent looking at own-race faces, as their main DV.

a. These studies were longitudinal. All other studies were cross-sectional.
b. These values are reported separately by infants' age (3m, 6m, 9m).
c. Trials were displayed until 10s of fixation had elapsed or the infant spent 10s looking away from the trial.
d. "The infant could look at the screen for up to 10,000 accumulated milliseconds."

Section 7: Non-Preregistered Exploratory Analyses

Here we report an additional exploratory analysis motivated by reviewers.

Section 7A: Does exposure to diversity in social networks moderate monoracial infants' attention to own- and other-race faces?

In the main text, we operationalized social network diversity as whether infants had only one racial/ethnic group represented (e.g., no diversity) or two or more racial/ethnic groups represented (e.g., any diversity) in their networks. By this definition, most infants with multiple racial-ethnic identities (e.g., a Black-White biracial infant) had more than one racial-ethnic group in their social network (e.g., a Black mother and a White father). To examine whether diversity in infants' social network more generally predicts differential attention to own- vs. other-race faces or whether there is something special about multiracial infants--who, again, constitute a significant portion of the *any diversity* sample—we report below a non-preregistered, exploratory analysis of how *monoracial* infants (n = 119) look at own- vs. other-race faces as a function of the diversity of their social networks. For this analysis with just monoracial infants, network racial entropy (i.e., whether there is only one racial-ethnic group represented or not) and network racial outgroup exposure (i.e., whether there are any other racial-ethnic group members represented or not) are the same. Our sample of monoracial infants were roughly evenly distributed with respect to exposure to diversity ($n_{\text{no diversity}}$ = 58; $n_{\text{any diversity}}$ = 61).

As in the main text with all infants, we find a significant two-way interaction between face race (own-race vs. other-race) and exposure to diversity, b = 500.7, *SE* = 145.8, $p < .001$ (see Figure S22 Panel A). This two-way interaction was qualified by a significant three-way interaction between face race (own-race vs. other-race), exposure to diversity, and infant's age, b = −4.8, SE = 1.7, $p = .006$. To unpack this three-way interaction, we used the Johnson-Neyman procedure (Johnson & Fay, 1950), which identifies the point in a two- (or three-) way-interaction where the difference between groups is significant using the 'interactions' package in R (Long, 2019).

Monoracial infants with no exposure to diversity looked longer at other-race than own-race faces when they were younger than 10.19 months old (n = 47)—corroborating the findings from the full sample—and similarly long at other-race and own-race faces when they were older than 10.19 months (n = 11; see Figure S22 Panel B).

Monoracial infants with any exposure to diversity looked similarly long at own-race and other-race faces when they were between the ages of 4.52-10.62 months (n = 42), also corroborating findings from the full sample. These monoracial infants with any exposure to diversity who were younger than 4.52 months (n = 9) looked longer at own-race than other-race faces while those who were older than 10.62 months (n = 10) looked longer at other-race than own-race faces (see Figure S22 Panel B).

Table S20

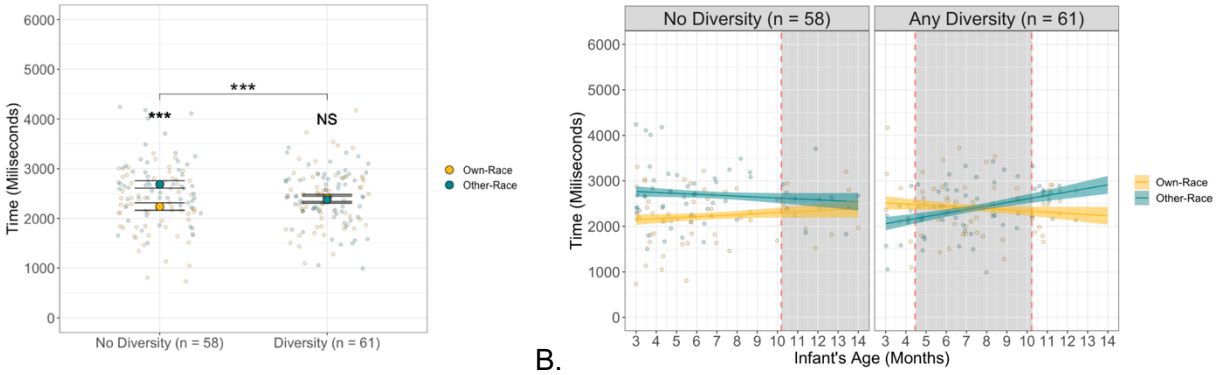
Monoracial Infants' Attention to Own- vs. Other-Race Faces by Exposure to Diversity

	Binary Entropy		
Predictors	*Estimate*	*SE*	*p*
(Intercept)	2434.2	36.7	<0.001
Own-Race	−190.8	73.4	**0.009**
Age	0.5	0.4	0.231
Binary Diversity	−50.4	73.4	0.492
Own-Race * Age	−1.0	0.9	0.228
Own-Race * Binary Diversity	506.6	146.7	**<0.001**
Age * Diversity	1.0	0.9	0.261
Own-Race * Age * Binary Diversity	−4.7	1.7	**0.006**
N	12_{trial}		
	119_{ID}		
Observations	1288		
Marginal R^2	0.023		

Note. Estimates (with standard error) and goodness-of-fit statistics for the mixed effects models regressing monoracial infants' time spent looking at a face on infants' age in days (mean-centered), which face (own-race = 1, other-race = 0, mean-centered), the diversity of infants' social network, and all interactions. The model included a random intercept for participant ID and a random intercept for face pair.

Figure S22

Monoracial Infants' Visual Attention to Own- and Other-Race Faces by Social Network Diversity



Note. Panel A depicts the significant effect of exposure to diversity in social networks on monoracial infants' attention to own- and other-race. Large dots are estimated means, error bars are standard errors, small dots are horizontally jittered data points averaged at the participant level; that means that these points represent the average amount of time an infant spent looking at own-race and other-race faces. For monoracial infants with no diversity in their social networks, there was a 0.34 *SD* gap favoring looking longer at other-race than own-race faces. Panel B depicts the significant three-way interaction among infants' age, whether faces are own- or other-race, and the diversity of their social networks on monoracial infants' attention to own- and other-race faces. Lines are predicted effects, ribbons are standard errors, and small dots are individual data points. The gray background represents non-significant differences in attention to own- vs. other-race faces while the white background represents significant differences in attention to own- vs. other-race faces (as per a Johnson-Neyman analysis).

References

Johnson, P. O., & Fay, L. C. (1950). The Johnson-Neyman technique, its theory and application. *Psychometrika*, *15*(4), 349-367.

Long, J. A. (2019). *interactions: Comprehensive, User-Friendly Toolkit for Probing Interactions*. R package version 1.1.0, https://cran.r-project.org/package=interactions.

Quinn, P. C., Uttley, L., Lee, K., Gibson, A., Smith, M., Slater, A. M., & Pascalis, O. (2008). Infant preference for female faces occurs for same-but not other-race faces. *Journal of neuropsychology*, *2*(1), 15-26.