

Children Trust a Consensus Composed of Outgroup Members—But Do Not Retain That Trust

Eva E. Chen
Harvard University

Kathleen H. Corriveau
Boston University

Paul L. Harris
Harvard University

Children prefer to learn from informants in consensus with one another. However, no research has examined whether this preference exists across cultures, and whether the race of the informants impacts that preference. In 2 studies, one hundred thirty-six 4- to 7-year-old European American and Taiwanese children demonstrated a systematic preference for a consensus. Nevertheless, the initial strength and persistence of that preference depended on the racial composition of the consensus. Children's preference for consensus members belonging to the same race as themselves persisted even when only one consensus member remained to provide information. When the consensus consisted of different-race informants, preference for the consensus was initially apparent but lost when only one member from the consensus remained with the dissenting informant.

Children willingly trust the testimony of other people when learning new information (e.g., new words) about the world (Harris & Koenig, 2006). Yet, despite their reliance on others' testimony across numerous domains, children are selective in whom they trust. They monitor informants' past accuracy (Birch, Vauthier, & Bloom, 2008; Corriveau & Harris, 2009a, 2009b; Jaswal & Neely, 2006; Koenig, Clément, & Harris, 2004; Koenig & Harris, 2005; Pasquini, Corriveau, Koenig, & Harris, 2007) as well as the number of informants making a given claim (Corriveau, Fusaro, & Harris, 2009; Fusaro & Harris, 2008).

Fusaro and Harris (2008) introduced 4-year-olds to two informants and two bystanders. When the informants offered conflicting names for novel objects, both bystanders expressed agreement with one informant and disagreement with the other. Subsequently, when asked to say what they thought the object was called, children selectively endorsed the name supplied by the informant with whom the bystanders had agreed. Similar results emerged in a

follow-up study involving 3- and 4-year-olds (Corriveau et al., 2009). On several trials, the experimenter produced an unfamiliar name and asked four adults to indicate (via pointing) which of several objects fit the name. Three adults simultaneously pointed to one object, whereas the fourth indicated a different object. When invited to make their choice, both 3- and 4-year-olds selectively chose the object endorsed by the three-person consensus.

In sum, in deciding whose testimony to trust, numbers count. If several people endorse one claim but a single individual endorses a competing claim, children agree with the group. This sensitivity to a consensus is surprisingly persistent. In the second part of the studies just described (Corriveau et al., 2009; Fusaro & Harris, 2008), children were presented with competing claims by a single member of the prior consensus (the other consensus members having left) and the former dissenter. Children sought and endorsed information from the informant who had previously belonged to the consensus. Thus, preschoolers view consensus membership as an indication of trustworthiness—even when the consensus has dispersed.

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Correspondence concerning this article should be addressed to Eva E. Chen, Room 420, Hui Oi Chow Science Building, The University of Hong Kong, Pokfulam Road, Hong Kong. Electronic mail may be sent to evaechen@hku.hk.

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Children's sensitivity to a consensus—both in the initial and later phases of these experiments—might be due to one of three proclivities. First, children might simply register that several different informants agree with one other. When several individual informants all make the same claim, the claim is likely true, even if one informant dissents. Children might therefore attend to the existence of a consensus regardless of the consensus members' identity. Second, children might be alert to the identity of consensus members. Rather than considering each individual as an independent witness, children might think of the consensus as composed of individuals belonging to a particular social group, and use this group information as a cue to the trustworthiness of its members. Finally, children might consider both consensus and social group membership cues, weighing them against each other to determine whom they should trust for more information. In the two studies just described, all the informants were European American—as were most of the participants. Thus, children may have noted which of the informants were in consensus with one another and that the informants belonged to the same racial group as themselves (i.e., an *ingroup*), using both cues to make their decisions. But, if the two cues are placed in conflict, is there a preference for one cue over the other when deciding whose claims to endorse?

The present series of studies examined the impact of social group membership and of the presence of a consensus on children's acquisition of new information. Extensive research in the field of social cognitive development indicates that beginning at a very young age, children attend to social group membership, especially when social categorization is directly relevant to the task at hand (Degner & Wentura, 2010). Infants of 5 and 6 months, for instance, look longer at people who speak their native language (Kinzler, Dupoux, & Spelke, 2007). In addition, 9-month-old infants are able to distinguish faces belonging to their own race from faces belonging to other races (Kelly et al., 2007). By the time they reach 6 years of age, children display an understanding of social ingroups, incorporating various social group identities (e.g., gender) into their self-conception (Bennett & Sani, 2008) and expressing a clear preference for their own ethnic or racial group, both explicitly (Abrams, Rutland, & Cameron, 2003) and implicitly (Banaji, Baron, Dunham, & Olson, 2008; Baron & Banaji, 2006; Dunham, Chen, & Banaji, 2012). European American children, in particular, have been shown to exhibit negative attitudes toward minority *outgroups*

(e.g., African Americans) as early as 4 years of age (Aboud, 1988). Finally, by the time they reach early adolescence, White European children tend to show spontaneous, negative evaluations of racial or ethnic outgroups (e.g., Moroccan immigrants) relative to their ingroups (Degner & Wentura, 2010).

Once developed, social group membership can influence children's choices. For example, children express more positive views toward an ingroup peer than toward an outgroup peer (Arthur, Bigler, Liben, Gelman, & Ruble, 2008; Nesdale, Maass, Griffiths, & Durkin, 2003). In elementary school, ingroup biases may be exacerbated by constant exposure to a multicultural environment—even leading to ethnic victimization—unless explicit guidance is provided to reduce prejudices (Verkuyten, 2008). These ingroup preferences persist across the lifespan, influencing the real-world decisions of adults, such as voting choices (Payne et al., 2010), interpersonal interactions (Dovidio, Kawakami, & Gaertner, 2002), reasoning about intimate relationships (Killen, Stangor, Price, Horn, & Sechrist, 2004), and perceptions of emotion (Hugenberg & Bodenhausen, 2003).

Considering the research on trust in a consensus and on social group membership together, it is plausible that young children rely on both consensus and social group membership cues when gathering information from the people in their environment. However, little is known about how children weigh these two sources of information. Past work has shown that children attend to social group membership when making decisions about whom to trust while learning. For instance, 4- and 5-year-old children endorse novel object functions and labels provided by an informant belonging to the child's social (e.g., linguistic, racial) group (Corriveau, Kinzler, & Harris, 2012; Kinzler, Corriveau, & Harris, 2011; Shutts, Banaji, & Spelke, 2010). Additionally, elementary-age children are more likely to trust members of their racial ingroup to keep promises and secrets and to prefer ingroup members as friends (Rotenberg & Cerda, 1994). In short, social groups serve as an important cue to children in establishing epistemic as well as socioemotional trust, and therefore may also be an important cue when children are learning new information.

In the two studies reported here, we examined how children process consensus cues and social group membership cues when both are presented to them simultaneously. We asked whether children: (a) associate trustworthiness with a consensus, regardless of its composition, (b) associate trustworthiness with a consensus only when it is

composed of people belonging to the same social group as themselves, or (c) weigh consensus and social group membership cues against each other. In line with much of the work on children's understanding of social group membership (e.g., Aboud, 1988; Baron & Banaji, 2006), we focused on racial (or ethnic) group membership. Racial group differences are easily identifiable in adults and children by the age of 4 (Aboud, 1988). In Study 1, we tested European American children, presenting them with European American informants (i.e., ingroup members) as well as East Asian informants (i.e., outgroup members). In Study 2, we tested Taiwanese children, presenting them with East Asian informants (i.e., ingroup members) and European American informants (i.e., outgroup members).

In Study 1, European American children viewed video clips featuring a three-person consensus and a dissenter, and were asked with whom they agreed. The children were randomly assigned to one of three conditions. In the *all-ingroup* condition, three European American informants formed a consensus. The dissenter was also European American. In the *all-outgroup* condition, three East Asian informants formed a consensus. The dissenter was also East Asian. Finally, in the *3-outgroup + 1-ingroup* condition, three East Asian informants formed a consensus but the dissenter was European American.

As in Corriveau et al. (2009), children in all three conditions were asked to evaluate the conflicting information provided by the consensus and the dissenter in four *pretest* trials, during which all four informants were present. Subsequently, to determine if children's preference for a consensus would extend to individual consensus members even in the absence of the consensus, children were given *test* trials in which they were asked to evaluate information provided by an individual member of the former consensus and the dissenter.

We predicted that children in the all-ingroup condition would perform similarly to the children in Corriveau et al. (2009), preferring the information offered by the consensus during the pretest phase and also by the remaining member of the consensus in the test phase. We anticipated several potential outcomes for children in the all-outgroup and 3-outgroup + 1-ingroup conditions. If children view consensus as the key criterion in making a decision about whose information to trust, irrespective of the social composition of that consensus, they should prefer the information provided by a consensus as opposed to a lone dissenter, regardless of the racial composition of the consensus. Moreover,

this preference should persist even in the test trials, when not all members of the consensus are present. Thus, children should respond similarly in all three conditions. On the other hand, if children prefer a consensus only when it is composed of informants from the same group as themselves, they should prefer the information provided by the consensus in the all-ingroup condition but not in the all-outgroup or 3-outgroup + 1-ingroup conditions. Finally, if children weigh ingroup information over consensus information, in the 3-outgroup + 1-ingroup condition, they might display a preference for the single ingroup informant.

Study 1

Method

Participants. Sixty-nine European American children ($M_{\text{age}} = 5;5$, age range = 4;4–6;9; 30 females) were tested. We recruited children in this age range so that comparisons could be drawn with previous work on children's selective trust. Children were recruited from a local museum and school. All children in the target age range were invited to participate. Written parental consent, as well as children's verbal assent, was obtained for all participants. Although no information on socioeconomic status was collected, both the museum and school were located in an upper-middle-class neighborhood near a large research university in Boston, Massachusetts. Two children were excluded due to experimenter error. An additional 5 children were excluded because their favorite color was the same as the shirt color of one of the informants.

Experiment. Children were randomly assigned to one of three conditions. Recall that in the all-ingroup condition ($n = 21$, $M_{\text{age}} = 5;3$, age range = 4;4–6;2), all four informants were European American, like the participants. In the 3-outgroup + 1-ingroup condition ($n = 19$, $M_{\text{age}} = 5;6$, age range = 4;7–6;6), the consensus members were East Asian, whereas the dissenter was European American. Finally, in the all-outgroup condition ($n = 29$, $M_{\text{age}} = 5;6$, age range = 4;4–6;9), the four informants were East Asian. All informants were female, wore different primary-colored T-shirts and blue jeans, tied their hair back away from their faces, and had similar body types (see Figure 1). Because young children often rely on adult input when acquiring knowledge (Gelman, 2009), we chose to use adult informants for our study. The informants maintained neutral expressions throughout the testing session. There were no significant differences



Figure 1. Sample screenshots for the European American (Study 1) and the Taiwanese (Study 2) participants.

in the participants’ ages across the three conditions, $F(2, 66) = 1.26, p = .290$.

As in the study of Corriveau et al. (2009), children were tested in two phases: pretest phase and test phase. In the pretest phase, children watched four short film clips, each featuring four female informants and three novel objects positioned on the table in front of the informants (see Figure 1). Each participant was seated before a laptop. The child’s attention was first directed to the screen by the experimenter, and the child was then asked to help label the shirt colors as the experimenter pointed to each informant in random order: “I have four friends—do you see them here? What color is this girl’s shirt? What color is this second girl’s shirt? What color is this third girl’s shirt? And what is the color of this last girl’s shirt? Now, these girls are going to show you some objects, and then teach you their names. I want you to look closely, and then I’m going to ask you some questions.” After the introduction, the experimenter then continued by indicating the novel objects for each of the four clips, for example: “There are three toys here, and one of them is called a *Modi*. Do you know which

one is a *Modi*? I don’t know which one is a *Modi*, but these girls can help us. Let’s watch!” The child then watched as three informants simultaneously pointed to one object, while a lone dissenter pointed to a different object. Once the informants’ arms were back by their sides, the experimenter pointed to a still frame of the four informants and the three objects and asked: “Which toy do you think is the *Modi*?” For labels of the objects used in the pretest, see Table 1.

Once the participant had watched all four pretest phase video clips, the experiment proceeded to the test phase. In the test phase, children watched four short video clips, each featuring one member from the consensus and the dissenter, with one novel object placed on the table before the two informants (see Figure 1). Prior to watching each clip, the experimenter said, pointing to the screen: “Two of the girls had to leave. Here are the girls who are left. Can you tell me again what color shirts they are wearing?” Once the child reidentified the shirt colors of the two remaining informants, the experimenter indicated the novel object for each of the four clips, for example: “Now these girls are going

Table 1
Stimuli Used in Pretest Trials in Studies 1 and 2

Novel label	Distractor	Consensus-endorsed object	Dissenter-endorsed object
Modi/Mōmō	Wooden paint roller	Black and gray knee pad	Gray rubber squeegee
Toma/Tótó	Green toilet flapper	Black toilet plunger	Red and white metal
Wug/Wówó	Gold and red sprinkler	Yellow hose attachment	Blue and red hook
Dax/Dádá	Wooden fruit juicer	White and blue toilet flapper	Orange funnel

to tell us about some more funny-looking toys. Do you know what this toy is called? I don't know what it is called, but I bet these girls can help us out." The experimenter first posed an *ask* question: "Which girl would you like to ask?" Once the child chose one of the two informants, the experimenter posed an *endorse* question, pointing to each informant on the screen: "She says this toy is a *Slod*, and she says this toy is a *Linz*. What do you think? Is it a *Slod* or a *Linz*?" Children then indicated what they thought the object was called (see Table 2 for the possible labels for each object).

At the end of the test phase, two follow-up questions were asked to probe children's sensitivity to social group differences. For the first *social group recognition* question, the experimenter pointed to a still frame of the two remaining informants and asked, "Other than shirt color, do these two girls look different from one another?" If the child responded positively, the experimenter followed by asking: "What differences do you see?" Differences pointed out by the participant were noted. Next, for the *identification* question, the experimenter asked, indicating each informant in random order: "Do you think you are more like this girl over here or like this girl over here, or neither one of them?"

Results

Pretest phase. Table 3 displays the mean frequency with which participants in each condition chose the object indicated by the consensus as well as comparisons with chance performance (because there were three objects from which to choose, chance performance was calculated as 33%). Note that children did not confine their choices to the objects that had been indicated by the informants. Among the participants, 8 (12%) selected the object indicated by none of the informants once, 4 (6%) selected the object indicated by none of the informants twice, and 2 (3%) selected the object indicated by none of the informants three times. Inspection of Table 3 confirms that children in all

three conditions favored the information provided by the consensus as opposed to the lone dissenter ($M_s \geq 2.07$).

An analysis of covariance (ANCOVA), with condition (all-ingroup, 3-outgroup + 1-ingroup, all-outgroup) as a between-subjects factor, age in months as a covariate, and children's choice of novel object as the dependent variable, revealed main effects of condition, $F(2, 65) = 6.54, p = .003, \eta^2 = .16$, and age, $F(1, 65) = 5.70, p = .02, \eta^2 = .07$. Post hoc Bonferroni analysis indicated that children in the all-ingroup condition displayed a stronger preference for the consensus compared to children in the all-outgroup condition ($p = .008$); no other differences were found between the three conditions. Upon splitting the children into older and younger groups, based on the median age (64 months), we found that older children ($M = 2.73, SD = 1.28$) were more likely than younger children ($M = 2.19, SD = 1.22$) to choose the object indicated by the consensus. Nevertheless, both age groups were significantly above 33% chance in choosing the referent indicated by the consensus: younger children, $t(31) = 8.49, p < .001, d = 3.05$; older children, $t(38) = 12.27, p < .001, d = 3.98$.

Test phase. No significant difference between the children's responses to the ask and endorse questions emerged for any of the three conditions: all-ingroup, $t(20) = -.18, p = .858$; 3-outgroup + 1-ingroup, $t(18) = -.64, p = .527$; all-outgroup, $t(28) = -1.47, p = .153$; Cronbach's alpha = .575. We therefore collapsed across the two question types and created a total test score (maximum = 8). Table 3 displays the mean frequency with which participants in each condition chose the label provided by the consensus member in the test trials, as well as comparisons with chance performance (50%). Children in the all-ingroup condition continued to display a systematic preference for the consensus member, $t(20) = 2.65, p = .015, d = 1.19$. However, children in the 3-outgroup + 1-ingroup, $t(18) = 1.00, p = .331$, and all-outgroup, $t(28) = 1.82, p = .079$, conditions showed no systematic preference for either informant.

An ANCOVA, with condition (all-ingroup, 3-outgroup + 1-ingroup, all-outgroup) as the between-subjects factor, age in months as the covariate, and children's choice of novel label as the dependent variable, revealed a significant effect of condition, $F(2, 63) = 3.32, p = .043, \eta^2 = .09$, as well as an interaction between condition and age, $F(2, 63) = 3.69, p = .030, \eta^2 = .10$. There was no significant effect of age, $F(1, 63) = .03, p = .854$. To understand the interaction further, we split the children into

Table 2
Stimuli Used in Test Trials in Studies 1 and 2

Novel object	Informant	Informant
	1 labels	2 labels
Black and gold pizza spatula	Slod/Sōsō	Linz/Linlīn
Yellow sprinkler head	Zazz/Zázá	Yiff/Yīyī
Silver metal bathroom hook	Lig/Lilí	Joob/Jújú
Red and gold bottle	Mogo/Gógó	Nevi/Réré

Table 3
 Mean Scores, Comparisons With Chance Performance, and Effect Sizes for Studies 1 and 2

Experiment and score	All-ingroup condition			3-outgroup + 1-ingroup condition			All-outgroup condition		
	<i>M</i>	<i>t</i>	<i>d</i>	<i>M</i>	<i>t</i>	<i>d</i>	<i>M</i>	<i>t</i>	<i>d</i>
Study 1									
Pretest score (maximum = 4)	3.14 (.20)	9.13***	4.08	2.58 (.28)	4.48***	2.11	2.07 (.25)	2.92**	1.10
Total test score (maximum = 8)	5.10 (.41)	2.65*	1.19	4.47 (.47)	1.00	.47	4.45 (.25)	1.82	.69
Study 2									
Pretest score (maximum = 4)	2.77 (.26)	5.49***	2.40	2.25 (.24)	3.79***	1.58	2.86 (.24)	6.31***	2.82
Total test score (maximum = 8)	5.00 (.34)	2.93**	1.28	3.54 (.39)	-1.16	-.48	4.57 (.36)	1.58	.71

Note. Mean scores indicate the number of trials in which children preferred the object endorsed by the consensus (pretest) or the number of questions for which the children's responses indicated greater preference for the member of the previous consensus than in the dissenter (test). Standard errors are given in parentheses.

* $p < .05$. ** $p < .01$. *** $p < .001$.

two age groups based on the median (64 months) and examined the children's responses by age group and condition. There were no differences in children's responses by condition in the younger group, $F(2, 28) = .00$, $p = .998$, but a near significant effect of condition emerged for the older group, $F(2, 30) = 3.00$, $p = .065$. The older children in the all-ingroup condition showed a stronger preference for information provided by the consensus member ($M = 6.00$, $SD = 1.26$) compared to the older children in the 3-outgroup + 1-ingroup ($M = 4.00$, $SD = 2.26$) and the all-outgroup ($M = 4.29$, $SD = 1.36$) conditions.

Summarizing across the two phases, children in the all-ingroup condition showed a clear preference for the consensus (composed of all ingroup members) in both the pretest phase and the test phase. In the other two conditions, where the consensus was not composed of ingroup members, children showed a preference for the consensus in the pretest phase, but no systematic preference for the member who had previously belonged to the consensus in the test phase. This variation across conditions in the test phase was more evident among older children.

Social group recognition. Recall that at the end of the test phase, children were asked about differences between the informants. Children were credited with recognizing social group differences if they identified race or facial features as the main difference between the two informants. For instance, children received credit if they mentioned a difference in eye color, but not if they only mentioned a difference in the color of the informants' jeans. Two individual researchers rated a subset of participants' responses separately; agreement between the two ratings was 100%.

When the informants differed in race, as in the 3-outgroup + 1-ingroup condition, 63% of children mentioned racial characteristics or facial features.

By contrast, when the informants did not differ in race, as in the all-ingroup and all-outgroup conditions, only 14% and 17% of children, respectively, mentioned racial characteristics or facial features. A Fisher's exact test confirmed that a greater proportion of children recognized a difference in social groups in the 3-outgroup + 1-ingroup condition as compared to the all-ingroup and all-outgroup conditions ($p = .003$).

To examine whether social group recognition influenced children's responses in the pretest and test phases for the 3-outgroup + 1-ingroup condition (where there was an actual mixture of informants from various racial groups), we ran two ANCOVAs. The first ANCOVA, with social group recognition (recognition = 1, no recognition = 0) as the between-subjects factor, age in months as the covariate, and children's responses in the pretest phase as the dependent variable, revealed no significant effect of either social group recognition, $F(1, 16) = .22$, $p = .643$, or of age, $F(1, 16) = 1.69$, $p = .212$. The second, with social group recognition as the between-subjects factor, age in months as the covariate and children's responses in the test phase as the dependent variable, also revealed no effects of either social group recognition, $F(1, 16) = .05$, $p = .822$, or age, $F(1, 16) = 2.12$, $p = .165$. Logistic regression analyses, with social group recognition as the dependent variable and age as the independent variable, confirmed that there was no impact of age on children's ability to recognize social group differences, $z = 1.20$, $p = .229$, $\chi^2(1, n = 69) = 1.47$, $p = .225$.

Identification. Finally, we examined whether children identified with one of the two informants in the test phase. Children could identify with the consensus member, with the dissenter, or with neither informant. Table 4 shows the percentage of children

displaying each of these three patterns as a function of condition. Inspection of Table 4 reveals that the tendency to identify with the dissenter was more frequent in the 3-outgroup + 1-ingroup condition as compared to the other two conditions. A Fisher's exact test confirmed the statistically significant relation between condition and the type of answer given ($p = .002$).

To examine whether identification with the dissenter had an impact on children's responses in the pretest and test phases for the 3-outgroup + 1-ingroup condition, we ran two ANCOVAs. The first ANCOVA, with identification with the dissenter as the between-subjects factor, age in months as the covariate, and children's responses in the pretest phase as the dependent variable, revealed no significant effects of either identification with the dissenter, $F(1, 15) = 3.55, p = .079$, or of age, $F(1, 15) = .496, p = .492$. The second ANCOVA, with identification with the dissenter as the between-subjects factor, age in months as the covariate, and children's responses in the test phase as the dependent variable, also revealed no significant effects of either identification with the dissenter, $F(1, 16) = .004, p = .952$, or of age, $F(1, 16) = 2.01, p = .175$. Logistic regression analyses, with identification with the dissenter as the dependent variable and age as the independent variable, showed that there was no effect of age on how children chose to identify with the dissenter, $z = .77, p = .440, \chi^2(1, n = 69) = .60, p = .439$.

Discussion

The results from Study 1 demonstrate an early sensitivity to a consensus. In the pretest phase,

Table 4
Percentage of Children Identifying With the Consensus Member, Dissenter, or With Neither Informant for Studies 1 and 2

	Study 1 ($n = 69$)	Study 2 ($n = 67$)
All-ingroup condition		
Consensus member	24	14
Dissenter	19	9
Neither informant	57	77
3-outgroup + 1-ingroup condition		
Consensus member	21	0
Dissenter	58	62.5
Neither informant	21	37.5
All-outgroup condition		
Consensus member	45	0
Dissenter	7	0
Neither informant	48	100

when all members of the consensus were present, children in all three conditions systematically chose the referent endorsed by the consensus—even in the 3-outgroup + 1-ingroup condition where consensus information was in conflict with ingroup status. Nevertheless, of the three conditions, children in the all-ingroup condition exhibited the strongest preference for the consensus. Relative to the participants in the all-ingroup condition, children in the 3-outgroup + 1-ingroup condition showed a slightly weaker preference for the information provided by the consensus, although this difference was not statistically significant. Finally, children in the all-outgroup condition chose the referent indicated by the consensus significantly less often than children in the all-ingroup condition. These findings replicate and extend the earlier results of Corriveau et al. (2009). Consensus plays an important role in children's decisions about what information to trust, even when the members of the consensus belong to an outgroup. However, the racial composition of the consensus also appears to influence the degree to which it is preferred. Children are especially likely to agree with a consensus if it is composed of ingroup members.

In the test phase, evidence of children's sensitivity to the social group identity of the consensus members was also apparent. When a member of the consensus was alone with the dissenter, children in the all-ingroup condition systematically preferred the consensus member, who was also a member of the children's ingroup. By contrast, children were at chance when there was a conflict between social group and consensus information (as was the case in the 3-outgroup + 1-ingroup condition) and when both the consensus member and the dissenter were members of an outgroup (as in the all-outgroup condition). These results suggest that social group information moderates the consensus effect seen in the pretest.

In the pretest phase, older children were more likely to subscribe to the opinions of the majority compared to their younger counterparts. This greater preference for information provided by the consensus is consistent with the previous literature showing preadolescent children's increasing tendency to conform as they get older (Costanzo & Shaw, 1966). Older children are also more likely to understand that agreement among a consensus is a plausible, even good, indication of the informants' accuracy (Fusaro & Harris, 2008) and reliability (Corriveau et al., 2009), including instances when they could rely on their own perception (Corriveau & Harris, 2010). The effect of age was also apparent

in the test phase, with older, but not younger, children showing a stronger preference for the remaining consensus member in the all-ingroup condition as compared to the other two conditions.

In Study 2, we asked whether similar results would emerge among children growing up in a non-Western environment. Given that cultural differences can emerge early in childhood (Henrich, Heine, & Norenzayan, 2010) and given that social context can easily influence children's interpretation of events (Levy, Karafantis, & Ramirez, 2008), we were interested in whether children's sensitivity to a consensus and to social groups exists across different cultures, or whether it is limited to European American children. We chose to focus on children from an East Asian culture to examine possible differences between children from an individualistic culture and a collectivistic one.

Study 2

Much cross-cultural work in the past has focused on a comparison between European American and East Asian cultures (e.g., Markus & Kitayama, 1991), examining the differences between primarily individualistic (i.e., European American) and primarily collectivistic (i.e., East Asian) societies. In particular, studies on conformity have shown that in contrast to European Americans, participants from East Asian (e.g., Chinese, Japanese) cultures are more likely to conform to the majority opinion (Bond & Smith, 1996; Corriveau & Harris, 2010), to imitate an otherwise unfamiliar ingroup informant (Huang & Harris, 1973), and to prefer group harmony over an assertion of individuality (Kim & Markus, 1999). These results suggest that children from East Asian cultures may be particularly sensitive to the presence of a consensus.

Cross-cultural work has also uncovered some variation in children's developing understanding of social groups. Children in Taiwan are able to identify their racial group membership as early as 3 years of age (Kowalski & Lo, 2001). However, their awareness of the differences among racial groups and their ability to self-identify with their own racial group are less consistent compared to their European American counterparts (Dunham et al., 2012; Kowalski & Lo, 2001). These differences may be attributed to the more homogenous society in which Taiwanese children live. Research with children in other homogenous cultures has shown that they develop an understanding of racial labels and cues later than children growing up in heterogeneous

communities (Enesco, Guerrero, Callejas, & Solbes, 2008). Although other work has suggested that children from homogenous environments may perceive outgroup members more negatively, these participants were from a homogenous community located in a wider heterogeneous society (i.e., the United States; McGlothlin & Killen, 2006).

In light of the cross-cultural work that has been conducted with regard to both consensus and sensitivity to social group differences, we anticipated three possible findings. First, because East Asian participants tend to conform more to the majority opinion (Bond & Smith, 1996; Corriveau & Harris, 2010), Taiwanese participants may show a stronger preference for information provided by a consensus compared to their European American counterparts. Indeed, this stronger preference might emerge irrespective of the composition of the consensus. Second, since children who grow up in relatively homogenous societies are less consistent in their recognition of racial group differences and preference for a racial ingroup (Enesco et al., 2008; Kowalski & Lo, 2001), Taiwanese children's decisions to trust a consensus may be less affected by the racial identity of the consensus members. Finally, children from the United States and Taiwan may perform similar to one another. Because many young Taiwanese children and almost all European American children are able to recognize differences between their own social ingroup and other outgroups (Baron & Banaji, 2006; Dunham et al., 2012), it is plausible that children in both locations will be similarly attentive to both consensus and social group membership cues when learning new information.

Method

Participants. Sixty-seven children ($M_{\text{age}} = 5;5$, age range = 4;4–6;8; 30 females) were tested. All children were ethnically Chinese and were raised in Taiwan. Children were recruited from a kindergarten near a large research university in Taipei, Taiwan, in an upper-middle-class community similar to that of the European American children in Study 1. An additional 6 children were excluded due to experimenter error. Consent from the Taiwanese children was obtained in a similar manner as with the participants in the United States. Written parental permission and children's verbal assent was obtained for all participants before the study began.

Experiment. Although the experimenters running the studies were different (a European American experimenter ran Study 1 and an East Asian experimenter ran Study 2, so that the children were run

only by ingroup members), they were trained by the same researcher. All other study materials were essentially the same (see Figure 1 for sample images of what the participants saw, and Tables 1 and 2 for the novel labels used in the pretest and test phases). As in Study 1, children were randomly assigned to one of three conditions. In the all-ingroup condition ($n = 22$, $M_{\text{age}} = 5;6$, age range = 4;6–6;8), all four informants were East Asian. In the 3-outgroup + 1-ingroup condition ($n = 24$, $M_{\text{age}} = 5;8$, age range = 4;6–6;8), the consensus members were European American, and only the dissenter was East Asian. And finally, in the all-outgroup condition ($n = 21$, $M_{\text{age}} = 5;3$, age range = 4;4–6;3), the consensus members and the dissenter were all European American. There were no significant differences in age across the three conditions, $F(2, 64) = 2.86$, $p = .065$.

Results

Pretest phase. Table 3 displays the mean frequency with which participants in each condition chose the object indicated by the consensus in the pretest phase as a function of condition as well as comparisons with chance performance (33%). Inspection of Table 3 shows that children in all three conditions systematically chose the object indicated by the consensus more often than chance ($M_s \geq 2.25$). Among the Taiwanese participants, 4 (6%) selected the object indicated by none of the informants once, 1 (1%) selected the distractor twice, and 1 (1%) selected the distractor three times. An ANCOVA, with condition (all-ingroup, 3-outgroup + 1-ingroup, all-outgroup) as the between-subjects factor, age in months as the covariate, and children's choice of novel object as the dependent variable, revealed no significant main effects of condition, $F(2, 63) = 2.59$, $p = .083$, or of age, $F(1, 63) = 2.59$, $p = .112$, on the participants' preference for the information provided by the consensus.

Test phase. In all three conditions, there was no significant difference between children's responses to the ask and endorse questions: all-ingroup, $t(21) = -1.36$, $p = .186$; 3-outgroup + 1-ingroup, $t(23) = -.62$, $p = .543$; all-outgroup, $t(20) = -.34$, $p = .741$; Cronbach's $\alpha = .660$. As a result, a total test score (maximum = 8) was created by collapsing across the two question types. Table 3 displays the mean frequency with which participants in each condition chose the label provided by the consensus member in the test trials, as well as comparisons with chance performance (50%).

Children in the all-ingroup condition continued to display a systematic preference for the consensus

member, $t(22) = 2.93$, $p = .008$, $d = 1.28$. However, children in the 3-outgroup + 1-ingroup, $t(23) = -1.16$, $p = .257$, and all-outgroup, $t(20) = 1.58$, $p = .131$, conditions showed no systematic preference for either informant. An ANCOVA, with condition (all-ingroup, 3-outgroup + 1-ingroup, All-outgroup) as the between-subjects factor, age in months as the covariate, and children's choice of novel label as the dependent variable, revealed a significant main effect of condition, $F(2, 63) = 4.49$, $p = .015$, $\eta^2 = .12$, but not of age, $F(1, 63) = .53$, $p = .468$. Post hoc Bonferroni analyses indicated that children in the all-ingroup condition displayed a stronger preference for information provided by the consensus member compared to children in the 3-outgroup + 1-ingroup condition ($p = .019$); no other significant differences were found.

Social group recognition. Children received credit for the social recognition question in the same manner as in Study 1. A Fisher's exact test confirmed that a higher proportion of children in the 3-outgroup + 1-ingroup condition (10 of 24, or 42%), as compared to the all-ingroup (1 of 22, or 5%) and all-outgroup conditions (1 of 21, or 5%), identified a difference in social group membership between the consensus member and the dissenter ($p = .001$).

As with the participants in the United States, we examined whether children's ability to recognize social group differences affected their responses in the pretest and test phases for the 3-outgroup + 1-ingroup condition by conducting two ANCOVAs. The first ANCOVA, with social group recognition as the between-subjects factor, age in months as the covariate, and children's responses in the pretest phase as the dependent variable, revealed no significant effects of either social group recognition, $F(1, 64) = .42$, $p = .518$, or of age, $F(1, 64) = .51$, $p = .479$. The second ANCOVA, with social group recognition as the between-subjects factor, age in months as the covariate, and children's responses in the test phase as the dependent variable, also revealed no effects of either social group recognition, $F(1, 64) = 1.41$, $p = .239$, or of age, $F(1, 64) = .31$, $p = .582$.

Logistic regression analyses, with social group recognition as the dependent variable and age as the independent variable, revealed a significant impact of age on children's ability to recognize social group differences, $z = 2.71$, $p = .007$, $\chi^2(1, n = 67) = 9.28$, $p = .002$. Older children were 1.17 times more likely to recognize differences in social groups compared to younger children. Splitting the children into two age groups based on the median age (66 months), we found that 9 of the 34 (26.5%)

older children recognized social group differences, whereas only 3 of the 33 (9%) younger children did the same. This difference was especially apparent in the 3-outgroup + 1-ingroup condition, where over half of the older children (8 of 15, or 53%) recognized a difference in social groups, but few of the younger children (2 of 9, or 22%) did so.

Identification. As in Study 1, children could choose to identify with the consensus member, with the dissenter, or with neither informant. Table 4 shows the percentage of children displaying each of these three patterns as a function of condition. Inspection of Table 4 reveals that the tendency to identify with the dissenter was more frequent in the 3-outgroup + 1-ingroup condition as compared to the other two conditions; indeed, all of the children in the all-outgroup condition identified with neither informant. A Fisher's exact test confirmed the statistically significant relation between condition and the type of answer given ($p < .001$).

To examine whether identification with the dissenter had an impact on children's responses in the pretest and test phases for the 3-outgroup + 1-ingroup condition, we ran two ANCOVAs. The first ANCOVA, with identification with the dissenter as the between-subjects factor, age in months as the covariate, and children's responses in the pretest phase as the dependent variable, revealed no significant effects of either identification with the dissenter, $F(1, 21) = .09$, $p = .767$, or of age, $F(1, 21) = 3.08$, $p = .094$. The second ANCOVA, with identification with the dissenter as the between-subjects factor, age in months as the covariate, and children's responses in the test phase as the dependent variable, also revealed no significant effects of either identification with the dissenter, $F(1, 21) = 2.85$, $p = .106$, or of age, $F(1, 21) = .416$, $p = .526$.

Logistic regression analyses, with identification with the dissenter as the dependent variable and age as the independent variable, revealed an effect of age on how children chose to identify with the dissenter, $z = 2.14$, $p = .032$, $\chi^2(1, n = 67) = 5.09$, $p = .024$. Older children were 1.10 times more likely compared to their younger counterparts to identify with the dissenter. Dividing the children into two age groups based on the median age (66 months), we found that 12 of the 34 (35%) older children were more likely to identify with the dissenter, whereas only 5 of the 33 younger children did so. This difference was particularly apparent in the 3-outgroup + 1-ingroup condition, where approximately three-quarters of the older children identified with the dissenter (11 of 15 children, or 73%)

but slightly less than half of the younger children did so (4 of 9 children, or 44%).

Discussion

The results from Study 2 replicated three key findings of Study 1, showing that sensitivity to a consensus is not limited to children from Western or racially heterogeneous backgrounds. First, as with the European American children, Taiwanese children in all three conditions exhibited a systematic preference in the pretest phase for the information provided by the consensus, regardless of the racial composition of the informants they saw. These results confirm that when a consensus is readily apparent, as in the pretest phase, children attend to the majority opinion over the opinion of a dissenter. Second, when the informants were of the same race as the participants, as in the all-ingroup condition, children's preference for an individual member of the consensus persisted in the test phase, when only one of the three consensus members and the dissenter remained. Third, children's performance in the 3-outgroup + 1-ingroup and the all-outgroup conditions was not significantly different from chance in the test phase. When a consensus was no longer visible in front of them, children showed no systematic tendency to ask for and endorse the information provided by a consensus member who did not belong to their social ingroup. Moreover, this loss of preference for the consensus member was apparent regardless of whether the dissenter was an ingroup or outgroup member.

Despite these important similarities between the two studies, there were some notable differences in the Taiwanese and American children's responses in each phase. No effect of condition was found for the Taiwanese children in the pretest phase, unlike for the American children. Additionally, no age effects were found in the Taiwanese children's responses in either the pretest phase or the test phase. Finally, in the two follow-up questions, Taiwanese children were somewhat slower to recognize social group differences and to identify themselves with an ingroup member. These results are consistent with previous work suggesting that children growing up in homogenous communities are slower to identify social group differences (e.g., Enesco et al., 2008).

General Discussion

Children are selective when learning new information, such as novel words, from unfamiliar infor-

mants, often using a consensus to determine whom to trust (e.g., Corriveau et al., 2009). Additionally, children are aware of different social groups at a young age and demonstrate a robust bias toward their ingroup (e.g., Aboud, 1988; Baron & Banaji, 2006). Based on these two lines of research, we asked whether social group membership impacts children's evaluation of the trustworthiness of a consensus. We also examined whether this impact is similar for children across two cultures.

The results from Studies 1 and 2 suggest that both consensus and social groups matter in children's decisions to trust in informants' testimony. Both European American and Taiwanese children showed a systematic preference in the pretest phase for the information provided by a consensus, regardless of the racial composition of the informants presented. However, in both locations, differences emerged between the conditions in the test phase, when only one member from the consensus and the dissenter remained. In the all-ingroup condition, children continued to choose an individual member of the consensus over the dissenter to receive more information. In the 3-outgroup + 1-ingroup and all-outgroup conditions, children did not show a systematic preference for either informant. Additionally, across the two locations, children in the 3-outgroup + 1-ingroup condition were more likely to recognize a difference in the social group membership of the two remaining informants and to identify with the dissenter (who was an ingroup member) compared to children in the other two conditions. In the following, we consider these findings in more detail.

To assess the overall similarity of children's performance in the pretest and test phases across Studies 1 and 2, we conducted a three-way repeated measures analysis of variance with condition (all-ingroup, 3-outgroup + 1-ingroup, all-outgroup) and location (Study 1: United States; Study 2: Taiwan) as between-subjects factors, phase (pretest, test) as the within-subjects factor, and the proportion of times children chose the information provided by the consensus as the dependent variable. This confirmed the significant main effects of condition, $F(2, 130) = 5.73$, $p = .004$, $\eta^2 = .08$, and phase, $F(1, 130) = 7.89$, $p = .006$, $\eta^2 = .06$, but no effect of location, $F(1, 130) = .217$, $p = .642$, and no significant interactions were found.

The main effect of phase indicated that children's preference for information provided by the consensus was greater in the pretest phase ($M = .64$, $SD = .31$) compared to their preference for the information provided by the remaining consensus

member in the test phase ($M = .56$, $SD = .22$). Post hoc Bonferroni analyses were carried out to interpret the main effect of condition. These analyses indicated that children in the all-ingroup condition were significantly more likely to prefer information provided by the consensus members ($M = .68$, $SD = .18$) compared to children in both the 3-outgroup + 1-ingroup condition ($M = .55$, $SD = .21$; $p = .003$) and the all-outgroup condition ($M = .58$, $SD = .18$; $p = .031$); children's preference in the 3-outgroup + 1-ingroup and all-outgroup conditions did not differ significantly from one another. The absence of any effect for location confirms that the responses of the European American and Taiwanese children were similar to one another.

Why might consensus information have more impact in the pretest phase compared to the test phase? In the pretest phase, when all four informants were present, children could easily see that three of the informants agreed with one another on the referent for a novel label, whereas the fourth informant remained in disagreement. With the consensus so clearly presented, the participants were able to use the information to decide whom they would trust for information. However, in the test phase, only two informants—a consensus member and the dissenter—remained. Thus, children needed to rely on their memory and knowledge of the two women before them. More specifically, they needed to remember that one of the two women had belonged to the consensus before it dispersed. Indeed, age changes in memory might explain why, in Study 1, older children were more sensitive than younger children to the effect of condition in the test phase.

Children in the all-ingroup condition showed a stronger preference for information provided by the consensus than children in the other two conditions, even when only one member of the consensus was present. Thus, when members of the consensus belong to the same race as the children, participants were especially sensitive to agreement among the informants in determining who would be trustworthy sources of information. In both Study 1 and Study 2, children not only preferred information from the consensus, they retained this preference when only one consensus member remained with the dissenter. By contrast, in the all-outgroup and 3-outgroup + 1-ingroup conditions, children were less consistent in their preference for the consensus. They selectively preferred the consensus in the pretest phase, but showed no preference in the test phase. The relative lack of preference in these two conditions can be attributed

to the fact that members of the consensus did not belong to the same racial group as the children.

In the follow-up questions about social group recognition and identification with informants, children in the 3-outgroup + 1-ingroup condition were more likely than children in the other two conditions to recognize a social group difference between the two remaining informants and to identify with the dissenter, who was a member of the participants' ingroup. By implication, children's awareness of, and preference for, ingroup membership is context sensitive. They are more sensitive to racial differences and more prone to identify with a member of their own group when confronted by a mixed rather than a homogenous group. The findings also showed that Taiwanese children were somewhat slower than the European American children to recognize separate social groups and to identify with an ingroup dissenter, consistent with earlier claims concerning children growing up in relatively homogenous societies (Enesco et al., 2008). Nevertheless, the differences between the three conditions were equally clear in Taiwan and in the United States.

We suggest two related reasons for the similarity between the responses of the American and the Taiwanese children. First, when selecting novel labels, both American and Taiwanese children attend to social group information in addition to consensus information. This awareness of social groups is consistent with previous empirical work with both American (e.g., Aboud, 1988) and Taiwanese (e.g., Kowalski & Lo, 2001) children. Indeed, East Asian children can show similar levels of preference for their ingroup compared to their European American counterparts (Dunham, Baron, & Banaji, 2006). But second—and more broadly—there are important theoretical reasons for supposing that human beings have not only evolved the ability to learn from one another but are also more inclined to learn from members of their ingroup. Such selective learning would facilitate children's acquisition of beliefs and practices that are distinctive of their cultural group (Boyd & Richerson, 2009; Harris, 2012). Therefore, regardless of the culture in which they are born, children should be inclined to trust and learn from members of their ingroup—swayed in this case by consensus information. The similarities between the two studies suggest that the impact of social group membership on children's evaluation of consensus information may be universal (Berry, 1969, 1979).

There are some potential limitations to the two studies. We did not include a condition in which

the consensus consisted of three ingroup members and a dissenting outgroup informant. However, given children's ready inclination to endorse the information provided by the consensus when it consisted of ingroup members, even when the dissenter was also a member of the ingroup, it is plausible that children would continue to go with an ingroup consensus when the dissenter belongs to an outgroup.

Additionally, our results show that during the test phase, children preferred to learn names for unfamiliar objects from a consensus member belonging to the same group as themselves. One possible interpretation of this finding is that children regard members of their racial group as speakers of the same language as themselves, and for that reason treat them as trustworthy informants concerning new names. However, recent findings suggest that selective trust in ingroup members is not confined to the learning of new names. For instance, Kinzler et al. (2011) report that children prefer to learn about the functions of unfamiliar objects from native-accented rather than foreign-accented speakers. In future research, it will be important to ask whether the preference for ingroup informants extends beyond the learning of linguistic information.

In conclusion, consensus matters, but social group membership matters as well. Children are selective in whom they decide to trust when learning new information. Confronted by three people making one claim and a single dissenter making a different claim, children were likely to agree with the consensus. Moreover, they did so irrespective of the composition of that consensus, and they did so in Boston and Taipei. Nevertheless, young children are sensitive to the different social groups to which people belong. Although they prefer the information provided by a consensus, they also attend to whether the individual members of that consensus belong to their own social group—in this case, by noting racial identity cues. Preference for a consensus member was only observed in the test phase if the consensus member belonged to the same social group as the child. The follow-up social group recognition and identification questions confirmed that children are sensitive to social group cues. A considerable proportion of children in the 3-outgroup + 1-ingroup condition from both studies were able to notice and put into words the racial difference between the two informants in the test phase. They also identified with the ingroup member, even though she had previously dissented from the claims made by the three other informants.

These results hold for children in the United States and in Taiwan, suggesting that the saliency of social group membership cues, alongside consensus cues, is present across different cultures.

Children are inundated with information every day, and are faced with a wide range of cues to help them sift through what they have learned from others. Previous research has already indicated that children are remarkably selective when learning new information (e.g., Corriveau et al., 2009), using criteria such as familiarity and past accuracy to determine the trustworthiness of their informants. Our findings demonstrate that across different cultures, children also weigh both consensus and social group membership cues when deciding whom to trust, suggesting children are attentive to the social groups (e.g., race) to which they belong when learning new information, even when the task is not explicitly race based. In other words, the social identity of the informant, along with other kinds of cues about the informant's trustworthiness, is important for children. Children are not only good scientists; they are good sociologists who use their sociological knowledge in deciding whose claims to seek and endorse.

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