


# Not Like Me = Bad: Infants Prefer Those Who Harm Dissimilar Others

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## Abstract

Adults tend to like individuals who are similar to themselves, and a growing body of recent research suggests that even infants and young children prefer individuals who share their attributes or personal tastes over those who do not. In this study, we examined the nature and development of attitudes toward similar and dissimilar others in human infancy. Across two experiments with combined samples of more than 200 infant participants, we found that 9- and 14-month-old infants prefer individuals who treat similar others well and treat dissimilar others poorly. A developmental trend was observed, such that 14-month-olds' responses were more robust than were 9-month-olds'. These findings suggest that the identification of common and contrasting personal attributes influences social attitudes and judgments in powerful ways, even very early in life.

## Keywords

infant development, preferences, prejudice, social cognition

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One of the most firmly established phenomena in social psychology is the relationship between similarity and liking (e.g., Byrne, 1971; Newcomb, 1961; Sunnafrank, 1983). Perceived similarity in appearance, attitudes, personality traits, and group memberships leads to friendship formation, empathic responding, and prosocial acts (e.g., Berscheid, Dion, Walster, & Walster, 1971; Buss, 1984; Krebs, 1975; Suedfeld, Bochner, & Matas, 1971), whereas perceived dissimilarity predicts avoidance, disliking, and the dissolution of friendships (e.g., Rosenbaum, 1986; Singh & Ho, 2000; Tan & Singh, 1995). The influence of similarity on liking exists across cultures (Byrne, 1971) and is evident throughout childhood (Aboud, 1988; Bigler, Jones, & Lobliner, 1997; Fawcett & Markson, 2010; La Freniere, Strayer, & Gauthier, 1984), which suggests that it is a fundamental aspect of human interaction. Indeed, recent findings have indicated that liking is influenced by similarity even within the first year of life, prior to the onset of language and the development of peer friendships: Infants prefer individuals who share their own preferences for food, clothing, or toys over those who have expressed contrasting preferences (Mahajan & Wynn, 2012).

Similarity not only influences which individuals people prefer to interact with, but also affects a wide swathe of social-cognitive processes. Individuals hold positive expectations for the behavior of those who are similar to themselves and deem

them trustworthy, fair, and intelligent; in contrast, dissimilar others are perceived as unkind, untrustworthy, and unintelligent (e.g., Brewer, 1979; DeBruine, 2002; Doise et al., 1972). These perceptions and assumptions may, in turn, influence how people evaluate third parties who interact with similar and dissimilar individuals: Because people view individuals who are dissimilar to themselves negatively, they may have a positive view of people who treat dissimilar others poorly and a negative view of people who treat dissimilar others well.

These evaluations could result from several tendencies (not necessarily mutually exclusive): Perhaps people unconsciously feel that dissimilar individuals deserve to be punished—people may feel pleasure at the suffering of any disliked individual (*schadenfreude*). Alternatively, they may not particularly care what happens to disliked others but may analyze social alliances and perceive an enemy of their enemy as a friend (e.g., Heider, 1958). Whatever the root cause, people's preferences for individuals who are similar to themselves may support biases that contribute to intergroup hostility and conflict: History is rife with examples of humans engaging in, actively supporting, or

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simply ignoring violence directed toward individuals who differ from themselves, and these negative attitudes and behaviors are extremely difficult to extinguish (Prentice & Miller, 1999).

In the research reported here, we examined the significance and social consequences of an early preference for similarity by asking how infants react to characters who help or harm similar or dissimilar others. Like adults, infants generally prefer individuals who help third parties (e.g., Hamlin, Wynn, & Bloom, 2007); however, also like adults, infants make evaluations that are influenced by more than the simple heuristic of “helpful = good.” Specifically, infants prefer those who mistreat individuals who have previously harmed others—even over those who treat previously harmful individuals well—which suggests that infants’ social evaluations are based on (a) individuals’ helpful or harmful actions and (b) the infants’ personal feelings toward the target of those actions (Hamlin, Wynn, Bloom, & Mahajan, 2011). Our studies examined whether infants consider a target’s similarity to themselves when evaluating unknown third parties’ prosocial and antisocial acts toward that target.

## Experiment 1: Preferences for Helpful Versus Harmful Individuals in Interactions With Similar and Dissimilar Others

### Participants and procedure

Thirty-six 9-month-olds (mean age = 8 months 29 days) and sixteen 14-month-olds (mean age = 14 months 16 days) participated. An additional two 9-month-olds and four 14-month-olds participated but were excluded from the final sample because of procedural errors (one 9-month-old and two 14-month-olds), fussiness (one 9-month-old), or failure to produce a choice response (two 14-month-olds). Infants sat on their parents’ laps throughout four study phases (see Supplemental Methods and Videos S1–S4 in the Supplemental Material available online for additional details and examples).

During Phase 1, we determined infants’ preference for graham crackers versus green beans by having them choose between the foods. During Phase 2, Experimenter 1 (who had solicited infants’ food preference in Phase 1) put on a brief puppet show in which two rabbit puppets indicated their own food preferences. To do so, puppets tasted each food in turn and exclaimed “Mmm, yum! I like (food name)!” toward one type of food and “Ew, yuck! I don’t like (food name)!” toward the other (as in Mahajan & Wynn, 2012; see Video S1 in the Supplemental Material). The *similar puppet* always preferred the same food as the infant, and the *dissimilar puppet* always preferred the other type of food.

During Phase 3, infants saw additional puppet shows in which either the similar puppet (similar-target condition) or the dissimilar puppet (dissimilar-target condition) starred. Shows in Phase 3 were puppeteered by Experimenter 2, who was blind to condition. During each puppet-show event, the target repeatedly bounced and caught a ball, then accidentally

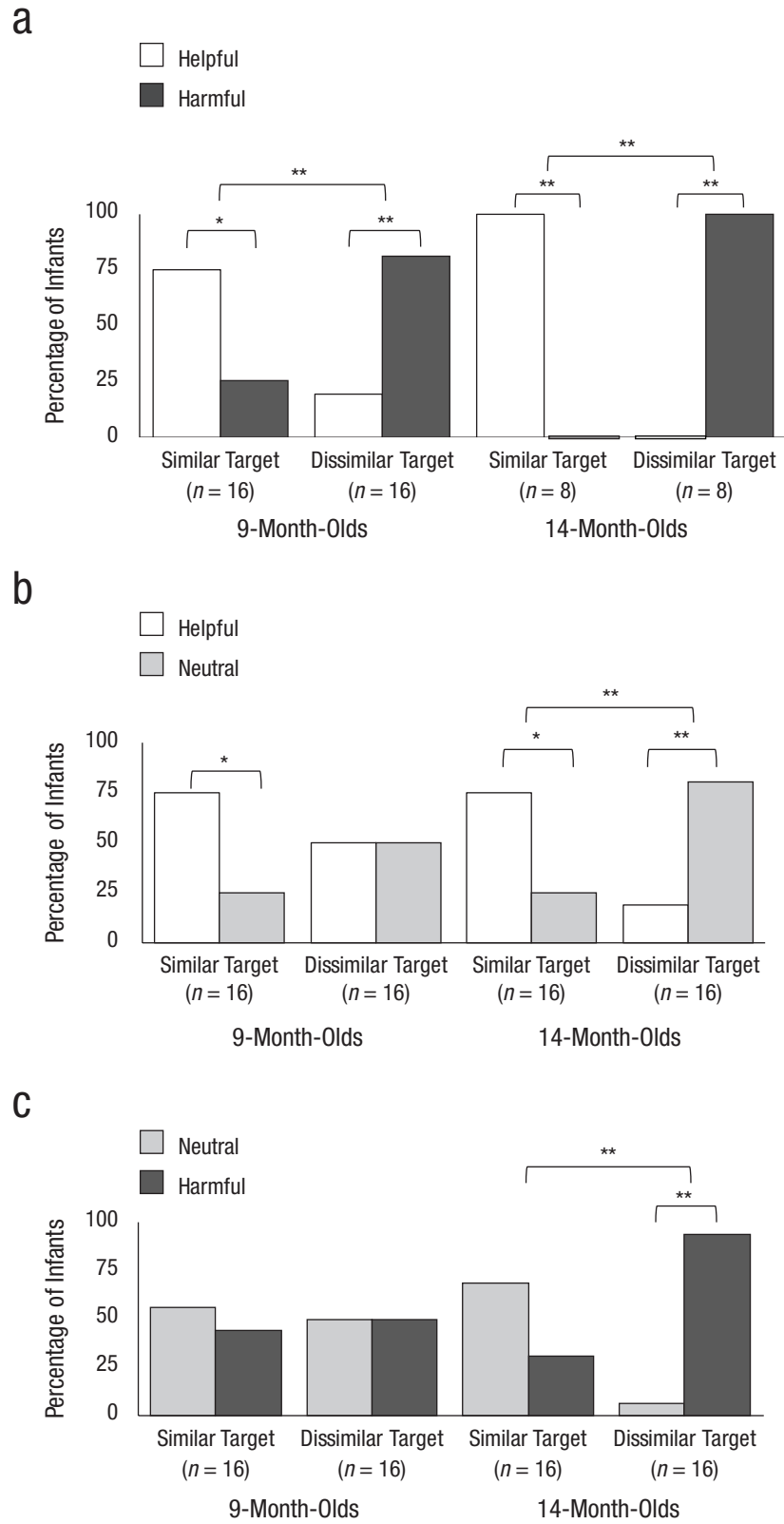
dropped it. The ball bounced toward one of two dog puppets resting at the rear corners of the stage. On alternating events, the *helper* dog puppet returned the ball to the target, and the *harmer* dog puppet took the ball and ran away with it (see Hamlin & Wynn, 2011, for a similar paradigm involving giving and taking events; see Videos S2 and S3 in the Supplemental Material). Infants were permitted to observe the outcome of each event until they had looked away for 2 s or until 30 s elapsed. Helpful and harmful events alternated until infants reached a preset looking-time criterion indicating that they had sufficiently processed the events.

Finally, in Phase 4, Experimenter 1 presented infants with the helper and harmer puppets; Experimenter 1 was blind to helper/harmer identity and target condition. Each infant’s preference for the helper versus the harmer was determined on the basis of which puppet he or she first contacted with a visually guided reach (see Video S4 in the Supplemental Material).

## Results and discussion

All reported  $p$  values are two-tailed. Sixty-nine percent of 14-month-olds and 53% of 9-month-olds chose graham crackers; 31% of 14-month-olds and 47% of 9-month-olds chose green beans. Infants’ food choices did not influence their preference for helpers or harmers of similar or dissimilar targets (Fisher’s exact tests,  $ps > .22$ ), so subsequent analyses were collapsed across this variable. Across both age groups, infants’ preferences for the helper versus the harmer puppet differed depending on the target’s status as similar or dissimilar to infants themselves (Fisher’s exact tests—14-month-olds:  $p = .0002$ ; 9-month-olds:  $p = .003$ ; see Fig. 1 and the Supplemental Material for additional data and analyses). Infants who saw interactions involving the similar rabbit puppet preferred the helper dog puppet over the harmer dog puppet (100% of 14-month-olds,  $p = .008$ ; 75% of 9-month-olds, binomial  $p = .08$ ), whereas infants who saw interactions involving the dissimilar rabbit puppet preferred the harmer dog puppet over the helper dog puppet (100% of 14-month-olds,  $p = .008$ ; 81% of 9-month-olds,  $p = .02$ ). There were no effects of age within either the similar-target condition or the dissimilar-target condition; however, across the two conditions, 14-month-olds were marginally more likely to show the predicted effects (Fisher’s exact test,  $p = .08$ ).

These results suggested that the link between similarity and liking is robust even in the first year of life: Both 9- and 14-month-olds assessed the same actions differently depending on whether they were directed toward an individual with tastes similar to those of the infants or directed toward an individual with different tastes. Yet several distinct patterns of evaluation could have underlay infants’ choices in Experiment 1: Infants may dislike people who help dissimilar others, like people who harm dissimilar others, or both; they may like people who help similar others, dislike people who harm similar others, or both. It is also possible that distinct patterns of preferences govern infants’ choices at 9 and 14 months of age



**Fig. 1.** Percentage of infants choosing (a) a helpful puppet over a harmful puppet in Experiment 1, (b) a helpful puppet over a neutral puppet in Experiment 2, and (c) a neutral puppet over a harmful puppet in Experiment 2 as a function of whether the puppets interacted with a target who was similar or dissimilar to the infant. In each graph, results are shown separately for 9- and 14-month-old infants. Asterisks indicate significant differences (\* $p < .10$ , \*\* $p < .05$ ).

or that younger infants' evaluations are simply less robust across the board, as suggested by the marginal age differences observed in Experiment 1. Accordingly, in Experiment 2, we assessed infants' absolute, rather than relative, attitudes toward the helpful and harmful characters in each condition by contrasting these characters with a neutral individual.

## Experiment 2: Preferences for Helpful Versus Neutral Individuals and for Harmful Versus Neutral Individuals in Interactions With Similar and Dissimilar Others

### Participants and procedure

Sixty-four 9-month-olds (mean age = 9 months 1 day) and sixty-four 14-month-olds (mean age = 14 months 15 days) were included in the final sample. Nine additional 9-month-olds were excluded because of procedural errors (5), failure to indicate food preference (1), fussiness (1), or failure to choose a puppet (2). Twenty-eight additional 14-month-olds were excluded because of procedural errors (7), fussiness (10), failure to choose a puppet (10), or parental interference (1).<sup>1</sup>

As in Experiment 1, 9- and 14-month-olds infants indicated their food preference in Phase 1, and observed rabbit puppets indicating food preferences in Phase 2. Then, prior to the start of Phase 3, infants observed a *neutral* event in which a lone puppet jumped up and down onstage but performed no social acts. During Phase 3, two new puppets alternately helped and harmed either the similar or the dissimilar rabbit puppet, as in Experiment 1. Finally, in Phase 4, infants chose between either the neutral puppet and the helper puppet or the neutral puppet and the harmer puppet; these choices were used to assess infant's attitudes toward the helper and harmer puppets relative to the neutral puppet (an index of baseline preferences).

### Results and discussion

Results for Experiment 2 are depicted in Figure 2. Sixty-three percent of 14-month-olds and 75% of 9-month-olds preferred graham crackers over green beans. As in Experiment 1, infants' food choices did not influence their preferences for helpers or harmers of similar or dissimilar targets (Fisher's exact tests,  $ps > .52$ ), so subsequent analyses were collapsed across this variable. Results with 14-month-olds replicated and extended those of Experiment 1. In the similar-target condition, 14-month-olds preferred characters who were more helpful to similar targets and avoided those who were more harmful (72%, binomial  $p = .02$ ). Specifically, infants preferred the helper character to the neutral character (75%,  $p = .08$ ) and the neutral character to the harmer character (69%,  $p = .21$ ).

In the dissimilar-target condition, in contrast, 14-month-olds showed the opposite preferences: They preferred characters who were more harmful to the dissimilar target, and avoided those who were more helpful (88%, binomial  $p = .00002$ ). Specifically, 15 of 16 fourteen-month-olds in the dissimilar-target

condition preferred the harmer character over the neutral character ( $p = .0005$ ), and 13 of 16 preferred the neutral character over the helper character ( $p = .02$ ). Although 14-month-olds' preference patterns appeared stronger in the dissimilar-target conditions than in the similar-target conditions, these differences were not significant either within or across the helper/harmer condition (Fisher's exact tests,  $ps > .17$ ).

In contrast to 14-month-olds, 9-month-olds did not significantly prefer characters who were more helpful to similar others (66%, binomial  $p = .11$ ) or characters who were more harmful to dissimilar others (50%,  $p = 1$ ). Infants who chose between a helper and a neutral character in the similar-target condition marginally preferred the helpful one (75%,  $p = .08$ ); it was among these infants alone that the preference approached significance. The age difference in infants' patterns of responses was significant (Fisher's exact test,  $p = .01$ ), which suggests that, whereas 14-month-olds engaged in all of the nuanced evaluation patterns outlined above, 9-month-olds did not.

### General Summary and Discussion

In sum, the findings reported here suggest that human infants like those who are similar to them and dislike those who are different, a pattern that begins to emerge in the first year of life and is robustly present by early in the second. Both 9- and 14-month-olds prefer individuals who harm dissimilar others over those who help them, and by 14 months of age, these evaluations are sufficiently strong to allow infants to distinguish helpful and harmful individuals from neutral ones. The similarities and differences in the observed preference patterns of these two age groups suggest that infants' evaluations may be relatively stable in kind across early development but become increasingly facile and flexible, perhaps because of increases either in domain-general abilities such as executive processing or domain-specific abilities such as theory of mind. In particular, we found no evidence that infants change from always liking helpful individuals, regardless of the targets of helpful actions, to exhibiting more nuanced patterns of preferences toward helpers of similar and dissimilar others. However, it is certainly possible that such a change occurs before 9 months of age; this should be examined in future studies.

Critically, at no age did infants prefer helpers (or harmers) across the board, regardless of the targets of the characters' actions: Across both experiments, helpers and harmers were chosen at equal rates. This pattern suggests that rather than evaluating certain behaviors as inherently bad and others as inherently good, infants make early social evaluations that are fundamentally influenced by their opinion of targets. Additionally, infants' evaluations did not differ according to which food the target liked: Participants who liked graham crackers were as likely to prefer a puppet that helped a target who liked graham crackers as participants who liked green beans were to prefer a puppet that helped a target who liked green beans. Thus, infants' evaluations were specifically related to targets' similarity to themselves rather than, for example, generally

wishing graham-cracker lovers well and green-bean lovers harm.

These results are consistent with a growing body of literature showing that infants prefer individuals from familiar social categories, preferentially attending to adults who speak familiar languages or who are of the same sex or race as the individuals in their environment (e.g., Bar-Haim, Ziv, Lamy, & Hodes, 2006; Kinzler, Dupoux, & Spelke, 2007; Quinn, Yahr, Kuhn, Slater, & Pascalis, 2002). In some cases, infants' tendency to attend to individuals from familiar categories is consistent with their more active social interactions: Infants preferentially accept toys from speakers of a familiar language (but not from people of a familiar race; e.g., Kinzler & Spelke, 2011). The current findings demonstrate an additional layer of complexity in early social evaluation: Infants' first-party evaluations of others as similar or dissimilar are sufficiently strong to influence their third-party evaluations of individuals who help or harm these similar or dissimilar others.

Of course, adults do not explicitly view those with different food preferences as deserving of mistreatment. However, both adults and children negatively judge even trivially dissimilar individuals and anticipate that these individuals will behave poorly in the future (which may render them deserving of punishment; e.g., Bigler et al., 1997; Tajfel, Billig, Bundy, & Flament, 1971). In some cases, children will themselves carry out harmful acts against dissimilar others (Sherif, Harvey, White, Hood, & Sherif, 1954/1961), which suggests that they may view such acts as justified. Similarly, it is possible that infants' responses reflected a perception of dissimilar others as being deserving of punishment or that infants simply feel pleasure when individuals who are dissimilar to themselves are treated badly, just as adults feel *schadenfreude* when disliked individuals experience pain or misfortune (see Cikara, Bruneau, & Saxe, 2011; Smith, Powell, Combs, & Schurtz, 2009, for relevant reviews).

Alternatively, or in addition, infants' attitudes may reflect the sentiment that "the enemy of my enemy is my friend": Infants may read an individual's good treatment of another person as indicating liking and bad treatment of another person as indicating dislike—a dislike that infants themselves share when it is directed toward a dissimilar other. This may in turn generate a sense of affiliation based on shared attitudes (e.g., Aronson & Cope, 1968; Heider, 1958; see also Leach & Spears, 2009). Indeed, our results suggest that infants are highly sensitive to whether others share their tastes in food; it would be somewhat surprising to discover that this sensitivity did not extend to whether others share their tastes in friends.

It is important to note that our claim is not that infants are necessarily analyzing social categories. In particular, our findings did not demonstrate (a) that infants generated, either prior to or during the study, categories of "green-bean lovers" and "graham-cracker lovers" or even of "individuals like me" and "individuals not like me"; (b) that infants assigned the puppets to those categories; or (c) that infants subsequently evaluated puppets who helped and harmed targets in terms of these group

identities. Infants needed only to evaluate single individuals (not groups) to respond as they did. However, given the links between adults' and children's similarity preferences and group psychology, it seems likely that infants' tendency to notice and prefer similarity is related to emergent intergroup biases. If so, the current results would suggest that such biases, rather than being solely the result of accumulated experience in a sharply divided social world, are based in part on an inborn or early-developing propensity to like those whom we recognize as similar to ourselves and to dislike those who differ from us. These tendencies are already operative in the first year of human life.

### Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

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### Supplemental Material

Additional supporting information may be found at <http://pss.sagepub.com/content/by/supplemental-data>

### Note

1. The number of 14-month-olds who refused to choose a puppet or were fussy was larger than the number of infants in either age group who did so in Experiment 1 and the number of 9-month-olds who did so in Experiment 2. We speculate that 14-month-olds in Experiment 2 may have found comparisons involving neutral characters difficult and that, as a result, some of these infants refused to participate by making a choice. In addition, Experiment 2 was a relatively long study, which may have led to increased fussiness in this age group.

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