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# Not like me = bad: Infants prefer those who harm dissimilar others

**J. Kiley Hamlin**[1], **Neha Mahajan**[2], **Zoe Liberman**[3], and **Karen Wynn**[4]

[1]University of British Columbia

[2]Temple University

[3]University of Chicago

[4]Yale University

## Abstract

Adults tend to like individuals who are similar to them, 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. Here, we examine the nature and development of attitudes for similar and dissimilar others in human infancy. Across two experiments and over 200 infant participants, we find that 9- and 14-month-old infants prefer individuals who treat similar others well and dissimilar others poorly. A developmental trend was observed, wherein 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 our social attitudes and judgments in powerful ways, even very early in human life.

### Keywords

Infant Development; Preferences; Prejudice; Social Cognition

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 dissimilarity predicts avoidance, disliking, and friendship dissolution (e.g., Rosenbaum, 1986; Singh & Ho, 2000; Tan & Singh, 1995).The influence of similarity on liking exists cross-culturally (Byrne, 1971), and is evident throughout childhood (Aboud, 1988; Bigler, Jones, & Lobliner, 1997; Fawcett & Markman, 2010; LaFreniere, Strayer, & Gauthier, 1984), suggesting it is a fundamental aspect of human interaction. Indeed, recent findings indicate an influence of similarity on liking even within the first year of life, prior to the onset of language and before the development of peer friendships:infants prefer

Author Contact: Kiley Hamlin 2019-2136 West Mall Vancouver, BC V6T 1Z4 Canada 604-822-2297 kiley.hamlin@psych.ubc.ca.

individuals who share their own food, clothing or toy preference over those who have expressed a contrasting preference (Mahajan & Wynn, in press).

Similarity not only influences whom we prefer to interact with, but affects a wide swathe of social-cognitive processes. We hold positive expectations for similar others' behavior, deem them more trustworthy, more fair, and more intelligent; in contrast, dissimilar others are perceived as unkind, untrustworthy, and unintelligent (e.g., DeBruine, 2002; Doise, Cspely, Dann, Gouge, Larsen, et al., 1972; Brewer, 1979). These perceptions and assumptions may, in turn, influence how we evaluate third parties who interact with similar and dissimilar individuals: Because we view dissimilar others negatively, we may positively view those who treat them poorly, and negatively view those who treat them well. These evaluations could result from several tendencies (not necessarily mutually exclusive): perhaps we unconsciously feel dissimilar individuals deserve to be punished; we may feel pleasure at the suffering of any disliked individual (schadenfreude). Alternatively, we may not particularly care what *happens* to disliked others, but analyze social alliances and perceivean enemy of our enemy as our friend (e.g., Heider, 1958). Whatever the root cause, our preference for similar others may come to support biases that contribute to intergroup hostility and conflict: History is rife with examples of humans engaging in, actively supporting, or simply ignoring violence directed toward individuals who differ from themselves; these negative attitudes and behaviors are extremely difficult to extinguish (Miller & Prentice, 1999).

Here, we examine the significance and social consequences of an early preference for similarity, by asking how infants react to new characters who help and harm similar and dissimilar others. Like adults, infants generally prefer individuals who help third parties (e.g., Hamlin, Wynn, & Bloom, 2007); however also like adults, infants' evaluations are influenced by more than simple heuristics of "helpful=good." Specifically, infants prefer those who *mistreat* individuals who have previously harmed others – even over those who treat previously-harmful individuals well – suggesting that infants' social evaluations are based on (1) an individual's helpful or harmful actions, and (2) the infants' personal feelings toward the target of those actions (Hamlin, Wynn, Bloom, & Mahajan, 2011). The current studies examine whether infants consider a target's *similarity to themselves* when evaluating unknown third parties' prosocial and antisocial acts.

## Experiment 1: Helpers v. Harmers of 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-oldsparticipated but were excluded from the final sample due to procedure error (1/2), fussiness (1/0), and failure to produce a choice response (0/2). Infants sat on their parents' laps throughoutfour study phases; all phases were presented live (see Supplementary Methods and Videos S1-S4 for additional details and examples).

During Phase 1, infants indicated their preference for graham crackers versus green beans, determined bythe first food they picked from a bowl. During Phase 2,Experimenter 1 (who had solicited infants' food preference in Phase 1) puppeteered a brief show in which two

rabbit puppets indicated their ownfood preferences.To do so, puppetstasted each food in turn and exclaimed “Mmm, yum! I like (food name)!” toward one and “Ew, yuck! I don't like (food name)!” toward the other (Video S1; as in Mahajan & Wynn, in press). The “Similar” Puppet always preferred the same food as the infant, and the “Dissimilar” Puppet always preferred thethe opposite food. During Phase 3, infants saw additional puppet shows in which *either* the Similar *or* the Dissimilar Puppet starred (hereafter “Similar Target”/ “Dissimilar Target” conditions); shows in Phase 3 were puppeteered by Experimenter 2, who was blind to the Target's similarity/dissimilarity status. During each event, the Target repeatedly bounced and caught a ball and accidentally dropped it; the ballbounced toward one of two dog puppets resting at the rear corners of the stage. On alternating events, the “Helper” dogpuppet returned the ball to the Target, and the “Harmer” dog puppet took the ball and ran away with it (giving/taking events as in Hamlin & Wynn, 2011; Videos S2/S3). Infants were permitted to observe the outcome of each event until they had looked away for 2 seconds or until 30 seconds elapsed. Helpful and Harmful events alternated untilinfants reached a pre-set looking-time criterion indicating they had sufficiently processed theevents. Finally, inPhase 4 Experimenter 1 presented infants with the Helper and Harmer; E1 was blindto Helper/Harmer identity and Target condition. Each infant's preference for the Helper versus the Harmer was determined online as the first contacted with a visually guided reach (Video S4).

## Results and Discussion

All reported *p*-values are two-tailed. Sixty-nine percent of 14-month-olds and 53% of 9-month-olds chose crackers; the restchose beans. Infants’ food choice did not influence their preference for helpers/harmers of similar/dissimilar targets (all Fisher's Exact *p's*>.22), so subsequent analyses collapse across this variable. At both 5 ages tested, infants’ choices of the Helpful versus the Harmful Puppet differed depending on whether the recipient was the Similar or the Dissimilar Target (Fisher's Exact Tests; 14-month-olds: $p$=.0002; 9-month-olds: $p$=0.003; see Figure 1 and Supplementary Materials for additional data and analyses). Infants who saw actions directed toward the Similar Puppet preferred the Helpful Puppet (8 of 8 14-month-olds, $p$=.008; 12 of 16 9-month-olds, binomial $p$=.08), whereas infants who saw actions directed toward the Dissimilar Puppet preferred the Harmful Puppet (8 of 8 14-month-olds, $p$=.008; 13 of 16 9-month-olds, $p$=.02). There were no effects of age within either the Similar or the Dissimilar Target conditions; however,collapsed across conditions, 14-month-olds were marginally more likely to show the predicted effects (Fisher's Exact Test, $p$=.08).

Results from Experiment 1 suggest 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 when they were directed toward an individual with similar tastes to themselves than when they were directed toward an individual with different tastes. Yet, several distinct evaluation patterns could underlie infants’ choices in Experiment 1: infants may dislike those who help dissimilar others, like those who harm them, or both; they may like those who help similar others, dislike those who harm them, or both. It is also possible that distinct preference patterns govern infants’ choices at each age, 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 towards the Helpful and Harmful characters in each condition, by contrasting them with a Neutral individual.

## Experiment 2: Helpers v. Neutral & Harmers v. Neutral of 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 due to procedure error (5), failing to choose either snack (1), fussiness (1), and failing to choose apuppet (2). Twenty-eight additional 14-month-olds were excludeddue to procedure error (7), fussiness (10), failing to choose a puppet (10), and parental interference (1)[1].

New groups of 14- and 9-month-olds were presented with the first 2 Phases as in Experiment 1: (1) infants indicated their food preference, and (2) rabbits indicated their food preferences. Then, prior to the start of Phase 3, infants observed a single "Neutral" event, in which a lone puppet jumped up and down onstage but performed no social acts. During Phase 3 two new puppets alternately helpedand harmed either the Similar or the Dissimilar puppet, as in Experiment 1. Finally, in the 4$^{th}$ Choice Phase, infants chose *either* between the Neutral and the Helper, *or* between the Neutral and the Harmer, to assess their attitudes towards these puppets relative to the Neutral-puppet baseline.

### Results and Discussion

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 choice did not influence their preference for helpers/harmers of similar/dissimilar targets (all Fisher's Exact *p's* >.52), so subsequent analyses collapse across this variable. Replicating and extending the effects of Experiment 1, 14-month-olds in Experiment 2 preferred characters who were *more helpful* to Similar targets and avoided those who were less helpful (23 of 32; binomial $p$=.02). Specifically, more infants preferred the Helpful to the Neutral character (12 of 16, $p$=.08), and the Neutral to the Harmful character (11 of 16, $p$=.21). In the Dissimilar Target conditions, 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 (28 of 32, binomial $p$=.00002). Specifically, 15 of 16 fourteen-month-olds in the Dissimilar Target condition preferred the Harmful over the Neutral character ($p$=.0005), and 13 of 16 preferred the Neutral over the Helpful one ($p$=.02). Although 14-month-olds' preference patterns appear stronger in the Dissimilar Target than the Similar Target conditions, these differences were not significant either within or across condition (Fisher's Exact Tests, *p's*>.17).

[1]This comprised a larger number of refusals and fussy infants than we observed in Experiment 1 or in the younger age group in Experiment 2. We speculate that 14-month-olds may have found the neutral comparisons difficult, and as a result some refused to participate in the choice. In addition, this was a relatively long study, which may have lead to increased fussiness in this older age group.

In contrast to 14-month-olds, 9-month-olds in Experiment 2 did not significantly prefer characters who weremore helpful to Similar others (21 of 32, binomial $p$=.11),nor those who were more harmful to Dissimilar others (16 of 32, $p$=1). Infants who chose between a Helpful and a Neutral character in the Similar Target condition marginally preferred the Helpful one (12 of 16, $p$=.08); this was the only condition that approached significance. This age difference in infants' pattern of responses is significant (Fisher's Exact Test, $p$=.01), suggesting that whereas 14-month-olds engage in all of the nuanced evaluation patterns outlined above, 9-month-olds do not.

## General Summary and Discussion

In sum, the findings reported here suggest that, beginning in the first year and robustly present by early in the second, human infants like those who are similar to them, and dislike those who are different. Both 9- and 14-month-olds prefer those 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 ages suggest that infants' evaluations may be in *kind* across early development, but become increasingly*facile* and *flexible*, perhaps due to 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 their target, to eventually becoming more nuanced. However, it is certainly possible that such a change occurs before 9 months (see, for instance, Hamlin et al., 2011); 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 their acts: across all experiments Helpers and Harmers were chosen at equal rates. This suggests that, rather than evaluating certain behaviors as inherently negative and others as inherently good, infants' early social evaluations are fundamentally influenced by their opinion of who is targeted. Additionally, infants' evaluations did not differ based on *which* food puppets liked; our subjects were equally likely to prefer a puppet that helped someone who (like them) liked crackers asthey were to prefer a puppet that helped someone who (like them) liked beans. Thus, infants' evaluations were specifically related to targets' *similarity to themselves*, rather than, for example, generally wishing cracker-lovers well and bean-lovers harm.

These results are consistent with a growing body of literature that infants prefer individuals from familiar social categories, preferentially attending to adults who speak familiar languages or are of a familiar 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 toindividuals from familiar categories is consistent with their more active social interactions: infants preferentially accept toys from familiar language speakers (but not from those 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 similar and

dissimilar others)are sufficiently strong to influence their *third party* evaluations (of those who help and harm these similar and dissimilar individuals).

Of course, adults do not explicitly view those with different food preferencesas 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 (perhaps rendering 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), suggesting they may view such acts as justified.Similarly, it is possible that infants' responses reflect that they perceive dissimilar others as deserving punishment, or that they simply feel pleasure when those dissimilar to themselvesare treated badly, as adults feel "schadenfreude" when disliked individuals experience pain or misfortune (see Smith, Powell, Combs, & Schurtz, 2009; Cikara, Bruneau, & Saxe, 2011; for relevant reviews). Alternatively or in addition, infants' attitudes may reflect a sentiment that "the enemy of my enemy is my friend:" They may read one individual's good treatment of another as indicating liking, and bad treatment of another as indicating dislike – a dislike that they themselves sharewhen it is directed towards 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, the current 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.

Importantly, our claim is not that infants are necessarily engaging in social category- based group psychology. In particular, we have not demonstrated that infants (i) generate(either prior to or during the study) categories of "bean-lovers" and "cracker-lovers," or even of "individuals like me" and "individuals not like me," (ii) assign the puppets to those categories, and subsequently (iii) evaluate those who help and harm these puppets in terms of the irrelevant group identities. Infants in the current studies need only evaluate single individuals (not groups) to respond as they did. However, given the links between adults' and children's similarity preferences and their group psychology, it seems likely that infants' tendency to notice and prefer similarity is related to emergentinter group 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 basedin part onan inborn or early-developing propensity to like those whom we recognize as similar to ourselves, and to dislike those who differ from us. The set endencies are already operativein the first year of human life.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

## References

Aboud, FE. Children and prejudice. Blackwell; New York: 1988.

Aronson E, Cope V. My enemy's enemy is my friend. Journal of Personality and Social Psychology. 1968; 8(1):8–12. [PubMed: 5638028]

Berscheid, E.; Dion, K.; Walster, GW.; Walster, E. Journal of Experimental Social Psychology. Vol. 7. Elsevier; 1971. Physical attractiveness and dating choice: A test of the matching hypothesis.; p. 173-189.

Bigler RS, Jones LC, Lobliner DB. Social categorization and the formation of intergroup attitudes in children. Child Development. 1997; 68:530–543. [PubMed: 9249964]

Brewer MB. In-group bias in the minimal intergroup situation: A cognitive-motivational analysis. Psychological Bulletin. 1979; 86:307–324.

Buss, DM. Journal of Personality and Social Psychology. Vol. 47. American Psychological Association; 1984. Toward a psychology of person-environment (PE) correlation: The role of spouse selection.; p. 361

Byrne, DE. The Attraction Paradigm. Academic Press; New York: 1971.

Cikara M, Bruneau EG, Saxe R. Us and them: Intergroup failures of empathy. Curr Dir Psychol Sci. 2011; 20(3):149–153.

DeBruine LM. Facial resemblance enhances trust. Proceedings of the Royal Society of London B. 2002; 269:1307–1312.

Doise W, Cspely G, Dann HD, Gouge C, Larsen K, et al. An experimental investigation into the formation of intergroup representation. European Journal of Social Psychology. 1972; 2:202–204.

Fawcett CA, Markson L. Similarity predicts liking in 3-year-old children. Journal of Experimental Child Psychology. 2010; 105:345–358. [PubMed: 20092828]

Hamlin JK, Wynn K, Bloom P. Social evaluation by preverbal infants. Nature. 2007; 450(7169):557–559. doi:10.1038/nature06288. [PubMed: 18033298]

Hamlin, JK.; Wynn, K.; Bloom, P.; Mahajan, N. Proceedings of the National Academy of Sciences. Vol. 108. National Acad Sciences; 2011. How infants and toddlers react to antisocial others.; p. 19931-19936.

Heider, F. The Psychology of Interpersonal Relations. Wiley; New York: 1958.

Kinzler KD, Dupoux E, Spelke ES. The native language of social cognition. PNAS. 2007; 104:12577–12580. [PubMed: 17640881]

Krebs D. Empathy and Altruism. Journal of Personality and Social Psychology. 1975; 32(6):1134–1146. [PubMed: 1214217]

La Freniere, P.; Strayer, FF.; Gauthier, R. Child Development. JSTOR; 1984. The emergence of same-sex affiliative preferences among preschool peers: A developmental/ethological perspective.; p. 1958-1965.

Leach CW, Spears R. Dejection at in-group defeat and schadenfreude toward second- and third-party out-groups. Emotion. 2009; 9:659–665. [PubMed: 19803588]

Mahajan N, Wynn K. Origins of “us” versus “them”: Prelinguistic infants prefer similar others. Cognition. in press.

Newcomb, TM. The Acquaintance Process. Holt, Rinehart & Winston Press; New York: 1961.

Prentice, DA.; Miller, DT., editors. Cultural divides: Understanding and overcoming group conflict. Russell Sage Foundation; New York: 1999.

Rosenbaum ME. Commentary on a proposed two-stage theory of relationship formation: First, repulsion; then, attraction. Journal of Personality and Social Psychology. 1986; 51:1171–1172.

Sherif, M.; Harvey, OJ.; White, BJ.; Hood, WR.; Sherif, CW. Intergroup conflict and cooperation: The robbers' cave experiment. University of Oklahoma Press; Norman, OK: 1961.

Singh R, Ho SY. Attitudes and attraction: A new test of the attraction, repulsion, and similarity-dissimilarity asymmetry hypotheses. British Journal of Social Psychology. 2000; 39:197–211. [PubMed: 10907095]

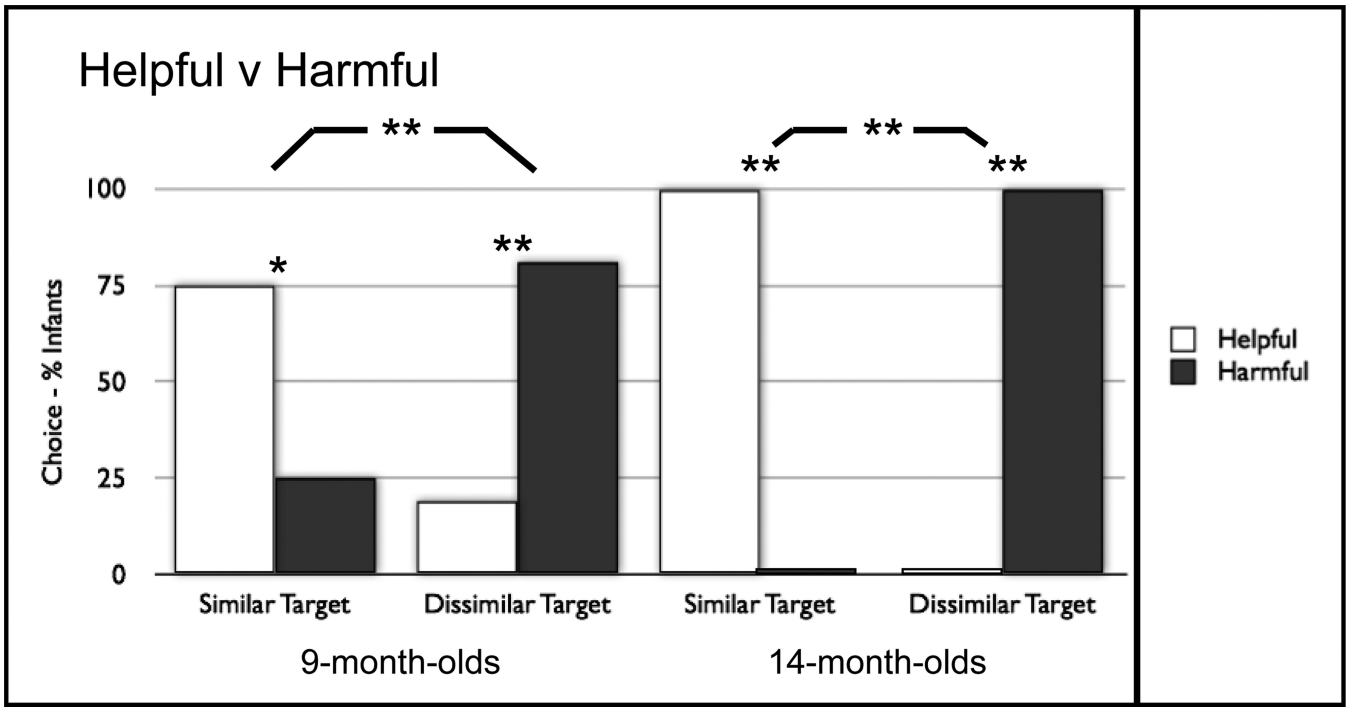
Smith RH, Powell CAJ, Combs DJY, Schurtz DR. Exploring the when and why of schadenfreude. Social and Personality Psychology Compass. 2009; 3:530–546.

Suedfeld P, Bochner S, Matas C. Petitioner's attire and petition signing by peace demonstrators: A field experiment on reference group similarity. Journal of Applied Social Psychology. 1971; 1:278–283.

Sunnafrank M. Attitude similarity and interpersonal attraction in communication processes: In pursuit of an ephemeral influence. Communication Monographs. 1983; 50(4):273–284.

Tajfel, H.; Billig, MG.; Bundy, RP.; Flament, C. European Journal of Social Psychology. Vol. 1. Wiley Online Library; 1971. Social categorization and intergroup behaviour.; p. 149-178.

Tan DTY, Singh R. Attitudes and attraction: A developmental study of the similarity-attraction and dissimilarity-repulsion hypotheses. Personality and Social Psychology Bulletin. 1995; 21:975–986.



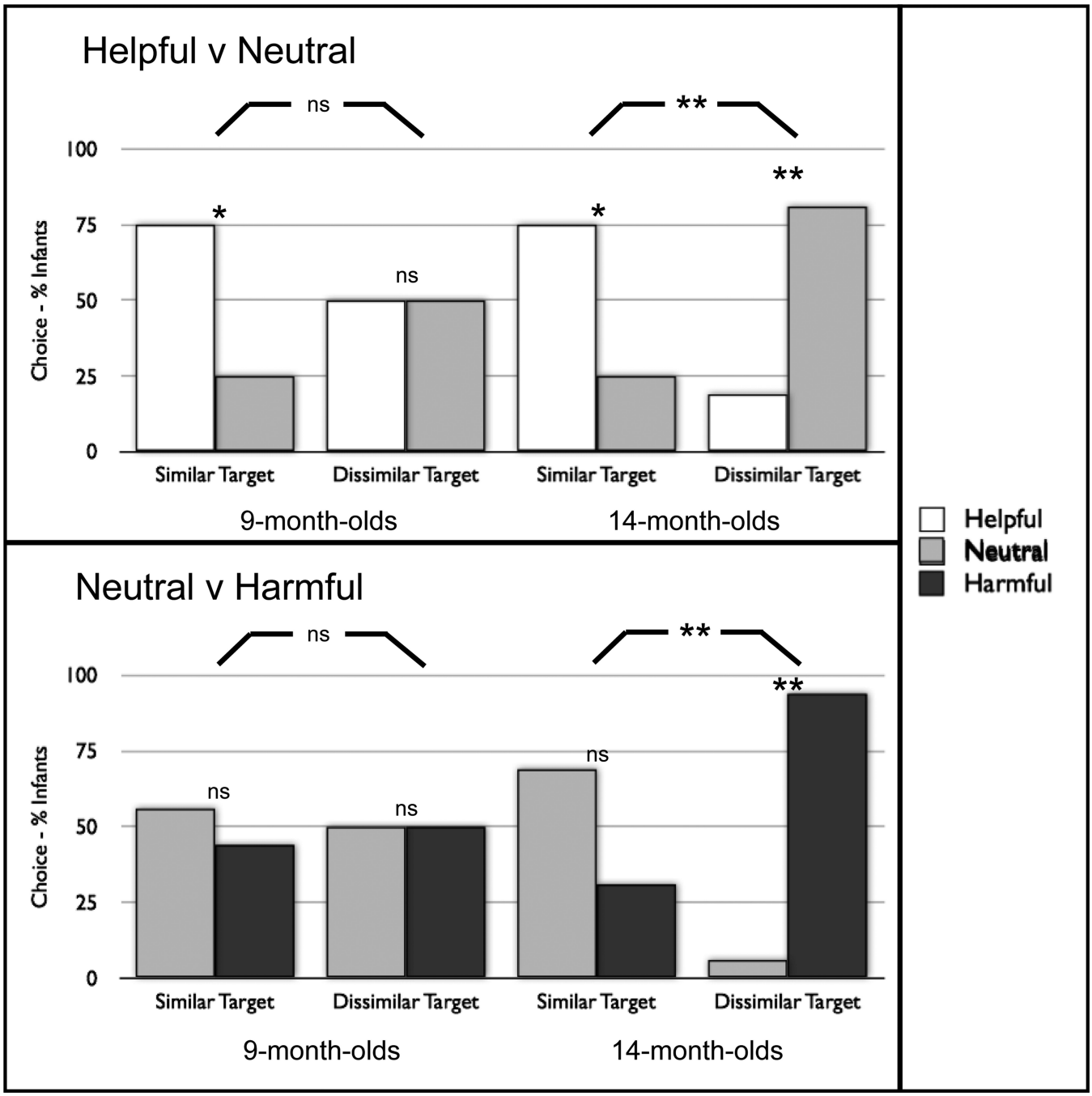



**Figure 1.**

Results. Percentage of infants choosing the helpful versus the harmful puppet in Experiment 1, and the helpful versus the neutral and neutral versus harmful puppet in Experiment 2; separated by age.