Do Infants Recognize Relationships Indirectly?

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Abstract.
The target article notes ways infants can use direct interactions between individuals to recognize relationships. We ask whether infants might also recognize relationships between individuals indirectly, by observing how they interact with other people. We suggest indirect information might be used to distinguish between communal sharing and equality matching relationships and discuss how it might support inferences of relationship strength.

Main text.
People's interactions with one another are often informative about how they are related. We will draw a different conclusion about the relationship between two people if we see them passionately kiss, compared with if we see them dispassionately shake hands. In discussing how infants recognize relationships, the target article focuses mostly on judgments that work this way—ones requiring that infants see agents interact with one another.

Sometimes, though, we may infer relationships between individuals indirectly, by observing their interactions and relations with other people. For instance, we may conclude two boys are brothers if they call the same woman "Mom" and this will work even if we never see the boys interact. Similarly, we might conclude two girls are likely to be friends if we know they have many friends in common, and again this doesn't require ever seeing the girls together. Recent experimental work shows that adults and preschool-aged children recognize relationships using this kind of indirect information (Sehl et al., 2024; also see Son et al., 2023). For instance, in one series of experiments, 5-7-year-olds and adults were informed about the friendships of two target individuals and then judged whether the targets were friends with one another (Sehl et al., 2024). Children and adults more often inferred friendship when a high rather than low proportion of the targets' friendships were mutual.

The target article discusses two ways infants might recognize *potential* social connections (i.e., as opposed to recognizing existing relationships). First, if infants see their own parent imitate one individual rather than another, infants show signs of expecting the imitated individual to be more likely to engage with them (Thomas et al., 2022). This suggests infants use the observed interactions of their parents as a cue to their own likely future relationships. Infants may also infer potential connections when making transitive inferences about dominance and subordination. If they see Alex dominate Bob, and Bob dominate Carl, they expect that Alex will dominate Carl (e.g., Gazes et al., 2015; Mascaro & Csibra, 2014). But as the target article notes, infants might not recognize existing relationships between the individuals.

It is plausible, though, that infants might infer existing relationships between individuals by seeing how they interact with others. That is, infants might make inferences akin to recognizing that two boys are brothers from their separate interactions with their mother, and recognizing that two girls are likely to be friends given their many mutual friendships. Moreover, the nature of the observed interactions could allow infants to distinguish different types of relationships. Our proposal here is speculative and might involve judgments well beyond the abilities of infants. If so, indirect inferences of relationships might develop later, perhaps in childhood.

Let's first consider communal sharing relationships. The target article suggests infants recognize strong communal sharing relationships when they see interactions where individuals share saliva, for instance by drinking from the same cup (Thomas, Woo, et al., 2022). Consider, though, what infants might conclude from seeing a woman and one boy drink from the same cup, and later seeing the same woman and another boy take bites from the same sandwich. It could be that infants would recognize only that the woman is in communal sharing relationships with each boy. Alternatively, infants might go further and conclude the two boys are themselves in a communal sharing relationship, even though they did not share food and drink. Such indirect inferences might be especially likely for communal sharing, since this relationship type typically applies to bounded groups of people (Fiske, 1992). The conclusion that the two boys are related in this way might also be strengthened given additional evidence that the boys know one another—for instance, if the two episodes happened in the same place in close succession.

Now let's consider equality matching relationships, which are marked by balanced reciprocal exchanges. In equality matching if Alex gives resources to Bob, it's expected that Bob will later reciprocate and give resources to Alex. As reviewed in the target article, some evidence that infants recognize these relationships comes from findings that they expect agents to reciprocate in giving-and-taking. Here again, infants might infer relationships between individuals based on their interactions with others. Suppose Alex and Bob each separately reciprocate in giving-and-taking with Carl, Diana, and Earl, and these latter individuals also reciprocate with one another. Even without having observed Alex and Bob directly interact, infants might expect them to reciprocate. For instance, they might assume that all these individuals are part of an equality matching network.[1]

These kinds of indirect inferences might also support conclusions about relationship strength. Numerical and statistical information could be relevant here in opposing ways. On one hand, a greater number of episodes observed could increase confidence both in the presence of relationships and in their strength. For instance, if two boys each frequently share food and drink with the same woman, this might suggest stronger communal sharing relationships with her, and possibly with each other. On the other hand, observing too many indirect episodes could push things the other way. If the boys frequently share food with each other but are not seeing interacting with one another, this could suggest they are not strongly connected.

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[1] What about authority ranking relationships? As the target article discusses (and as noted above), transitive inferences about dominance could allow infants to recognize these relationships but might not. But indirect inferences might be more likely with evidence that the individuals are socially connected. If Alex dominates Bob, and Bob dominates Carl, infants might recognize an authority ranking relationship between Alex and Carl if given evidence they are acquainted.

Conflicts of Interest. None

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