

Evidence for Intuitive Morality: Preverbal Infants Make Sociomoral Evaluations

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ABSTRACT—*Traditional views of morality and moral development rooted in rationality and demonstrations of explicit reasoning suggest that moral evaluations emerge in childhood. In contrast, definitions of morality rooted in intuition allow scholars to examine the emergence of moral evaluations among those who cannot reason this way, such as human infants. Consistent with an intuition-based view of morality, infants evaluate prosocial individuals positively and evaluate antisocial individuals negatively. These evaluations are sensitive to the intent and epistemic states of the person who is helping or hindering, and to the previous behavior of the person who is being helped or hindered. Early-emerging intuitions regarding others' morally relevant behaviors may have evolved to support wide-scale cooperation in human societies.*

KEYWORDS—*infants; social evaluations; moral evaluations; moral intuitions; moral reasoning; moral development*

Human beings are judgmental. Although some judgments are largely inconsequential (e.g., opinions on which ice cream flavors are best), others inform critical aspects of life. Perhaps the most consequential class of judgments humans make are moral judgments: evaluations of which people and actions are good, right, and deserving of praise, and which are bad, wrong, and deserving of punishment. Although the specific contents of

moral judgments vary across individuals, cultures, and time, all humans judge that some things are right and some are wrong (1). One notable aspect of moral judgments is that they are regularly made from the perspective of an independent bystander: We care not only how others behave toward us, but also how unknown individuals are treated, even if we have no clear stake in the situation. Why and how do we do this? A developmental perspective holds that accurately understanding moral judgments requires exploring how the moral sense emerges. This task depends, in part, on how we define *morality*.

In this article, we consider two compatible possibilities: that moral evaluations are rooted in reason and that moral evaluations are rooted in intuition. We discuss the types of evidence that support each view, and then review studies suggesting that moral evaluations stem from early-emerging intuitions. We end with suggestions for research.

THE ROOTS OF SOCIOMORAL EVALUATIONS

Moral Evaluations Rooted in Reason

Several influential philosophers and psychologists define morality according to a deontological perspective. According to Kant (2), moral norms are applicable universally and determinable only by deliberate, rational thought. Consistent with Kant's proposition, the prominent moral developmentalist Lawrence Kohlberg (3; see reviews in 4) considered the capstone of moral development to be the ability to judge others based on principles that exclude issues of egocentric concern, convention, or legality. Since this ability is not present reliably until adolescence, Kohlberg concluded that truly moral judgments do not emerge until late in development.

Recent studies have shown that humans privilege moral over egocentric and social-conventional concerns earlier than Kohlberg thought (see 5, for review). For example, by 3–4 years, children consistently judge moral transgressions (e.g., hitting another child) to be more serious, more likely to be wrong across contexts, and more likely to be wrong regardless of authority sanctions than conventional transgressions (e.g., talking during

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story time; 6). These results suggest that even young children can explicitly recognize the context independence of moral principles, as required by the deontological perspective. That said, because this perspective emphasizes explicit reasoning, it restricts the exploration of early moral judgment to ages at which such reasoning can be measured reliably.

Moral Evaluations Rooted in Intuition

In contrast to the claim that moral principles are the product of explicit reasoning, others have proposed that moral evaluations are rooted in intuitions regarding the value of certain acts (7). These proposals typically define *moral intuitions* as automatic, emotion-based responses to morally relevant actions and individuals; these are believed to arise independently from conscious reasoning (but see 8, for a nonemotion-based theory of innate moral judgment). Consistent with an emotion-based account, certain moral dilemmas activate brain areas associated with emotion rather than abstract reasoning (9). The importance of emotion in moral evaluation is evident from childhood; for instance, in one imaging study of 4- to 37-year-olds, emotion-related neural areas were active when younger participants observed moral events, whereas areas associated with abstract reasoning were increasingly active later among older participants (10). Furthermore, individuals with early-onset lesions to emotion-related brain regions are deficient in later moral reasoning (11), suggesting that emotional processing plays a causal role in the typical development of moral judgment.

But how do these emotion-based moral intuitions emerge? One possibility is the internalization of socialized moral norms children receive from individuals in their environment (12, 13). Indeed, children may come to view certain actions as good and bad even before they can justify their intuitions explicitly. Another explanation—one that is consistent with the idea that moral norms are socialized—is that moral intuitions may emerge early because they have been built in to the species as a result of the benefits they confer on cooperative systems. Specifically, although cooperative systems can be mutually beneficial, groups of cooperators are at risk from “cheaters” who benefit from others’ cooperation, but who contribute nothing themselves. Humans’ successful cooperation implies that systems for avoiding such exploitation evolved. Such systems could include quickly assessing others’ likelihood to cooperate, positively evaluating cooperators, negatively evaluating cheaters (so that one cooperates only with those likely to return the favor), and intervening when cheating occurs (14–17). These systems may take the form of positive emotional reactions to acts considered morally good and negative emotional reactions to acts considered morally bad.

EVIDENCE FOR EARLY SOCIOMORAL EVALUATIONS

Because the conceptualization of moral judgments as stemming from socialized or evolved intuition does not emphasize demon-

strations of explicit moral reasoning, it does not limit scholars interested in the beginnings of moral judgment to groups that can reason this way. In a recent study (18), 2-year-olds spontaneously protested first-party moral transgressions (e.g., when a puppet took their object), and 3-year-olds spontaneously protested third-party moral transgressions. These results suggest that even young children appreciate the normative aspects of moral violations. Furthermore, 3-year-olds protested moral transgressions more readily than conventional ones (e.g., regardless of who performed them; 19), suggesting that they recognize that moral rules are more applicable universally than conventional rules.

Before the onset of language, prosocial and antisocial behaviors influence infants’ attention. By the end of the 1st year, infants’ looking suggests that they treat actions as more similar when they share valance (e.g., helping/caressing vs. hindering/hitting) than when they share physical characteristics (e.g., caressing/hitting vs. helping/hindering; 20), and expect that others will approach those that help, rather than hinder, the achievement of the individuals’ goals (21, 22). In the 2nd year, infants show an early understanding of fairness, expecting others to divide resources equally between recipients (23). Infants’ expectations of fairness are sensitive to context, including whether the recipients deserve to be treated fairly (24), and are related to the infants’ willingness to engage in prosocial behavior (25). In these studies, infants expect others to act consistent with moral norms. Do they also evaluate others in ways that are consistent with such norms?

To explore whether infants evaluate others based on prosocial and antisocial acts, researchers examined infants’ evaluations of characters engaging in prototypical helpful and unhelpful behaviors. Infants viewed puppet shows featuring a protagonist attempting unsuccessfully to achieve a goal (climb a hill, open a box, or retrieve a ball). The protagonist’s goal was facilitated by a helper (who pushes the protagonist up the hill, helps him open the box, or returns his ball), and thwarted by a hinderer (who pushes the protagonist down the hill, slams the box closed, or takes his ball away). Infants were then presented with the helper and hinderer; infants’ preference was determined by which puppet they looked at or reached for. Such preferences need not reflect the explicit, conscious reasoning that often influences adults’ choices.

By 3 months, infants looked longer at individuals who facilitated a protagonist’s goal than at those that blocked his goal (26, 27). Once infants could make visually guided reaches, they selectively reached for the helper over the hinderer (26, 28, 29, but see also 30). Early preferences appeared driven by a negative evaluation of the hinderers rather than a positive evaluation of the helpers: The 3-month-olds looked longer at neutral characters than at the hinderers, but looked equally at neutral characters and the helpers (27). In contrast, older infants reached toward the helpers over neutral characters and toward neutral characters over the hinderers (28).

WHAT IS THE NATURE OF INFANTS' EVALUATIONS?

Infants' Evaluations Are Social

Infants may prefer helpers to hinderers because of low-level physical differences between the helping and hindering scenarios rather than a preference for prosociality (31). To explore this possibility, several studies included conditions in which characters directed their actions toward an inanimate object rather than an animate protagonist, rendering key behaviors (e.g., upward or downward pushing, opening or closing boxes, and giving or taking balls) socially and morally irrelevant. Infants did not prefer the helper in inanimate conditions, suggesting that their character choices in animate conditions were not based on low-level aspects of the stimuli. More directly, 10-month-olds distinguished individuals who performed the same actions toward different targets: They preferred a character that comforted a human and pushed a backpack to a character that pushed a human and comforted a backpack (32).

In addition to the requirement that helpers and hinderers direct their behavior toward social agents, infants' evaluations required that the protagonist actually needed help, that is, that he had a clearly identifiable unfulfilled goal. For example, in the hill-climbing scenario, when the protagonist's eyes pointed uphill (indicating intent to climb), 6- to 11-month-olds preferred the helper. In contrast, when the protagonist's eyes were unfixed and pointed down the hill, infants chose randomly (31, 33). Taken together, these studies demonstrate that infants' evaluation of physically identical actions depends on the social and intentional status of the actions' target.

Infants' Evaluations Are "Moral"

Although the work just discussed suggests that infants' preference for helpers over hinderers is rooted in social aspects of the scenarios, this alone does not demonstrate that infants' social preferences are moral. For instance, infants may prefer prosocial to antisocial characters simply because they prefer to interact with individuals they view as likely to help them, rather than because they have an impartial sense that helping is better than harming. Consistent with this social interpretation of infants' preferences, 6-month-olds' neural activity, while they observed helping and hindering, suggests that detecting prosociality was related to processes supporting social perception more generally, including goal-directed grasping, pointing, and gaze direction (34), rather than processes unique to interpreting morally relevant behaviors. Furthermore, infants' perception of prosocial and antisocial events and later selection between helpers and hinderers was associated with domain-general processes such as attention and approach-withdrawal (35), suggesting that a preference for helpful others may not rely on a specifically moral sense (36). Next, we discuss studies that explore whether early evaluations of helpers and hinderers are more than simply social.

Infants' Evaluations Are Sensitive to Intent

When evaluating whether an action is morally praiseworthy or blameworthy, adults consider both the outcome of an individual's actions and his or her intentions—what the individual meant to do (37). For example, an individual who intended to cause harm is often judged more harshly than an individual who caused harm accidentally, and an individual who intended to help but could not do so may be judged more positively than an individual who did not attempt to help.

To determine whether infants' social evaluations are sensitive to an individual's intentions, infants were shown scenarios featuring successful helpers and hinderers (who carried out their intention to help or hinder the protagonist in opening a box, as in 26) or unsuccessful helpers and hinderers (who attempted but failed to help or hinder the protagonist, ultimately bringing about outcomes that opposed their intentions; 38). Across different combinations of successful and unsuccessful helpers and hinderers, 8-month-olds preferred individuals with positive intentions to those with negative intentions, regardless of whether the protagonist achieved his goal. Infants did not distinguish characters that either succeeded or failed at carrying out the same helpful or harmful intention, suggesting that infants' social evaluations focus on intent by 8 months. In contrast, despite preferring successful helpers to successful hinderers, 5-month-olds displayed no preference in any comparison that included a character with a failed intention, consistent with previous research suggesting that young infants find failed attempts difficult to interpret (39). Thus, by 8 months, but perhaps not before, infants use intention rather than outcome to evaluate helpful and unhelpful actions.

Infants' Evaluations Are Sensitive to Epistemic States

Unlike in the previously described situation, in which the overarching goal of the helpers and hinderers to facilitate or block the protagonist's goal was clear, sometimes the prosocial or antisocial status of an action is not obvious and must be inferred from additional information. For example, although opening the box in the previous situation was clearly prosocial, this is not always the case: The character opening the box may have realized that the protagonist's preferred object was no longer inside the box, or the character may not have been aware of the protagonist's goal. If so, the character opening the box would not necessarily be considered praiseworthy.

To explore whether infants' evaluations of helpful and unhelpful individuals are sensitive to epistemic states such as knowledge of a character's goal, 10-month-olds were shown a scenario featuring a protagonist and two observers (40). The protagonist first displayed a preference for one of two toys by repeatedly choosing one toy over the other; the toys were then made inaccessible to him. Each observer, who had observed the protagonist's choices of toys and therefore "knew" his preference, then made one or the other of the toys available to him: The knowledgeable helper allowed the protagonist to access his preferred

toy, and the knowledgeable hinderer allowed the protagonist to access his nonpreferred toy. When presented with the knowledgeable helper and hinderer, 10-month-olds reached toward the helper.

The knowledgeable helper/hinderer condition was subsequently compared to two conditions that varied as to whether the protagonist had a preferred object, and whether the helper/hinderer could have known about the preference. In the no-preference condition, only one toy was present during the protagonist's initial grasps for toys, so the helper and hinderer could not have known which toy he would rather play with when later providing access. In the ignorance condition, the helper and hinderer were offstage during the protagonist's initial grasps, and were therefore unaware of which toy he preferred. When presented with either the no preference or the ignorant helper and hinderer during choice, 10-month-olds did not systematically prefer either one. Thus, infants evaluated the helper and hinderer differentially only when these characters knowingly helped or hindered the protagonist in achieving a goal, further demonstrating that infants' evaluations of prosocial and antisocial behavior are sensitive to mental states.

Infants' Evaluations Are Sensitive to Whom is Targeted

The studies we have described show that infants prefer helpers to hinderers, and that these evaluations are sensitive to intention and other mental states. However, not all actions that are intended to prevent others' goals should be evaluated negatively. For example, antisocial behavior directed toward wrongdoers is often evaluated positively, perhaps because it reduces the benefits associated with being antisocial (15).

To examine whether infants appreciate when antisocial behaviors are appropriate, infants were shown helpers and hinderers interacting with previously prosocial or antisocial protagonists, who deserved either reward or punishment, respectively (41, 42). Across several studies, 4½-, 8-, and 19-month-olds preferred those who helped a previously prosocial protagonist and those who hindered a previously antisocial protagonist. Thus, rather than simply preferring those who intentionally perform helpful rather than unhelpful actions, infants consider the target of these actions, positively evaluating antisocial actions directed toward antisocial individuals.

A preference for those who direct antisocial behavior toward antisocial others is consistent with a positive moral evaluation of those who punish wrongdoers. However, it is also consistent with a positive social evaluation of anyone who shares the infants' (negative) opinion of the wrongdoer (which the punisher clearly does). Indeed, shared opinions are a source of mutual liking and affiliation, whereas differing opinions may breed dislike (as illustrated by the phrase, "The enemy of my enemy is my friend"; 43). The tendency toward liking enemies of enemies emerges in infancy: Infants prefer those who hinder individuals who like a different food than they do (44). These results suggest that infants' positive evaluation of hinderers is not limited to sit-

uations where adults believe punishment is acceptable. However, because positive evaluations of the in-group relative to the out-group may facilitate in-group cooperation (45), and because some moral systems feature group-based concerns (7), it is unclear whether this pattern of results supports a moral interpretation of infants' social preferences.

CONCLUSIONS AND NEXT STEPS

In summary, the evidence we have presented demonstrates that infants' evaluations of others' prosocial and antisocial behaviors are consistent with adults' moral judgments in several ways, focusing on mental states and differing across contexts. This evidence is consistent with the claim that moral intuitions support evaluations of behaviors that sustain and undermine cooperative systems. However, as mentioned earlier, the evidence has not demonstrated that infants have the capacity to make evaluations that deontologists would consider moral; this would require infants' evaluations to reflect the reason-based objectivity of moral principles (see 46). In particular, researchers must continue to explore whether infants' preference for helpful over unhelpful characters is objective and impartial, or based instead on an analysis of who is most likely to benefit infants themselves. For example, if infants' evaluations are impartial, they should prefer someone who distributes resources equally to deserving recipients over someone who unfairly distributes more resources to the infants themselves.

Furthermore, while we have presented evidence that infants evaluate others' morally relevant behaviors in complex ways, we do not claim that infants' moral evaluations are sensitive to all the factors adults consider when making moral judgments. Rather, the development of a mature moral system requires experience, the maturation of cognitive abilities (executive functioning, problem solving, counterfactual reasoning), interactions with parents and peers, and socialization within the family and community (see 4, for reviews). We simply claim that these developmental processes may be shaped by early-emerging evaluations of cooperative and uncooperative others that are surprisingly consistent with certain aspects of mature moral systems.

Researchers should also explore the role of infants' sociomoral intuitions in children's moral development. Key questions include: How do early preferences for prosocial others relate to children's tendency to perform prosocial behaviors? How do these preferences relate to individual differences in other areas of social and moral development? Furthermore, even if one is willing to attribute moral relevance to all of the topics described earlier (including group-based concerns), moral evaluations can change over development and often differ across cultures. Do these differences suggest that the content of sociomoral intuitions changes fundamentally over time, or are some intuitions overshadowed by complex reasoning processes? How do these changes occur, and how might they be influenced by specific

experiences? Answering these questions will clarify the role of intuitions and reason in moral judgments.

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