Theory of mind and resource allocation in the context of hidden inequality

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A B S T R A C T

In many situations, children evaluate straightforward resource inequalities as unfair. It remains unclear, however, how children interpret hidden inequalities (i.e., inequalities that are unknown to allocators and/or recipients). Children 3–9-years-old (N = 87) evaluated and attributed intentions to a naïve resource allocator who, while unaware of a hidden inequality, made three hypothetical resource allocations: (1) an unknowingly equitable allocation (which rectified the inequality), (2) an inequitable allocation (which perpetuated the inequality), and (3) an equal allocation (which maintained the inequality). Children without false belief morally-relevant theory of mind (FB MoToM) attributed more positive intentions to the unknowingly equitable allocation than to the inequitable allocation. Children with FB MoToM, however, did not differ in their attributions of intentions to the unknowingly equitable and inequitable allocations, reflecting their knowledge that the naïve allocator was not aware of the hidden inequality. Further, children’s attributions of intentions were related to their evaluations of the allocations. These findings underscore the importance of children’s social cognitive inferences to their evaluations of resource allocation decisions.

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1. Introduction

The rectification of unjust inequalities is a fundamental moral concern when determining fair methods of allocating resources (Rawls, 1971; Sen, 2009). The recognition of this concern emerges early in childhood, as children become better able to understand the needs, desires, and emotions of others (Donovan and Kelemen, 2011; Killen, Elenbaas, Rizzo, & Rutland, 2017; Mulvey, Buchheister, & McGrath, 2016; Rizzo, Elenbaas, Cooley, & Killen, 2016; Sigelman and Witzman, 1991). Children as young as 3–5-years-old give more resources to those who have less (Li, Spitzer, & Olson, 2014; Paulus, 2014; Rizzo & Killen, 2016), and sometimes even prefer to discard resources rather than create an inequality (Shaw & Olson, 2012). Children’s preference for equality not only influences their own resource allocations but also extends to their evaluations of others’ allocations (Cooley & Killen, 2015). Not all inequalities, however, are readily visible or easily rectified. Many inequalities are “hidden” from view and may not be apparent to resource allocators or even to those who are directly affected by the unequal distribution. That is, it is not always apparent that one recipient has more resources than another. Resource allocation contexts involving unobserved inequalities between recipients are important to investigate because: (1) many situations in social life require inferences about resources that are not observable to allocators; and (2) resource

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allocation decisions, like other morally-relevant decisions, rely on mental state attribution mechanisms that have not yet been discovered and documented. In fact, no research, to our knowledge, has examined how children respond to – or expect others to respond to – hidden inequalities.

1.1. Hidden inequalities

Understanding how children respond to hidden inequalities is important, as real-world resource allocation decisions often take place in social settings where the quantities of resources possessed by individuals are not known by all parties. The theoretical framework that guided this study is the Social Reasoning Developmental (SRD) model (Killen & Rutland, 2011; Rutland & Killen, 2017), which postulates that understanding the development of moral concepts, such as fair allocation of resources, requires assessments of other social cognitive competencies, such as intentionality (mental state knowledge) or social group processes (group dynamics). In this study, we focused on the former issue, mental state knowledge, to provide novel information about how children evaluate fair allocation of resources (also termed distributive justice). While alternative theories have proposed that knowledge about others (e.g., mental states) emerges prior to moral judgments, in the SRD model the approach is to document how children coordinate multiple domains of knowledge (forms of reasoning) to make moral decisions. In the present study, we examined children’s conceptions of fairness by focusing on resource allocation in the context of a hidden inequality, a condition in which we propose that intentionality judgments must be coordinated with moral reasoning in order to evaluate the fairness of a resource allocation decision by another party.

In many cases, resource allocators must make resource allocation decisions based on recipients’ claims, without being aware of any inequalities that may exist between recipients. While recent research has shown that children consider agents’ mental states when making moral evaluations of their actions (Killen, Mulvey, Richardson, Jampol, & Woodward, 2011; Mulvey et al., 2016), it is unclear how children’s understanding of others’ intentions influences their evaluations of resource allocations. Children may, for example, encounter situations where a resource allocator must decide how to distribute resources to recipients with different claims and different amounts of possessions. When evaluating the fairness of another person’s resource allocation, children must consider not only the numerical equality or inequality that results from the allocation, but also the beliefs and intentions of the allocator.

Taking into account the beliefs and intentions of the allocator is especially important for evaluating cases where the allocator distributes unequal quantities of resources to different recipients. Unequal resource allocations are not necessarily motivated by negative intentions. For example, an allocator who distributes more resources to a hard-working recipient than to an idle recipient may be acting on a positive intention to reward effort meritoriously (Baumard, Mascaro, & Chevallier, 2012; Rizzo et al., 2016). Similarly, an allocator may act on a well-intentioned desire to rectify inequalities by giving more to someone who has little or no resources than to another recipient who already has many resources (Elenbaas, Rizzo, Cooley, & Killen, 2016; Paulus, 2014; Rizzo & Killen, 2016). However, in the context of a hidden inequality, where there are no known differences in effort or need between recipients and where the two recipients both appear to possess the same number of resources, acting on a positive intention (to treat recipients the same by dividing resources equally) may actually cause a negative outcome (the maintenance of the status-quo inequality). As well, in the context of a hidden inequality, acting on a presumably negative intention (by favoring one recipient over another) may actually produce a positive outcome (the rectification of the status-quo inequality). Thus, assessing children’s responses to resource allocation decisions that take place in hidden inequality contexts provides an avenue for investigating how children recruit their social cognitive reasoning skills when interpreting and evaluating resource allocation decisions. Social cognitive reasoning skills include attributions of intentionality and attributions of false belief (Wellman and Liu, 2004; Shiverick & Moore, 2007). Children equipped with these skills, known as Theory of Mind (ToM), may be able to incorporate the beliefs and intentions of resource allocators into their moral evaluations of resource allocations.

Specifically, children with ToM proficiency would be expected to recognize that, in the context of a hidden inequality, enacting an unknowingly equitable allocation (distributing fewer resources to a recipient who already has resources, and distributing more resources to a recipient who has no resources) would reflect an unfair intention on the part of the naïve allocator, who (as the participant knows) is unaware of the disparity that exists between the recipients. Participants with ToM competence would also condemn an inequitable allocation (distributing more resources to the recipient who has resources, and distributing fewer resources to the recipient who has none), because this allocation not only enacts a negative intention to distribute resources unequally but also worsens the existing inequality. Crucially, however, participants with ToM would favor an equal allocation (dividing resources equally between the two recipients) because these participants would recognize that, from the perspective of the naïve allocator (who is unaware of the hidden inequality), it would be equally unfair to give more resources to either recipient. In light of the paucity of research investigating the role of social cognitive competencies in children’s moral evaluations of resource allocation decisions, the assessment of children’s evaluations of resource allocation decisions taking place in a hidden inequality context would provide meaningful insight into how children incorporate belief and intention information into their assessments of these decisions.

1.2. Social reasoning developmental model and morally-relevant theory of mind

The social reasoning developmental model draws on social domain research (e.g., Smetana, Jambon, & Ball, 2014), which has documented that children reason about moral principles (e.g., distributive justice, avoidance of harm, protection of rights,
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