

affection and caring make the development of communication and thinking possible. Humans develop as persons within such relationships and this develops into respect and moral obligation.

Tomasello has a great talent for selecting crucially important topics and carefully exploring them with brilliant experimental work in collaboration with his group of talented colleagues. He proposes collaborative interaction as a social interactive medium in which obligation develops because others are recognized as equals, and so equally deserving, and this leads to mutual respect. The second step is to move beyond responsibility to one's particular collaborative partners and to extend obligation to one's social group, as internalized pressure from a collective "we."

We support Tomasello's goal of explaining the developmental and evolutionary origins of the human sense of moral obligation within an interactive framework. Although his approach is social in the sense of focusing on individuals who interact, this already presupposes rather than explains the development of those individuals. A more thoroughly social approach from a process-relational perspective proposes that persons develop within interaction (Carpendale et al. 2013; Carpendale & Lewis 2004; 2006; 2015a; 2015b).

Instead of attempting to explain the emergence of a sense of obligation later in development, concern for others is already implicit in the typical human developmental system with its origins in mutual affection and caring. This is necessary to start the developmental process early in the infant's life, as seen in frequent dyadic exchanges and the emergence of intense attachments by 6 months of age. Humans develop as persons within relationships of mutual affection, and this transforms to mutual respect in the sense of treating those others with care. Morality is based on mutual affection (Piaget 1932/1965). Treating others as someone, not something (Spaemann 2006), is already embedded in the structure of communicative interaction that infants experience in development – the seeds for mutual respect (Carpendale 2018; Habermas 1990).

It is because human infants are born relatively helpless that there is so much potential for their development. A strong positive emotional connection is a foundation for the human developmental system in which infants develop as persons, and learn to communicate, which makes thinking possible. Within their intense social emotional relationships, infants first learn to communicate through coordinating their interaction with others. Such communication is the basis of language and results in the development of human thinking. All of this requires the social-emotional cradle in which humans develop. Moral obligation is not the result of realizing that others are equals and therefore should be treated with respect. Instead, it is a natural outcome of mutual affection and understanding. This caring and concern for others is what later develops into a sense of obligation, first to those close and, later, extended to others.

There is a missing link in Tomasello's explanation. He suggests that, in collaborating with others, children see them as equal and so equally deserving. But this does not explain why they feel obliged to them. We don't add moral obligation later in development – it is already implicit in the human developmental system as a result of the nature of early relationships. Infants are treated as persons, as participants in interaction. It is the product of treating others as persons and responding to them in everyday activity. Our interpretation of the research showing that 3-year-olds feel obligation to those they interact

with collaboratively is that children have experienced obligation within the communicative interaction they grow up in. Conversation is a special case of collaborative interaction in general, as Grice (1975) suggested, which is extended to the research settings involving collaboration. In conversation, failing to respond to others is morally accountable (Turnbull 2003). Some children may occasionally be prompted by caregivers to respond if they fail to do so on their own, but we suggest that this is unlikely to be the primary way that they learn about obligation in conversation. Instead children pick up on others' expectations of a response within many daily interactions. Gradually, children begin to recognize the consequences for others' feelings of not responding to them.

Tomasello's second step involves conformity, which he sees as a requirement for membership in a cultural group. He suggests that individuals feel social pressure as obligation, but we are not convinced that this can be a complete explanation for moral obligation. People sometimes feel a moral obligation to disobey the culture's (and our parents') ways of doing things if they are believed to be wrong and need to be changed. Tomasello does not explain this. For him, children buy into cultural norms without evaluating them and uphold such norms because of what others will think about them. But this is just conformity. It does not get us to right and wrong. Individuals may disagree with and oppose such norms leading to change. Although conformity is a dimension of human social life, Tomasello's approach is incomplete and leads to moral relativism. It cannot explain how the Greta Thunbergs of every generation challenge the status quo so early in their development.

We suggest that the second step Tomasello proposes beyond individuals' obligation to their collaborative partners is not just one step. Instead, it is a gradual process of including more perspectives on the moral issue in question, beginning with those in close relationships and extending to one's cultural group. But this can be further extended to other groups and to other animals.

Tomasello proposes taking a social approach to explaining the source of moral obligation, but there are three problems with his argument. First, there is still an implicit separation of emotions and cognition. Second, the process he describes begins with individuals who then cooperate and so feel social pressure as obligation, but we don't always feel obligation as onerous. Third, there is insufficient explanation of how, or why, obligation emerges so late in development. Mutual enjoyment in interaction makes human communication possible and then language and forms of thinking based on language. Caring and mutual affection are embedded in the structure of the human developmental system. These strong emotional bonds are the seed for mutual respect, which is already there in communication, and develops increasingly into moral obligation.

Intuitive theories inform children's beliefs about intergroup obligation

Lisa Chalik 

Yeshiva University, Stern College for Women, Department of Psychology, New York, NY 10016.

lisa.chalik@yu.edu <http://www.developingmindslab.com>

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Abstract

In addition to emerging from children's direct experiences with collaborative partners and groups, children's beliefs about obligation also arise from a process of intuitive theory-building in early childhood. On this account, it is possible for at least some of children's beliefs to emerge in the absence of specific experiences where obligations are held among fellow members of a group "we."

In the target article, Tomasello argues that children initially view obligations as holding among collaborative partners, then they extend this knowledge to collaborative and cultural groups during the preschool years. Overall, this is a convincing argument that makes sense given the extensive literature on when and how children develop an understanding of norms.

Yet, the argument that children's sense of obligation is dependent on their developing concept of "we" implies that it is children's own direct experience in social groups that drives all of their moral understanding. Clearly, children's firsthand experiences with the social groups in their environment influence a range of social category-based processes, including obligation. Yet, this argument overlooks the possibility that at least some of children's beliefs about groups exist as part of a more abstract framework of how social groups function, beyond children's own experiences. For example, Tomasello reviews a great deal of work showing that preschool-aged children show preferential treatment for in-group over out-group members across a range of experimental paradigms (Fehr et al. 2008; Misch et al. 2014; Over 2018; Over et al. 2016). These findings are not trivial and provide strong support for the suggestion that children's beliefs about obligation are embedded within their understanding of social groups. But they do not disentangle children's own affective biases toward the groups they have encountered in the world from their broader understanding of how social groups function in general.

Across development, children build intuitive theories – abstract, domain-specific, causal-explanatory frameworks – of how the world works (Wellman & Gelman 1992). In the social world, children's intuitive theories involve both (a) what social group members are like, and (b) how social group members act toward one another (Rhodes 2013). Importantly, these theories are *normative* in nature – they involve not just descriptions of how group members act, but also prescriptions of how group members are *supposed to act* (Haward et al. 2018; Prasada & Dillingham 2009). In other words, children's intuitive theories establish the obligations by which group members are believed to be bound. To that end, by the preschool years, children view moral obligation as shaped by group membership: They think that people are more likely to harm out-group members than in-group members (Chalik & Rhodes 2014; 2018; Chalik et al. 2014; Rhodes 2012), and that people will protect in-group members over out-group members from harm (Chalik & Rhodes 2018). Furthermore, as soon as children receive input to suggest that a given behavior is morally relevant, they spontaneously expect that behavior to play out according to group boundaries, even if they have had no experience with the particular behavior or groups in question (Chalik & Dunham 2020). Importantly, in contrast to most of the in-group preferences documented in the target article, these findings have all come from tests of children's *third-person* reasoning. In these third-party paradigms, children's judgments cannot be based on any personal biases that they hold



in favor of their own social groups, since children are not members of the groups they are reasoning about. Thus, these findings do not seem to rely on a sense of "we" – rather, they depend on a sense of "they." This sense is abstract in nature, involving children's beliefs about how groups are supposed to function in the world, rather than whatever children have actually experienced with the specific groups in their environment.

This possibility need not be in direct opposition to the one presented by Tomasello. It is certainly possible that children could build their understanding of obligation from *both* their experiences in collaborative partnerships and their intuitive theories of how social groups function. Yet, if both of these proposals are true, then an open question remains: When and how do children incorporate their specific experiences into their more abstract expectations of the world? The relation between children's personal biases, as documented in first-person work, and their abstract expectations of the world, as documented in third-person work, remains largely unexplored, and will be an important area for future research.

An additional issue raised by the intuitive theories account regards the time-course of children's developing understanding of obligation. Tomasello reviews a great deal of work suggesting that it is only after age 3 that children have a true sense of "we." Yet, the strong conclusion that children do not incorporate social groups into their beliefs about moral obligation until this age is premature. If children hold an intuitive theory by which social groups mark moral obligation, and notions of obligation are thus embedded in representations of social groups, then children may begin to develop these beliefs as soon as they start to recognize that social distinctions exist in the world. A great deal of work now shows that infants are sensitive to social groupings within the first year of life (Bar-Haim et al. 2006; Kinzler et al. 2007; Quinn et al. 2002), and that toddlers can represent novel social groups, given the right input (Diesendruck & Deblinger-Tangi 2014; Rhodes et al. 2018). Furthermore, infants and toddlers do appear to have different expectations about how people will interact with one another, depending on group membership (Bian et al. 2018; Jin & Baillargeon 2017; Ting et al. 2019). This evidence is somewhat limited, and there is undoubtedly much about children's understanding of obligation that continues to develop beyond age 3; still, to some extent, it seems likely that children begin to hold these concepts within the first three years of life.

Thus, the argument that children's beliefs about obligation arise from their experiences in collaborative partnerships and groups is a strong one. Yet, it is incomplete without also considering the intuitive theories of social groups that children hold regardless of their direct experiences, as well as the social group-based judgments made by infants and toddlers.

Who are "we" and why are we cooperating? Insights from social psychology

Margaret S. Clark, Brian D. Earp 
and Molly J. Crockett 

Department of Psychology, Yale University, New Haven, CT 06520-8306.
margaret.clark@yale.edu