



# Reply to Warneken: Social experience can illuminate early-emerging behaviors

We admire the groundbreaking work of Felix Warneken and thank him for his questions about our report (1), which builds upon his work.

Warneken acknowledges that early human helping is a “rich social interaction embedded in the context of social experiences more generally” (2). According to his past writings, Warneken simply does not believe that this rich social context plays a role in the emergence of early altruism: “Infants show altruistic tendencies at an age when socialization could not yet have had a major impact on their development” (3).

Our research does not speak to possible biological contributions to altruism, but it does make a social contribution far more plausible (1). Our studies revealed high levels of altruism in young children only after a reciprocal interaction with the experimenter. When children had had highly similar and friendly—but nonreciprocal—play experiences with the experimenter, subsequent levels of altruism were alarmingly low, even though the experimenter’s bids for help were strong. Others, too, have found relatively low levels of altruism in young children (4). In our report (1) we go on to examine how and why reciprocal interactions may trigger altruism and to suggest how early reciprocal interactions may plausibly serve as a basis for altruism.

Warneken questions our conclusions by contending that because chimpanzees sometimes help, “helping emerges in the absence

of any relevant socialization experiences and adoption of human social norms” (2). This is a premature conclusion. It is quite possible that subtle reciprocal interactions in the developmental history or in-laboratory experiences of nonhuman primates foster their ability to help. Indeed, other theories of development suggest that reciprocal interactions in the early life of mammals could explain more sophisticated forms of interaction, such as helping (5).

Warneken (2) also describes his other work, which showed that toddlers cooperated with a puppet even when that puppet failed to cooperate with them. As we suggest in our report (1), that study involved an extensive (likely reciprocal) warm-up experience with the puppet. It is possible that this lengthy initial interaction primed children’s altruism and overrode the uncooperative behavior of the puppet.

In the end, Warneken (2) appears to concede that social interaction plays an important role by questioning the particular type of social interaction we have introduced. But if altruism is so inbred and automatic, why should subtle differences in the type of social interaction that precedes it be so critical? We seem to have made our point.

Many researchers, like Warneken, readily interpret early-emerging behaviors as inherent and unlearned because there has been no direct teaching of the behaviors. By contrast, we suggest that there are numerous routes to

early learning, aside from direct tuition. For example, 1-y-olds have rich mental representations of their attachment relationships with caregivers, despite no direct tuition (6). (Indeed the role of learning mechanisms in language acquisition was underappreciated until statistical learning was discovered.) The task before us is to understand the subtle forms of socialization embedded in social experiences and the capacity of infants to learn from those experiences.

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**1** Cortes Barragan R, Dweck CS (2014) Rethinking natural altruism: Simple reciprocal interactions trigger children’s benevolence. *Proc Natl Acad Sci USA* 111(48):17071–17074.

**2** Warneken F (2015) Are social norms and reciprocity necessary for early helping? *Proc Natl Acad Sci USA* 112:E1052.

**3** Warneken F (2013) The development of altruistic behavior: Helping in children and chimpanzees. *Soc Res (New York)* 80(2): 431–442.

**4** Buttelmann D, Carpenter M, Tomasello M (2009) Eighteen-month-old infants show false belief understanding in an active helping paradigm. *Cognition* 112(2):337–342.

**5** Narvaez D, The co-construction of virtue: Epigenetics, development, and culture. *Virtue Development*, ed Snow NE (Oxford Univ Press, New York).

**6** Johnson SC, Dweck CS, Chen FS (2007) Evidence for infants’ internal working models of attachment. *Psychol Sci* 18(6):501–502.

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The authors declare no conflict of interest.

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