



Commentary

Constraints on natural altruism

Karen Wynn*

Yale University, New Haven, Connecticut, USA

This article is a commentary on 'The roots of human altruism' (Warneken & Tomasello, 2009).

Warneken and Tomasello have conducted a fascinating, and very important, body of research over recent years. Their experiments with human children show that early in the second year of life (the youngest ages of their subjects), infants and young toddlers spontaneously engage in cooperative ventures with others, and will, unasked, help another who is attempting to achieve a goal. Moreover, they do so without expectations of reward, even if they themselves are uninterested in the goal (such as reaching a clothespin in order to hang up an item), and even if their help is at some cost to themselves (such as having to leave an enjoyable activity to help out). This elegant body of research, together with the work showing that our nearest primate relatives, chimpanzees, also have altruistic tendencies, makes a compelling case that helping others is intrinsically rewarding to young humans.

The findings of Warneken and Tomasello fit well with theoretical work on the roots of human cooperation and altruism. For cooperation to develop as an evolutionarily stable strategy in a social species, it has been argued, some key traits must be represented in the population – the presence of altruistic behaviour, the ability to distinguish cooperators from 'free riders', and a willingness to punish the latter (e.g. Bowles & Gintis, 2004; Gächter, Renner, & Sefton, 2008; O'Gorman, Henrich, & van Vugt, 2009). The work of Warneken and Tomasello makes a compelling case that the first requirement is inherent to human psychology. Indeed, young children are, as the authors put it, naturally altruistic.

However, 'natural altruism' need not be promiscuous, and I suspect there may be stronger constraints on children's natural altruism than Warneken and Tomasello have suggested. On the developmental picture they outline, young children are relatively non-selective in their helping behaviour: 'Our proposal is . . . that children start out as rather indiscriminate altruists who become more selective as they grow older'. This is a very interesting claim, in no small part because it is quite counterintuitive. While there are not yet sufficient data to empirically confirm or falsify this proposal, there are

*Correspondence should be addressed to Dr Karen Wynn, Yale University, New Haven, Connecticut, USA (e-mail: karen.wynn@yale.edu).

reasons to suspect, on both empirical and theoretical grounds, that young children may be considerably more discriminating in their altruistic efforts than Warneken and Tomasello (2009) suggest.

There is much research showing that young humans prefer some individuals over others. Infants prefer to look at attractive faces to unattractive ones, happy faces to sad or angry ones, women's faces to men's, familiar faces to unfamiliar ones, and own-race faces to other-race ones (e.g. Bar-Haim, Ziv, Lamy, & Hodes, 2006; D'Entremont & Muir, 1999; Grossman, Striano, & Freiderici, 2007; Langlois *et al.*, 1987; Quinn, Yahr, Kuhn, Slater, & Pascalis, 2002; Slater *et al.*, 1998). Babies also interact differently with individuals on the basis of (at least some of) these preferences: they smile more and longer, and give more 'genuine' smiles, to their mother than to a stranger (e.g. Fox & Davidson, 1988); they smile more to someone expressing positive affect than to someone with a neutral expression (e.g. Cohn, Campbell, Matias, & Hopkins, 1990; Segal *et al.*, 1995); they will selectively take a proffered toy from someone who speaks the infant's native language over someone who speaks a foreign language or with a foreign accent (Kinzler, Dupoux, & Spelke, 2007). In my own lab, my colleagues and I have found that babies prefer others who act prosocially towards a third party, over those who act in an antisocial manner: at as young an age as they are able to reach, they will preferentially reach towards a puppet who has just helped another achieve his or her goal, over one who has just acted to thwart another's goal (e.g. Hamlin & Wynn, 2008; Hamlin, Wynn, & Bloom, 2007). This preference, even in 6-month-old infants, can be broken down into two distinct and separable components - attraction to a prosocial character (a positive 'approach' response), and aversion towards an antisocial character (an avoidance response). Given this wealth of findings showing that babies hold different attitudes towards distinct individuals, it seems plausible, if not probable, that they would respond differently to distinct individuals in their spontaneous helping behaviour as well.

Evolutionary considerations of the origins of altruism and cooperation emphasize the benefits of reciprocal altruism to all members of a social group, and the benefits to kin of non-reciprocated altruism. Natural selection would favour those genes that urged their bearers to preferentially aid (a) their own kin and (b) those individuals, kin or not, who are judged more likely (willing and/or able) rather than less likely to reciprocate in future. If these are in-built tendencies, we might see them operative in even very young humans. On this analysis, we would predict that toddlers would preferentially help out highly familiar individuals - their caregivers, and other family members and individuals with whom they frequently interact (and who therefore, at least in ancestral times, would be likely to be genetically related to any child) - over less familiar individuals.

The empirical results on infants' social preferences reviewed above fit with these considerations. Consider, for example, the finding that infants and children preferentially interact with someone who speaks the language of the infant's own social community, over someone who speaks a different language or with an accent. Would toddlers also produce helping efforts preferentially towards individuals who speak their own, as opposed to a foreign, language? It seems likely, given Kinzler *et al.*'s (2007) results. There are also theoretical considerations that support this prediction: language is a powerful cue to group membership. In ancestral human society, someone speaking a different language was virtually guaranteed to be from a different community, and therefore less likely to be kin, less likely to be acting in the interests of the infant's own community, less likely to be present and able to reciprocate on some unspecified day in the future, and so on.

For another example, consider our findings that infants prefer interacting with an individual who has acted prosocially towards a third party, and that they avoid

interacting with someone who acted in an antisocial manner (Hamlin *et al.*, 2007). An individual's overt social behaviour is perhaps the most powerful and direct cue we have about their cooperative and altruistic tendencies. In the absence of other information about hidden motivations and intentions that might cause us to revise our assessments, we judge the first individual as a 'good egg', more likely to have a generally helpful nature and thus more likable. Would infants and toddlers themselves be more helpful towards someone they had seen act in a prosocial manner than towards someone they had seen acting in an antisocial manner? This too seems a plausible hypothesis.

It is possible that a number of infants' social preferences reflect the existence of an adaptive advantage (at least in our ancestral environment) to interacting with those categories of individuals over others. To assess just how discriminating children's early altruism is, further experiments that elicit helping behaviour in toddlers are needed, in which the identity of the Helpee is systematically manipulated (mother, father, close family friend, foreign-language-speaking stranger, same-language stranger, prosocial stranger, antisocial stranger, happy stranger, sad or angry stranger, and so on).

There are other questions to be asked as well, in continuing the programme of research opened up by Warneken and Tomasello (2009). The above analyses have the general structure: 'What altruistic behaviours confer adaptive benefits to adults; what are the developmental origins of these behaviours; might we see them operative even in infancy (prior to socialization, etc.)?' Another approach to understanding the nature and development of altruistic tendencies in young humans involves asking, 'What is adaptive for an infant?' There are significant changes, with age, in what kinds of behaviours confer adaptive benefits. Considering helping behaviour specifically, it is certainly true that *adults* (and older children) can benefit others through their altruistic acts; but the helping efforts of 14-to-18-month-old *babies*, however heartfelt, are unlikely to increase their recipients' adaptive fitness, given the very limited competence of this age group in almost all domains of human endeavour. ('Thanks, Junior, for handing me that stick - and just in the nick of time for me to fend off the attacking wildebeest!'). They may indeed spontaneously help, but these efforts are unlikely to make a difference that natural selection would take note of. If this is correct, it raises the question of why toddlers would produce altruistic behaviour at all. It may be, of course, that they are doing so not because *at their ages* it benefits others, but because *one day* it will, and it has to emerge at some point in development - like a tadpole's nonfunctional appendage bud, which will one day become a functional limb.

But there is another, more intriguing, possibility. Young toddlers' helping tendency may not benefit others - yet - but that doesn't mean it's quite useless. What about infants' *own* adaptive fitness - might a young human, in 'helping' others, help herself? We are charmed by the video clips of the altruistic efforts of Warneken and Tomasello's young subjects (at least, I'm charmed every time I see them, and judging from others' responses, I'm not alone). I think that we can legitimately consider our own affective responses as data here - data which reveal that toddlers' helping behaviour *does* influence others, not by materially helping them, but by generating goodwill and affection towards the young do-gooder. We see these toddlers' *intention* to be of aid, their desire to help out (as Warneken & Tomasello's (2009) research so clearly shows) without being asked, without reward, and even in the face of personal cost and difficulty - and we are won over by such a clear indication of commitment to 'being on the team'. Perhaps it serves as a form of promissory note for future intent - 'I can't actually be of measurable help yet, but see what a cooperative nature I have, and how genuinely helpful I'll be one day'.

This hypothesis entails that toddlers' altruistic behaviours may have somewhat different target recipients from those of older children and adults. It predicts that toddlers will selectively aim their helping efforts towards those whom it is most beneficial to 'win over'. To a large extent, the predicted target recipients - parents, caregivers, individuals with resources and power - are the same as those of other hypotheses discussed above, but there are some differences. Consider a 2-year-old toddler in our ancestral environment: other young children in her environment, especially those even younger than she is herself, are quite likely to be kin (siblings or cousins), but their goodwill is *not* likely to be of adaptive benefit to her (at least, not while they are this young). Our toddler stands to benefit from individuals *older* than she is herself - those who can help her when she faces a difficulty, who can perhaps be induced (but certainly not coerced as a younger sibling could be) to share food willingly, those who have more competence, resources, and social clout than our toddler herself.

This prediction would be easy to test: do young children show more spontaneous helping behaviour towards adults and older children than towards younger children? If so, one part of the developmental picture that Warneken and Tomasello propose would be turned on its head. We know that adults and older children do help out younger individuals, often extensively and at significant personal cost (ask any parent). If young children do not do so, then, one aspect of altruistic development consists of *enlarging*, rather than narrowing, the space of target recipients. Pushing this prediction even further, we would expect this developmental expansion to occur as children's own altruistic gestures become more effective; that is, when their helping efforts begin to contribute to others' adaptive fitness - at which point it would be beneficial to help out one's younger kin.

The research of Warneken and Tomasello on the evolutionary and developmental roots of altruism has opened up an exciting field of research. It is a sign of how promising the programme is that their findings, to this point, are generating as many new questions as answers. The next decade of research will be an exciting one in which we can look forward to having some of these questions answered.

References

- Bar-Haim, Y., Ziv, T., Lamy, D., & Hodes, R. M. (2006). Nature and nurture in own-race face processing. *Psychological Science*, *17*(2), 159-163.
- Bowles, S., & Gintis, H. (2004). The evolution of strong reciprocity: Cooperation in heterogeneous populations. *Theoretical Population Biology*, *65*, 17-28.
- Cohn, J., Campbell, S., Matias, R., & Hopkins, J. (1990). Face-to-face interactions of postpartum depressed and nondepressed mother-infant pairs at 2 months. *Developmental Psychology*, *26*, 15-23.
- D'Entremont, B., & Muir, D. (1999). Infant responses to adult happy and sad vocal and facial expressions during face-to-face interactions. *Infant Behavior and Development*, *22*(4), 527-539.
- Fox, N. A., & Davidson, R. J. (1988). Patterns of brain electrical activity during facial signs of emotion in 10-month-old infants. *Developmental Psychology*, *24*, 230-236.
- Gächter, S., Renner, E., & Sefton, M. (2008). The long-run benefits of punishment. *Science*, *322*, 1510.
- Grossmann, T., Striano, T., & Friederici, A. D. (2007). Developmental changes in infants' processing of happy and angry facial expressions: A neurobehavioral study. *Brain and Cognition*, *64*, 30-41.

- Hamlin, J., Wynn, K., & Bloom, P. (2007). Social evaluation by preverbal infants. *Nature*, *450*, 557-559.
- Hamlin, J. K., & Wynn, K. (2008, April). Young infants prefer prosocial to antisocial actors. Poster presented at the biennial meeting of the International Conference on Infant Studies, Vancouver, Canada.
- Kinzler, K. D., Dupoux, E., & Spelke, E. (2007). The native language of social cognition. *Proceedings of the National Academy of Sciences*, *104*(30), 12577-12580.
- Langlois, J. H., Roggman, L. A., Casey, R. J., Ritter, J. M., Reiser-Danner, L. A., & Jenkins, V. Y. (1987). Infants' preferences for attractive faces: Rudiments of a stereotype? *Developmental Psychology*, *23*(3), 363-369.
- O'Gorman, P., Henrich, J., & van Vugt, M. (2009). Constraining free riding in public goods games: Designated solitary punishers can sustain human cooperation. *Proceedings of the Royal Society B*, *276*, 323-329.
- Quinn, P., Yahr, J., Kuhn, A., Slater, A., & Pascalis, O. (2002). Representation of the gender of human faces by infants: A preference for females. *Perception*, *31*, 1109-1121.
- Segal, L., Oster, H., Cohen, M., Caspi, B., Myers, M., Brown, D., *et al.* (1995). Smiling and fussing in 7-month-old preterm and full-term black infants in the still-face situation. *Child Development*, *66*, 1829-1843.
- Slater, A., Von der Schulenburg, C., Brown, E., Badenoch, M., Butterworth, G., Parsons, S., *et al.* (1998). Newborn infants prefer attractive faces. *Infant Behaviour and Development*, *21*(2), 345-354.
- Warneken, F., & Tomasello, M. (2009). The roots of human altruism. *British Journal of Psychology*, *100*, 455-471.

Received 20 March 2009; revised version received 20 March 2009