



ELSEVIER

Beyond dichotomies – (m)others' structuring and the development of toddlers' prosocial behavior across cultures

Joscha Kärtner

Basic elements of prosociality — (pro)social cognition, motivation, and prosocial behavior — emerge during the first and second year of life. These elements are rooted in biological predispositions and the developmental system is complemented by caregivers' structuring. By structuring, (m)others integrate toddlers' unrefined (pro)social sentiments and behavioral inclinations into coherent patterns and align toddlers' experience and behavior with the population's cultural model. These cultural models specify target states for appropriate affective, motivational and behavioral responses regarding toddlers' prosociality and these target states, in turn, inform (m)others' appraisal and guide their structuring. The experiences that toddlers make in these social interactions have important implications for how the basic elements of prosociality are refined and further develop.

Address

Department of Psychology, University of Münster, Germany

Corresponding author: Kärtner, Joscha (j.kaertner@uni-muenster.de)**Current Opinion in Psychology** 2018, 20:6–10This review comes from a themed issue on **Early development of prosocial behavior**Edited by **Felix Warneken** and **Robert Hepach**<http://dx.doi.org/10.1016/j.copsyc.2017.07.040>

2352-250X/© 2017 Elsevier Ltd. All rights reserved.

The basic elements of prosocial development

Prosocial behavior can be defined as any behavior intended to benefit others [1]. During the second year of life, prosocial behavior emerges in different domains — helping, cooperating, comforting, and sharing — and toddlers start to pitch in proactively and on request [2–4]. Beyond prosocial behavior itself, recent research focused on the basic elements that are necessary for prosocial behavior to emerge and stabilize in the first years of life, namely (pro)social cognition and motivation. The term (pro)social is used to indicate that prosocial behavior includes a number of genuinely prosocial cognitions and motivations, but also more general processes.

(Pro)social cognition refers to all processes involved in making sense of own and others' behavior in our social world. So far, there is evidence that some critical aspects of prosocial cognition have already emerged: During the second half of the first year of life, infants evaluate others' social behavior [5], they come to understand others' needs [6] and, early in their second year, they expect equal outcomes [7]. Thus, others' intentions, needs, and material outcomes are recognized and relevant for infants' expectations and evaluations of others' behavior.

These aspects of prosocial cognition are inextricably linked to infants' (pro)social motivation that, together, engender prosocial behavior. While there is wide consensus that prosocial behavior emerges during the second year, the kind(s) of motivation underlying prosocial behavior is a matter of much debate: Positions range from a genuinely prosocial motivation [8–12] over social affiliation and social engagement [13–15] to more basic processes (e.g., law of complete *gestalts* or goal-alignment, cf. [16]).

Taken together, the evidence so far suggests that the basic elements of prosocial development, that is, (pro)social cognition, motivation, and behavior have emerged until the first half of the second year. Furthermore, there seems to be consensus that all basic elements are biologically prepared. However, whether these elements are developmental primitives, that is, reliably developing and culturally impenetrable repertoires of internal biases and behavioral inclinations, is an open question. One important methodological approach to find an answer beyond speculative generalization of findings from narrow populations is to conduct cross-cultural research. To my knowledge, there are hardly any cross-cultural studies based on standardized assessments at that early age. Concerning prosocial cognition, the finding that urban German infants understand others' needs was replicated with a sample of 9-month-olds and 18-month-olds from Kyoto, Japan [12]. From the second half of the second year, there is first evidence (although mixed) that the frequency of prosocial behavior and its underlying motivation and processes vary across cultures [11[•],17–19].

Regardless of whether the answer will be that the emergence of these basic elements during the first years is universally uniform or contingent on the cultural context, two further issues are important to consider. First, beyond toddlerhood prosocial development clearly differs

between cultures in terms of frequency and underlying motivations (e.g., [20–23]; for reviews, see [1,24]). Therefore, research on the divergence of developmental pathways and mechanisms of social and cultural transmission helps understand the phenomenon of human prosociality. Second, even if prosocial development during infancy should be universally uniform, findings on relative similarities across species and human populations should not be misconceived as genetic determinism or preformation. Rather, the emergence of prosocial cognition, motivation, and behavior is the outcome of a complex developmental system [25–27].

Two core features of this developmental system are, first, biological predispositions as internal biases that inform (pro)social intuitions and behavioral inclinations and, second, the way in which caregivers, (typically mothers and other family members, for example, grandmothers, fathers, older siblings; henceforth referred to as (m)others) structure the social and non-social environment around children's (pro)social engagement. What is meant by *structuring* here includes what is often referred to as socialization, child-rearing or parenting, but it furthermore encompasses any other way in which (m)others inform children's experience and behavior either deliberately or unknowingly, for example, by directing children's attention or by modeling appropriate responses [28]. Together, these two forces powerfully structure children's experience and behavior and drive children's learning and development.

The repertoire of structuring, cultural models, and prosocial development

A number of authors have argued that the emergence of the basic elements of prosociality should be seen as the joint product of children's intuitions and inclinations and (m)others' structuring [13,29]. To date, there is evidence that maternal encouragement and acknowledgment early in the second year is positively associated with toddlers' prosocial behavior concurrently and prospectively [14]. Furthermore, targeted scaffolding of chores contributes to prosocial behavior in the second year [11,15]. More generally, the basic repertoire of (m)others' structuring consists of attention regulation, modeling, mirroring and prompting of appropriate affective and behavioral responses, and (dis-)approval [[30], J Kärtner, unpublished].

Depending on the cultural context, (m)others may follow different agendas when providing and structuring these settings. By following *cultural models* — defined as a set of shared cultural schemas that make up the population's meaning system [31] — (m)others guide children's attention to those features that are most relevant and they encourage and prompt specific experiences and behavioral responses. By doing so, they coherently organize children's developing (pro)social attention,

appraisal, experience and behavior. In the course of development, these patterns are appropriated as cultural models that, in concert with other internal biases, inform children's experience and behavior. In this sense, culture is defined as any aspect of human experience and behavior that is widely shared among its members and has normative force, that is, encompasses a sense of desirability, obligation, and legitimate enforcement [J Kärtner, unpublished].

Comparing the cultural models of Western urban middle-class and Hindu Indian participants, two recent studies indicate that prosociality is an important socialization goal across cultures [18,19]. However, there is evidence that the cultural models, that is, the meaning systems associated with prosocial behavior differ: According to these studies, being responsive to others' needs is a matter either of deliberate choice or interpersonal obligation, respectively, which has important implications for the motivation underlying prosocial behavior [22].

As it comes to the transmission and appropriation of cultural models, there is support for the assumption that these two cultural models also inform (m)others' structuring: Hindu Indian mothers reported more punitive practices and material reward and less praise than mothers from German middle-class. Furthermore, punitive practices were positively associated with standardized observations of 18-month-olds' helping in Delhi, while associations were negative in a German sample ([18]; for similar findings with older children from Australia and Turkey, see [32]). These differences in structuring are further supported by other studies contrasting parenting in urban middle-class samples from East-Asian and Western cultures ([33–36]; see also [1]).

Another line of cross-cultural research focuses on how variation in cultural models, structuring, and child development is linked to the affordances of the ecosocial context. In many subsistence-based farming ecologies, obedience and the fulfillment of interpersonal responsibilities are primary socialization goals and key indicators of social competence and optimal development [37,38]. In these contexts, toddlers are typically expected to engage in chores from early on and are given more responsible tasks as they get older, such as sibling care and domestic work [39–41]. Most of these authors describe the socialization toward responsibility and the involvement in household chores as the cradle of prosociality [24,38–40]. On the basis of extended observations of everyday social interactions of 3-year-olds to 10-year-olds, children were more prosocial, in terms of their relative position on a dimension from dependence-dominance to nurturance-responsibility, in those cultures that were high in societal complexity and differentiation of social roles [42]. These societal features translated into higher workload of mothers which they, in part, passed on

to their children. Along these lines, there is evidence from naturalistic observational data that (m)others' structuring, in terms of the contexts and opportunities they provide, has direct implications for children's prosocial development within and across cultures [43,44].

So far, standardized behavioral assessments across cultures are rare, especially when it comes to the effect of structuring on the development of toddlers' prosocial behavior. First findings suggest that mothers' structuring during chore assignment has consequences for toddlers' prosocial behavior: while helping was associated with assertive structuring in a subsistence-based farming context, it was correlated with deliberate scaffolding in a Western urban middle-class context [11**]. These findings suggest that mothers' structuring during chore assignment capitalizes on different kind(s) of motivational potentialities that are accentuated and guide toddlers' experience and behavior in other situations.

According to another line of research in psychological anthropology, mainly based on studies with European American middle-class and Mesoamerican families who have at least some experience with traditional Indigenous practices, children are not forced into adopting interpersonal responsibilities, but the fact that they are integrated as valued contributors in mutual family responsibilities plus their inclination to engage (pro)socially provides ideal conditions for children's prosociality to flourish. In contrast, when (m)others' structuring controls children's involvement and delimits children's contributions, which likely is more typical of European American families, children's interest in being helpful and collaborating on their own initiative is undermined and stagnates [45,46], AD Coppens, PhD thesis, University of California, Santa Cruz, 2015]. These ideas and findings complement both cross-cultural and transactional findings reported above.

Conclusion

My key proposal is that we advance our understanding of prosocial development if we consider two primary forces in children's lifeworlds: First, there are biologically prepared basic elements of (pro)social cognition, motivation and behavior. Second, these biases and inclinations that inform toddlers' active prosocial engagement are complemented by external forces, namely (m)others' culturally saturated structuring. Structuring itself is based on a biologically prepared repertoire of sensitivities and behavioral inclinations. Within this underspecified field of forces, it is the cultural model — a shared system of meanings that has normative force — that defines the more specific goals and target states for children's experience and behavior and that presages developmental trajectories. On the basis of these target states, the cultural model informs (m)others' appraisal and guides their structuring within and possibly also beyond their

predisposed repertoire [47]. Together, these two forces coherently organize children's prosocial attention, appraisal, experience, and behavior.

Depending on the cultural model, (m)others' expectations and intuitions concerning children's initiative and obligation to show valuable prosocial behavior vary largely, with important consequences for structuring, that, in turn, has important consequences for prosocial development, especially for the kind(s) of motivation underlying prosocial behavior as development progresses [11**,18*,48]. Importantly, these appropriated cultural models are not necessarily explicit rules or norms, but affective and motivational preferences that are co-constituted by (m)others' structuring and inform children's experience and behavior early in life [31].

Future perspectives and a methodological note

Given these conceptual considerations, it seems indispensable for future research to link standardized observations of prosocial behavior to (m)others' cultural models and structuring during everyday activities. Methodologically, this implies that studies contrast populations with different cultural models to see how this affects structuring and, in turn, child development. To date, studies on prosocial development either include several cultures and, if at all, speculate about the content and role of cultural models and structuring (e.g., [20,21,23]) or they include cultural models and structuring [11**,18*,45], but only assess two or three cultures. Ideally, future studies assess both structuring and prosocial behavior and include several populations that vary concerning their members' cultural model so that questions concerning relations between variation in ecosocial conditions, cultural models, structuring, and child development can be addressed empirically at the aggregate level of culture [49].

For research on the effect of culture on child development, correlational study designs are indispensable. For those interested in the dynamic interplay of structuring and child development, transactional models are a promising extension [14*]. Concerning developmental outcomes, standardized behavioral observations can be complemented by cross-cultural experimental study designs. From the perspective developed here, experimental study designs are promising for cross-cultural approaches not because they preclude prior experience, but exactly because children bring all their prior experience to the experimental setting that they encounter. Considering this, experimental conditions should mimic aspects of structuring that fit children's everyday experience in some populations and, therefore, should be more effective in catalyzing specific behavioral responses than other aspects of structuring that may pass by unnoticed. In this sense, the experimental approach might be helpful in identifying the motives and mechanisms underlying

prosocial behavior that are typical for a specific population and less typical for another.

Conflict of interest statement

Nothing declared.

References and recommended reading

Papers of particular interest, published within the period of review, have been highlighted as:

- of special interest
- of outstanding interest

1. Eisenberg N, Spinrad TL, Knafo-Noam A: **Prosocial development.** In *Handbook of Child Psychology and Developmental Science. Socioemotional Process*, vol 3. Edited by Lamb ME, Lerner RM. Hoboken, NJ, USA: John Wiley & Sons Inc.; 2015:610-656.
2. Dunfield K, Kuhlmeier VA, O'Connell L, Kelley E: **Examining the diversity of prosocial behavior: helping, sharing, and comforting in infancy.** *Infancy* 2011, **16**:227-247 <http://dx.doi.org/10.1111/j.1532-7078.2010.00041.x>.
3. Svetlova M, Nichols SR, Brownell CA: **Toddlers' prosocial behavior: from instrumental to empathic to altruistic helping: toddlers' prosocial behavior.** *Child Dev* 2010, **81**:1814-1827 <http://dx.doi.org/10.1111/j.1467-8624.2010.01512.x>.
4. Kärtner J, Schuhmacher N, Collard J: **Socio-cognitive influences on the domain-specificity of prosocial behavior in the second year.** *Infant Behav Dev* 2014, **37**:665-675 <http://dx.doi.org/10.1016/j.infbeh.2014.08.004>.
5. Hamlin JK: **Moral judgment and action in preverbal infants and toddlers: evidence for an innate moral core.** *Curr Dir Psychol Sci* 2013, **22**:186-193 <http://dx.doi.org/10.1177/0963721412470687>.
6. Köster M, Ohmer X, Nguyen TD, Kärtner J: **Infants understand others' needs.** *Psychol Sci* 2016, **27**:542-548 <http://dx.doi.org/10.1177/0956797615627426>.
7. Sommerville JA, Schmidt MFH, Yun J, Burns M: **The development of fairness expectations and prosocial behavior in the second year of life.** *Infancy* 2013, **18**:40-66 <http://dx.doi.org/10.1111/j.1532-7078.2012.00129.x>.
8. Warneken F, Tomasello M: **The roots of human altruism.** *Br J Psychol* 2009, **100**:455-471 <http://dx.doi.org/10.1348/000712608X379061>.
9. Cortes Barragan R, Dweck CS: **Rethinking natural altruism: simple reciprocal interactions trigger children's benevolence.** *Proc Natl Acad Sci U S A* 2014, **111**:17071-17074 <http://dx.doi.org/10.1073/pnas.1419408111>.
10. Hepach R: **Prosocial arousal in children.** *Child Dev Perspect* 2017, **11**:50-55 <http://dx.doi.org/10.1111/cdep.12209>.
11. Köster M, Cavalcante L, Vera Cruz de C, Dôgo Resende B, Kärtner J: **Cultural influences on toddlers' prosocial behavior: how maternal task assignment relates to helping others.** *Child Dev* 2016, **87**:1727-1738 <http://dx.doi.org/10.1111/cdev.12636>.
This paper provides empirical evidence for the association between maternal structuring during task assignment and toddlers' prosocial behavior based on standardized behavioral observations and, furthermore, discusses implications for toddlers' motivation.
12. Köster M, Itakura S, Kärtner J: **From thinking to acting prosocial: emerging motor abilities and social skills enable infants to help.** (n.d.).
13. Carpendale JIM, Hammond SI, Atwood S: **A relational developmental systems approach to moral development.** *Adv Child Dev Behav* 2013:125-153 <http://dx.doi.org/10.1016/B978-0-12-397946-9.00006-3>.
14. Dahl A: **The developing social context of infant helping in two U.S. samples.** *Child Dev* 2015, **86**:1080-1093 <http://dx.doi.org/10.1111/cdev.12361>.
This study demonstrates the association between mothers' encouragement and praise and toddlers' prosocial behavior during everyday interaction at home. The findings are important from a transactional perspective in that the results suggest that maternal structuring is constitutive in the first and compensatory in the second half of the second year.
15. Hammond SI, Carpendale JIM: **Helping children help: the relation between maternal scaffolding and children's early help: helping children help.** *Soc Dev* 2015, **24**:367-383 <http://dx.doi.org/10.1111/sode.12104>.
16. Paulus M: **The emergence of prosocial behavior: why do infants and toddlers help, comfort, and share?** *Child Dev Perspect* 2014, **8**:77-81 <http://dx.doi.org/10.1111/cdep.12066>.
17. Callaghan T, Moll H, Rakoczy H, Warneken F, Liszkowski U, Behne T, Tomasello M: **Early social cognition in three cultural contexts.** *Monogr Soc Res Child Dev* 2011, **76**:1-142 <http://dx.doi.org/10.1111/j.1540-5834.2011.00604.x>.
18. Giner Torrens M, Kärtner J: **The influence of socialization on early helping from a cross-cultural perspective.** *J Cross-Cult Psychol* 2017 <http://dx.doi.org/10.1177/0022022117690451>.
This study presents findings on cross-cultural differences in toddlers' prosocial behavior and culture-specific associations between socialization strategies (e.g. disapproval or providing opportunities) and toddlers' helping behavior, which are then linked to differences in cultural models and toddlers' motivation.
19. Kärtner J, Keller H, Chaudhary N: **Cognitive and social influences on early prosocial behavior in two sociocultural contexts.** *Dev Psychol* 2010, **46**:905-914 <http://dx.doi.org/10.1037/a0019718>.
20. Blake RR, McAuliffe K, Corbit J, Callaghan TC, Barry O, Bowie A, Kleutsch L, Kramer KL, Ross E, Vongsachang H, Wrangham R, Warneken F: **The ontogeny of fairness in seven societies.** *Nature* 2015, **528**:258-261 <http://dx.doi.org/10.1038/nature15703>.
21. House BR, Silk JB, Henrich J, Barrett HC, Scelza BA, Boyette AH, Hewlett BS, McElreath R, Laurence S: **Ontogeny of prosocial behavior across diverse societies.** *Proc Natl Acad Sci U S A* 2013, **110**:14586-14591 <http://dx.doi.org/10.1073/pnas.1221217110>.
22. Miller JG, Bersoff DM: **Culture and moral judgment: how are conflicts between justice and interpersonal responsibilities resolved?** *J Pers Soc Psychol* 1992, **62**:541-554 <http://dx.doi.org/10.1037/0022-351462.4.541>.
23. Schäfer M, Haun DBM, Tomasello M: **Fair is not fair everywhere.** *Psychol Sci* 2015, **26**:1252-1260 <http://dx.doi.org/10.1177/0956797615586188>.
24. de Guzman Rosario MT, Do KA, Kok CM: **The cultural contexts of children's prosocial behaviors.** In *Prosocial Dev. Multidimens. Approach*. Edited by Padilla-Walker LM, Carlo G. New York, NY, USA: Oxford University Press; 2014:221-241 <http://dx.doi.org/10.1093/acprof:oso/9780199964772.003.0011>.
25. Gottlieb G: **Probabilistic epigenesis.** *Dev Sci* 2007, **10**:1-11 <http://dx.doi.org/10.1111/j.1467-7687.2007.00556.x>.
26. Oyama S: *The Ontogeny of Information: Developmental Systems and Evolution*. edn 2, rev. and expanded. Durham, NC, USA: Duke University Press; 2000 <http://dx.doi.org/10.1215/9780822380665>.
27. Bjorklund DF, Ellis BJ: **Children, childhood, and development in evolutionary perspective.** *Dev Rev* 2014, **34**:225-264 <http://dx.doi.org/10.1016/j.dr.2014.05.005>.
28. Rogoff B: *The Cultural Nature of Human Development*. New York, NY, USA: Oxford University Press; 2003.
29. Brownell CA: **Prosocial behavior in infancy: the role of socialization.** *Child Dev Perspect* 2016, **10**:222-227 <http://dx.doi.org/10.1111/cdep.12189>.
This review provides a good summary of the social influences on early prosocial behavior in different domains.
30. Kärtner J, Crafa D, Chaudhary N, Keller H: **Reactions to receiving a gift – maternal scaffolding and cultural learning in Berlin and Delhi.** *Child Dev* 2016, **87**:712-722 <http://dx.doi.org/10.1111/cdev.12525>.
31. D'Andrade RG: *The Development of Cognitive Anthropology*. New York, NY, USA: Cambridge University Press; 1995 <http://dx.doi.org/10.1017/CBO9781139166645>.

10 Early development of prosocial behavior

32. Yagmurlu B, Sanson A: **Parenting and temperament as predictors of prosocial behaviour in Australian and Turkish Australian children.** *Aust J Psychol* 2009, **61**:77-88 <http://dx.doi.org/10.1080/00049530802001338>.
33. Paiva ND: **South Asian parents' constructions of praising their children.** *Clin Child Psychol Psychiatry* 2008, **13**:191-207 <http://dx.doi.org/10.1177/1359104507088342>.
34. Raj SP, Raval VV: **Parenting and family socialization within a cultural context.** In *Social. Theor. Process. Impact.* Edited by Anderson EL, Thomas S. New York, NY, USA: Nova Science Publishers, Inc.; 2013:57-78.
35. Rao N, McHale JP, Pearson E: **Links between socialization goals and child-rearing practices in Chinese and Indian mothers.** *Infant Child Dev* 2003, **12**:475-492 <http://dx.doi.org/10.1002/icd.341>.
36. Wang YZ, Wiley AR, Chiu C-Y: **Independence-supportive praise versus interdependence-promoting praise.** *Int J Behav Dev* 2008, **32**:13-20 <http://dx.doi.org/10.1177/0165025407084047>.
37. Keller H, Kärtner J: **Development: the cultural solution of universal developmental tasks.** In *Adv. Cult. Psychol.*, vol 3. Edited by Gelfand MJ, Chiu C, Hong Y. New York, NY, USA: Oxford University Press; 2013:63-116 <http://dx.doi.org/10.1093/acprof:oso/9780199930449.003.0002>.
38. Lancy DF: **The chore curriculum.** In *Work. Learn. Afr. Child.* Edited by Spittler G, Bourdillion M. Berlin: Lit Verlag; 2012:23-57.
39. Graves NB, Graves TD: **The cultural context of prosocial development: an ecological model.** In *Nat. Prosocial Dev. Interdiscip. Theor. Strateg.* Edited by Bridgeman DL. New York, NY, USA: Academic Press; 1983:243-264.
40. Ochs E, Izquierdo C: **Responsibility in childhood: three developmental trajectories.** *Ethos* 2009, **37**:391-413 <http://dx.doi.org/10.1111/j.1548-1352.2009.01066.x>.
41. Whiting BB, Edwards CP: **Learning prosocial behavior.** *Child. Differ. Worlds Form. Soc. Behav.* Cambridge, MA, USA: Harvard University Press; 1988, 159-197.
42. Whiting BB, Whiting JWM: *Children of Six Cultures: A Psycho-Cultural Analysis.* Cambridge, MA, USA: Harvard University Press; 1975.
43. de Guzman Rosario MT, Carlo G, Edwards CP: **Prosocial behaviors in context: examining the role of children's social companions.** *Int J Behav Dev* 2008, **32**:522-530 <http://dx.doi.org/10.1177/0165025408095557>.
44. de Guzman Rosario MT, Edwards CP, Carlo G: **Prosocial behaviors in context: a study of the Gikuyu children of Ngecha, Kenya.** *J Appl Dev Psychol* 2005, **26**:542-558 <http://dx.doi.org/10.1016/j.appdev.2005.06.006>.
45. Alcalá L, Rogoff B, Mejia-Arauz R, Coppens AD, Dexter AL: **Children's initiative in contributions to family work in Indigenous-heritage and cosmopolitan communities in Mexico.** *Hum Dev* 2014, **57**:96-115 <http://dx.doi.org/10.1159/000356763>.
46. Coppens AD, Alcalá L, Rogoff B, Mejia-Arauz R: **Children's contributions in family work: two cultural paradigms.** In *Fam. Intergenerationality Peer Group Relat.* Edited by Punch S, Vanderbeck R, Skelton T. Singapore: Springer Singapore; 2016:1-27 http://dx.doi.org/10.1007/978-981-4585-92-7_11-1.
47. Richerson PJ, Boyd R: *Not By Genes Alone: How Culture Transformed Human Evolution.* Chicago: University of Chicago Press; 2005.
48. Köster M, Schuhmacher N, Kärtner J: **A cultural perspective on prosocial development.** *Hum Ethol Bull* 2015:71-82.
49. van de Vijver F: **Methodological aspects of cross-cultural research.** In *Handb. Adv. Cult. Psychol.*, vol 5. Edited by Gelfand MJ, Chiu C-Y, Hong Y-Y. New York, NY, USA: Oxford University Press; 2015:101-160 <http://dx.doi.org/10.1093/acprof:oso/9780190218966.003.0003>.