



Understanding prosocial development in the context of systemic inequalities in the US and worldwide

Emma Armstrong-Carter^{a,*}, Eva H. Telzer^b

^a Graduate School of Education, Stanford University, 520 Galvez Mall, Stanford, CA 94305, United States

^b Department of Psychology & Neuroscience, University of North Carolina at Chapel Hill, United States

ARTICLE INFO

Keywords:

Prosocial behavior

Equity

Child development

Low-and middle- income countries

ABSTRACT

Across psychology, there is increasing recognition that the experiences of children from minoritized racial and ethnic groups are underrepresented. Research on prosocial behavior exemplifies this systemic bias. This paper suggests that measures of prosocial behavior should be revised to be more culturally equitable, in order to reflect the experiences of youth across diverse communities. First, the authors briefly review literature on prosocial development in high-income countries. The authors advocate for revising measures to capture greater variability in the experiences of children from marginalized groups, and interpreting research findings in the context of systemic inequalities. Next, the authors review research on prosocial behavior in low- and middle-income countries (LMICs), which is limited but growing, and discuss next steps for future research on prosocial behavior in LMICs. The goal is to provide a specific research agenda to advance the understanding of prosocial development across contexts and communities worldwide.

Every day across the globe, children help, share, cooperate, listen, advise, and support their friends, siblings, parents, extended family members, strangers, and wider communities. These prosocial behaviors take myriad forms, and vary according to individual differences in personality, development, family structure, community, and culture. As such, helping others is a universal activity (Weisner, 2001) that is nested in intersecting circles of children's and adolescents' broader lives, communities, and cultures (Bronfenbrenner and Morris, 2007). Although the majority of research about children's prosocial development comes from White, Educated, Industrialized, Rich, and Democratic (WEIRD) samples in high-income countries, 82% of children worldwide live in low- and middle-income countries (LMICs; Newhouse et al., 2016). Moreover, within high-income countries, the number of children raised in low-income communities and from minoritized racial and ethnic groups is growing (Pew Research Center, 2020).

This paper builds on recent calls to recognize the experiences of all children, particularly children from minoritized racial and ethnic groups who are underrepresented in research (Roberts et al., 2020; Syed et al., 2018). The authors argue that the field's current understanding of prosocial behavior is confounded by systemic inequalities that exist between children, both *within* high-income countries and *between* high-income and LMICs. To help to address this problem, this paper first discusses how systemic inequalities are reflected in research about children's prosocial behavior in high-income countries. Building on the work of others (e.g. El Mallah, 2020; Fuligni et al., 2019), the authors suggest

that methods examining prosocial behavior should be revised to capture greater variability in the diverse ways that children contribute in communities that are low-income or minoritized racial and ethnic groups. As context, this paper provides only a brief, general overview of prosocial behavior in high-income countries, given the already extensive reviews on this topic (e.g., Eisenberg et al., 2015; El Mallah, 2020). Second, this paper provides a more in-depth, detailed discussion of children's prosocial behavior in LMICs—where relatively less research has been conducted. Throughout the paper, the authors propose key next steps for extending existing measures to capture experiences that are increasingly relevant for children and adolescents from minoritized racial and ethnic groups or from low-income homes in the US and across the world. The goal is to offer a specific research agenda to advance an understanding of prosocial development that is more equitable and captures greater variability in children's prosocial development worldwide.

Prosocial research and systematic inequalities in high-income countries

Helping others is a distinctive feature of children and adolescents' daily lives around the world (Weisner, 2001). Prosocial behavior is any action which helps or supports others. It takes myriad forms, including helping the family and peers with instrumental tasks (e.g., cleaning, lending an item), providing emotional support (e.g., listening, advising), helping strangers and the wider community (e.g., donating, volunteer-

* Corresponding author.

E-mail address: emmaac@stanford.edu (E. Armstrong-Carter).

ing). Research predominantly from high-income countries demonstrates that youth who display high levels of prosocial behavior towards their friends (such as sharing and cooperating) exhibit more positive social, emotional, academic and physical health outcomes (Eisenberg et al., 2015).

The field of psychology is increasingly recognizing that “dominant (methodological) practices overlook, silence, or dismiss knowledge” about children from minoritized racial and ethnic groups (Roberts et al., 2020). Research on prosocial behavior is no exception. This paper argues that systematic inequalities are manifested in prosocial research in at least three ways. First, the majority of research on prosocial behavior has been conducted among children in WEIRD samples in high-income countries (Eisenberg et al., 2015), and children from minoritized racial and ethnic groups and from low-income communities are underrepresented in developmental research (Roberts et al., 2020). Second, more research is needed to investigate the predictors and consequences of prosocial behavior in the context of different community norms and values within high-income countries. Specific helping behaviors may be more common among some sociocultural groups than others (Weisner, 2001), and prosocial behavior has been divergently linked to children’s outcomes (e.g., emotional, academic adjustment) depending on the cultural norms in the home and wider community (e.g., Fuligni et al., 2009). Third, research findings pertaining to prosocial behavior should be more often explained and discussed in the context of systemic inequalities between children.

Revising existing measures to capture greater variability in high income countries

The experiences of youth from minoritized racial and ethnic groups and youth in low-income communities are underrepresented in prosocial research. On the one hand, an important body of research has examined prosocial behavior among adolescents in Latinx communities (e.g., Carlo et al., 2018) and Chinese-American communities (e.g., Fuligni et al., 2002). On the other hand, many other studies focus on the experiences of children and families that are WEIRD (El Mallah, 2019). For example, most commonly used measures of prosocial behavior (El Mallah, 2020) do not include items about translating for family, which is a form of prosocial behavior; many first- and second-generation youth help their families by translating for them at institutional or medical services and facilities (Kam and Lazarevic, 2014). As another example, general measures of prosocial behavior often do not measure caretaking behaviors (e.g., helping parents with household tasks; taking care of elderly or sick family members), which are more common in Latinx households and low-income homes (Armstrong-Carter et al., 2019). Children from low-income backgrounds may also contribute to the family by earning wages outside the home (Bridgeland et al., 2006), which is often not captured in prosocial measures. More research is needed to examine variability of prosocial behaviors within different cultural groups in the US. Such work can improve the accuracy and clarify the generalizability of research findings across diverse homes and community contexts.

Prosocial behavior may divergently relate to other aspects of youths’ functioning, depending on the different cultural norms of families and communities (for a review, see Eisenberg et al., 2015). For instance, youth from Chinese and Mexican backgrounds tend to value family obligation more than youth from European backgrounds, so helping the family may be more intrinsically rewarding and beneficial for youth from Chinese and Mexican backgrounds (Fuligni et al., 2009). Additionally, youth from dominant, privileged groups may feel more safe and comfortable helping their peers, or empowered speaking up for their peers, compared to youth from marginalized groups (Armstrong-Carter and Telzer, 2021). Finally, youth can show positive adaptation on behavioral and emotional measures while simultaneously experiencing risk factors via markers of stress-physiology that predict poor physical health and allostatic load (Hostinar and Miller, 2019). Prosocial behavior may be psychologically rewarding (Armstrong-Carter et al., 2020), while simul-

taneously physiologically taxing for youth who experience more pressure to care for their families or peers, or face daily discrimination (Armstrong-Carter et al. in press; Hostinar and Miller, 2019). More research is needed to understand how prosocial behavior impacts youths’ adjustment in diverse homes and community contexts with different social and cultural norms, and youth from different backgrounds who have different daily experiences in order to investigate whether prosocial behaviors are more or less beneficial in contexts where different amounts of such behavior are expected or normal.

Interpret findings in the context of systemic inequalities in high income countries

Systemic inequalities influence children’s opportunities and access to engage in prosocial behavior as well as their motivations for prosocial behavior (Fuligni, 2019). Researchers need to interpret findings about prosocial behavior in the context of systemic inequalities that exist within high-income countries. First, many youth from higher-income communities have more opportunities to give than others via formal volunteer opportunities and educational programs. For instance, prosocial acts are often directed towards the less fortunate. Low-income children may be more likely to receive food from food kitchens rather than volunteering in the kitchen, for example. Similarly, youth from rural environments may not have access to as many formal, school-based or afterschool volunteering programs which facilitate mentorship and other forms of prosocial behavior. Low-income children might be pegged as the “mentees,” rather than the mentors. These inequities are important because *engaging* in prosocial behavior (not just receiving it) is a crucial component of children’s self-efficacy, identity development, and socioemotional, physical, and academic wellbeing (Fuligni et al., 2019).

Second, prosocial motivation may differ according to cultural and socioeconomic contexts. Many high-SES adolescents volunteer in order to increase chances of college admission, which is a privilege; formal volunteerism may not be feasible for low-income youth who may need to support family or have limited financial resources or supports for applying to and attending college. Moreover, low-income youth who are more burdened by daily worries about their family’s wellbeing may be less able to give to others, because they need to focus on their own family’s emotional and material needs. For instance, if youth are worried about feeding the family or making money to support their family, they may have less time for volunteer work or helping friends or strangers (Bridgeland et al., 2006). At the same time, a growing number of studies have highlighted civic engagement and social justice movements led by minoritized youth as examples of how they engage in important types of prosocial behavior, even as they may be denied the opportunities in other aspects of their lives (Anyiwo et al., 2020). Researchers should interpret their research findings in the context of systemic inequalities.

Prosocial behavior in low- and middle-income countries (LMICS)

Existing measures of childrens’ and adolescents’ prosocial behaviors primarily come from high-income countries (Eisenberg et al., 2015; El Mallah, 2020), and underrepresent the experiences of the majority of children worldwide who live in low- and middle-income countries (LMICS). More research on the prosocial behavior of children in LMICS will facilitate a more accurate and comprehensive picture of prosocial development worldwide.

Prosocial development in LMICS

Most research in LMICS has used a single, broad composite of social functioning; relatively little research in LMICS has examined prosocial behavior specifically (Katus et al., 2020). For instance, using a single, parent-report measure of a broad range of social behaviors (e.g., peer relationships, socio-emotional skills), children in Cambodia and in Ghana demonstrated positive growth in social behavior from ages 3 to 6

(Berkes et al., 2019; Wolf and McCoy, 2019). Positive, stimulating home and school experiences were also positively linked to young children's broad social skills (including communication, social and emotional competences) in rural India, Indonesia, Peru, and Senegal (Fernald et al., 2012), Colombia (Rubio-Codina et al., 2016), Bangladesh and Pakistan (Hamadani et al., 2006; Yousafzai et al., 2016, 2014).

Nonetheless, research specifically on prosocial behavior in LMICS is increasing (Katus et al., 2020). For example, the global pandemic prompted several qualitative studies which revealed that young people in Kenya helped strangers in their local communities to cope with the pandemic, and young people in Cameroon started producing hand sanitizers at home and freely distributing them (Wickramanayake, 2020). A recent review identified 20 studies focused on prosocial development in LMICs (Katus et al., 2020). The majority of LMIC studies have used direct assessments of prosocial behavior (i.e., laboratory tasks), whereas research from high income countries primarily use self, parent, and teacher reports (El Mallah, 2020). For example, several studies in India, China, and South Africa used the "Dictator Game," an experimental task in which children can share different amounts of money with peers (Chen and Ravallion, 2013; Cowell et al., 2017). Other studies used similar resource allocation paradigms across LMICS (House et al., 2013), including tasks which involve sharing food in China, Peru, Fiji, and Brazil (Rochat et al., 2009), sharing books in South Africa (Murray et al., 2015), or providing instrumental or emotional support to another person in Zambia (Chernyak et al., 2018). Only a few studies have used teacher report, for instance in Jamaica (Baker-Henningham et al., 2019), Chile (Lohndorf et al., 2019), and Zimbabwe (Manyeruke et al., 2020), perhaps because access to formal education and teachers is often limited in LMIC settings (Finch et al., 2018). A few studies used parent report among children in Columbia, Pakistan, and South Africa (Finch et al., 2018; Hamadani et al., 2010; Parchment et al., 2016).

Expanding existing measures to capture greater variability in LMICS

There is a need to understand which measures of prosocial behavior are ecologically valid for children in LMICS. As other researchers have highlighted, it is problematic to simply translate measures, because expectations for children's behaviors differ across cultures (Finch et al., 2018). For example, obedient behaviors are not as highly valued in Western countries compared to LMICS, which tend to be more group-oriented (Keller, 2020). In one study, factor analysis indicated that prosocial behaviors in rural Pakistan included how obedient the child was, in addition to kindness and likeability; obedience is not necessarily considered prosocial in high-income Western cultures, and therefore not included in prosocial measures (Finch et al., 2018). As another example, parents in western Kenya reported that children who willingly helped with daily household chores (e.g., cooking, growing food, caring for animals and siblings) demonstrated intelligence through these tasks (Harkness et al., 2009). In contrast, Western cultures typically consider prosocial behavior as separate and unrelated to intelligence (Olson et al., 2019). These findings demonstrate that children's helping behaviors (and parents' beliefs about children's helping behaviors) are situated in their cultures (Olson et al., 2019). More research which measures youths' prosocial behavior in culturally valid ways in LMICS can illuminate important variability in prosocial behaviors worldwide.

Prosocial behavior during adolescence in LMICS

The majority of research in LMICS focuses on early childhood. While LMIC studies include children as young as 18 months (e.g., Köster et al., 2016, Brazil), no known studies have investigated prosocial behavior during adolescence after age 14 in LMICS. The oldest age ranges were up to 13–14 years in South Africa, India, and Zimbabwe (Corbit et al., 2017; Manyeruke et al., 2020; Parchment et al., 2016). Studying prosocial behavior during adolescence in LMICS is particularly important because many adolescents serve as caregivers for younger siblings, parents, and

other family and community members (Becker, 2007). Caregiving during adolescence in LMICS may be particularly common due to cultural norms of familialism and community orientation, high average levels of poverty which restrict access to formal caregiving, medical services for sick or aging adults, and increased prevalence of illness which require caregiving (e.g., Yu et al., 2013). Limited access to formal education for young children also creates conditions in which older siblings often serve as caregivers (Becker, 2007). More research investigating prosocial behavior during adolescence is warranted to understand the variability in prosocial behavior in LMICS, and how it impacts youth development.

School experiences and prosocial development in LMICS

Extensive research from high-income countries shows that access to formal education, in addition to home experiences, is crucial for promoting children's positive social development (for a review, see Domitrovich et al., 2017). In LMICS, access to primary education is often limited, although it has increased over the last two decades (UNICEF, 2017). Prior research in LMICS has largely focused on cognitive and academic outcomes (Rao et al., 2014), so researchers know little about how education impacts prosocial behavior in LMICS. In one study in Mozambique, children who were randomly assigned to attend preschool demonstrated higher levels of prosocial behavior at follow up during primary school, as assessed by parent and teacher reports (Martinez et al., 2017). In Indonesia, Chile, and Cambodia, observer ratings of classroom and school facilities (e.g., latrines, safe schoolyards and classrooms), were positively associated with broad measures of teacher reported positive social behaviors, although these studies also did not focus on prosocial behavior specifically (e.g., Berkes et al., 2019; Brinkman et al., 2017; Herrera et al., 2005). More research is needed to understand how access to formal education and school experiences are related to prosocial development in LMICS. Associations between school experiences and prosocial behavior will likely depend on the measure of prosocial behavior. For example, youth who attend formal education may learn to engage in more prosocial behavior towards peers, but have fewer opportunities to help their families at home.

Conclusion

To mitigate the systematic inequalities which are reflected in current prosocial measurements, samples, and paper discussions, researchers on prosocial behavior can take four specific actions. First, research will benefit from conducting focus groups with minoritized children and adolescents in high income countries, and children and adolescents in LMICS. Targeted focus groups can reveal which prosocial behaviors youth engage in most frequently, and how. Similarly, targeted focus groups among these youths' parents may provide an additional perspective, and moreover, illuminate which behaviors are culturally valued and conceptualized as prosocial in different home and community contexts. These focus groups will help to ensure the development of new prosocial measures are not biased by researchers' own experiences or by the prior research that has been done in predominantly WEIRD samples to date.

Second, cross-cultural studies—with differences in ethnicity, race, socioeconomic status rural/urban, religious, national makeup—can help to identify and clarify similarities and differences in the frequency and types of prosocial behaviors youth engage in across different contexts. Moreover, cross-cultural studies may reveal how prosocial behaviors may differentially impact child and adolescent well-being based on cultural values and norms. Importantly, such an approach must be grounded in a process-based framework, which highlights heterogeneity within groups, and does not only focus on mean-level differences and comparisons between groups (Syed et al., 2018). Where there are differences in prosocial behavior between groups, research findings must be explicitly interpreted in the context of the societal bias towards

marginalized groups which has contributed to those group differences (e.g., access to opportunities, double burden of racism).

Third, even research on prosocial behavior which is conducted among WEIRD samples must include careful detailed demographics, frame the research findings within the sample, discuss potential bias of the measures and methodologies used, and not attempt to generalize findings to all youth. This approach will help to ensure that the true diversity of prosocial behavior world-wide is acknowledged and represented. Finally, involving local stakeholders via research practice partnerships (including youth, teachers, parents, community leaders) in all stages of the research processes can help to researchers to prioritize the knowledge and needs of local communities. Local stakeholder can also provide critical insight into the research context and interpretation of findings, and researchers can promote the practical implications of their work by “giving back” and involving the community in which the research is conducted. Together, these steps can help to paint a fuller picture of prosocial development across the globe. Moreover, research guided by these principals may enable researchers and policy makers to begin to reduce inequalities in children’s helping behaviors between children, communities, and hemispheres.

Data availability

Because this review article does not use data or code, the data availability statement is not applicable. All supporting literature materials are available from the authors upon request.

Declaration of Competing Interest

This original article has not been submitted to any other journals. We have no conflicts of interest to declare.

Acknowledgments

The preparation of this article was supported by (1) a National Institutes of Health Grant (R01DA039923) to Eva H. Telzer, (2) a doctoral fellowship to Emma Armstrong-Carter funded by the Institute of Education Sciences, U.S. Department of Education, through Grant R305B140009 to the Board of Trustees of the Leland Stanford Junior University and (3) a Stanford Data Science Fellowship awarded to Emma Armstrong-Carter.

References

Anyiwo, N., Palmer, G.J., Garrett, J.M., Starck, J.G., Hope, E.C., 2020. Racial and political resistance: an examination of the sociopolitical action of racially marginalized youth. *Curr. Opin. Psychol.* 35, 86–91. doi:10.1016/j.copsyc.2020.03.005.

Armstrong-Carter, E., Guassi Moreira, J.F., Ivory, S.L., Telzer, E.H., 2020. Daily links between helping behaviors and emotional well-being during late adolescence. *J. Res. Adolesc.* 30(1), 12572. doi:10.1111/jora.12572.

Armstrong-Carter, E., Olson, E., Telzer, E., 2019. A unifying approach for investigating and understanding youth’s help and care for the family. *Child Dev. Perspect.* 13(3), 186–192. doi:10.1111/cdep.12336.

Armstrong-Carter, E., Siskowski, C., Belkowitz, C., Johnson, C., & Olson, E. (in press). The United States should recognize and support caregiving youth. SRCD Policy Reports.

Armstrong-Carter, E., Telzer, E.H., 2021. Advancing measurement and research on youths’ prosocial behavior in the digital age. *Child Dev. Perspect.* 15(1), 31–36. doi:10.1111/cdep.12396.

Baker-Henningham, H., Scott, Y., Bowers, M., Francis, T., 2019. Evaluation of a violence-prevention programme with Jamaican primary school teachers: a cluster randomised trial. *Int. J. Environ. Res. Public Health* 16(15), 2797. doi:10.3390/ijerph16152797.

Becker, S., 2007. Global perspectives on children’s unpaid caregiving in the family: research and policy on ‘young carers’ in the UK, Australia, the USA and Sub-Saharan Africa. *Glob. Soc. Policy* 7(1), 23–50. doi:10.1177/1468018107073892.

Berkes, J., Bouguen, A., Filmer, D., Fukao, T., 2019. Improving Preschool Provision and Encouraging Demand: Heterogeneous Impacts of a Large-Scale Program. *The World Bank* doi:10.1596/1813-9450-9070.

Bridgeland, J.M., Dilulio, J.J., Burke Morison, K., 2006. *The Silent Epidemic: Perspectives of High School Dropouts.* Civic Enterprises.

Brinkman, S.A., Hasan, A., Jung, H., Kinnell, A., Nakajima, N., Pradhan, M., 2017. The role of preschool quality in promoting child development: evidence from rural Indonesia. *Eur. Early Child. Educ. Res. J.* 25(4), 483–505. doi:10.1080/1350293X.2017.1331062.

Bronfenbrenner, U., Morris, P.A., 2007. The bioecological model of human development. In: Damon, W., Lerner, R.M. (Eds.), *Handbook of Child Psychology.* John Wiley & Sons, Inc., Hoboken, NJ, USA doi:10.1002/9780470147658.chpsy0114.

Carlo, G., White, R.M., Streit, C., Knight, G.P., Zeiders, K.H., 2018. Longitudinal relations among parenting styles, prosocial behaviors, and academic outcomes in US Mexican adolescents. *Child development* 89(2), 577–592. doi:10.1111/cdev.12761.

Chen, S., Ravallion, M., 2013. More relatively-poor people in a less absolutely-poor world. *Rev. Income Wealth* 59(1), 1–28. doi:10.1111/j.1475-4991.2012.00520.x.

Chernyak, N., Harvey, T., Tarullo, A.R., Rockers, P.C., Blake, P.R., 2018. Varieties of young children’s prosocial behavior in Zambia: the role of cognitive ability, wealth, and inequality beliefs. *Front. Psychol.* 9, 2209. doi:10.3389/fpsyg.2018.02209.

Corbit, J., McAuliffe, K., Callaghan, T.C., Blake, P.R., Warneken, F., 2017. Children’s collaboration induces fairness rather than generosity. *Cognition* 168, 344–356. doi:10.1016/j.cognition.2017.07.006.

Cowell, J.M., Lee, K., Malcolm-Smith, S., Selcuk, B., Zhou, X., Decety, J., 2017. The development of generosity and moral cognition across five cultures. *Dev. Sci.* 20(4), e12403. doi:10.1111/desc.12403.

Domitrovich, C.E., Durlak, J.A., Staley, K.C., Weissberg, R.P., 2017. Social-emotional competence: an essential factor for promoting positive adjustment and reducing risk in school children. *Child Dev.* 88(2), 408–416. doi:10.1111/cdev.12739.

Eisenberg, N., Spinrad, T.L., Knafo-Noam, A., 2015. *Handbook of child psychology and developmental science: socioemotional processes*, chap. Prosoc. Dev. 610–656.

El Mallah, S., 2020. Conceptualization and measurement of adolescent prosocial behavior: looking back and moving forward. *J. Res. Adolesc.* 30(S1), 15–38. doi:10.1111/jora.12476.

Fernald, L.C.H., Kariger, P., Hidrobo, M., Gertler, P.J., 2012. Socioeconomic gradients in child development in very young children: evidence from India, Indonesia, Peru, and Senegal. *Proc. Natl. Acad. Sci.* 109(Supplement_2), 17273–17280. doi:10.1073/pnas.1121241109.

Finch, J.E., Yousafzai, A.K., Rasheed, M., Obradović, J., 2018. Measuring and understanding social-emotional behaviors in preschoolers from rural Pakistan. *PLoS ONE* 13(11), e0207807.

Fulgini, A.J., Yip, T., Tseng, V., 2002. The impact of family obligation on the daily activities and psychological wellbeing of Chinese American adolescents. *Child development* 73(1), 302–314. doi:10.1111/1467-8624.00407.

Fulgini, A.J., 2019. The need to contribute during adolescence. *Perspect. Psychol. Sci.* 14(3), 331–343. doi:10.1177/1745691618805437.

Fulgini, A.J., Bai, S., Krull, J.L., Gonzales, N.A., 2019. Individual differences in optimum sleep for daily mood during adolescence. *J. Clin. Child Adolesc. Psychol.* 48(3), 469–479. doi:10.1080/15374416.2017.1357126.

Fulgini, A.J., Telzer, E.H., Bower, J., Irwin, M.R., Kiang, L., Cole, S.W., 2009. Daily family assistance and inflammation among adolescents from Latin American and European backgrounds. *Brain Behav. Immun.* 23(6), 803–809. doi:10.1016/j.bbi.2009.02.021.

Hamadani, J.D., Tofail, F., Hilaly, A., Huda, S.N., Engle, P., Grantham-McGregor, S.M., 2010. Use of family care indicators and their relationship with child development in Bangladesh. *J. Health Popul. Nutr.* 28, 23–33.

Hamadani, Jena D., Huda, S.N., Khatun, F., Grantham-McGregor, S.M., 2006. Psychosocial stimulation improves the development of undernourished children in rural Bangladesh. *J. Nutr.* 136(10), 2645–2652. doi:10.1093/jn/136.10.2645.

Harkness, S., Super, C.M., Barry, O., Zeitlin, M., Long, J., Sow, S., 2009. Assessing the environment of children’s learning: the developmental niche in Africa. *Multicult. Psychoeduc. Assess.* 133–155.

Herrera, M.O., Mathiesen, M.E., Merino, J.M., Recart, I., 2005. Learning contexts for young children in Chile: process quality assessment in preschool centres. *Int. J. Early Years Educ.* 13(1), 13–27. doi:10.1080/09669760500048253.

Hostinar, C.E., Miller, G.E., 2019. Protective factors for youth confronting economic hardship: current challenges and future avenues in resilience research. *Am. Psychol.* 74(6), 641–652. doi:10.1037/amp0000520.

House, B.R., Silk, J.B., Henrich, J., Barrett, H.C., Scelza, B.A., Boyette, A.H., Laurence, S., 2013. Ontogeny of prosocial behavior across diverse societies. *Proc. Natl. Acad. Sci.* 110(36), 14586–14591. doi:10.1073/pnas.1221217110.

Kam, J.A., Lazarevic, V., 2014. The stressful (and not so stressful) nature of language brokering: identifying when brokering functions as a cultural stressor for latino immigrant children in early adolescence. *J. Youth Adolesc.* 43(12), 1994–2011. doi:10.1007/s10964-013-0061-z.

Katus, L., McHarg, G., & Hughes, C. (2020). Early prosocial development: a systematic review of evidence to support the integration of neurocognitive and cross cultural methods [Preprint]. *PsyArXiv*. doi: 10.31234/osf.io/njfea

Keller, H., 2020. Children’s socioemotional development across cultures. *Annu. Rev. Dev. Psychol.* 2(1), 27–46. doi:10.1146/annurev-devpsych-033020-031552.

Köster, M., Cavalcante, L., Vera Cruz de Carvalho, R., Dôgo Resende, B., Kärtner, J., 2016. Cultural influences on toddlers’ prosocial behavior: how maternal task assignment relates to helping others. *Child Dev.* 87(6), 1727–1738. doi:10.1111/cdev.12636.

Lohndorf, R.T., Vermeer, H.J., Cárcamo, R.A., De la Harpe, C., Mesman, J., 2019. Preschoolers’ problem behavior, prosocial behavior, and language ability in a Latin-American context: the roles of child executive functions and socialization environments. *Early Child. Res. Q.* 48, 36–49. doi:10.1016/j.ecresq.2019.02.005.

Manyeruke, G., Çerkez, Y., Kiraz, A., Çakıcı, E., 2020. Attachment, psychological wellbeing and educational development among child members of transnational families. *Anatol. J. Psychiatry* 21(0), 1. doi:10.5455/apd.106486.

Martinez, S., Naudeau, S., Pereira, V., 2017. *Preschool and Child Development under Extreme Poverty: Evidence from a Randomized Experiment in Rural Mozambique.* The World Bank.

Murray, D.W., Rosanbalm, K., Christopoulos, C., Hamoudi, A., 2015. *Self-Regulation and Toxic stress: Foundations for Understanding Self-Regulation from an Applied Devel-*

- opment Perspective. Center for Child and Family Policy, Duke University, Durham, NC (No. OPRE Report #2015-21; pp. 1–35).
- Newhouse, D., Suarez-Becerra, P., Evans, M.C., & Data for Goals Group. (2016). New estimates of extreme poverty for children.
- Olson, S.L., Lansford, J.E., Evans, E.M., Blumstein, K.P., Ip, K.I., 2019. Parents' ethnotheories of maladaptive behavior in young children. *Child Dev. Perspect.* 13 (3), 153–158. doi:10.1111/cdep.12330.
- Parchment, T.M., Small, L., Osuji, H., McKay, M., Bhana, A., 2016. Familial and contextual influences on children's prosocial behavior: south African caregivers as adult protective shields in enhancing child mental health. *Glob. Soc. Welf.* 3 (1), 1–10. doi:10.1007/s40609-016-0042-8.
- Pew Research Center. (2020). Facts on U.S. immigrants, 2018. Retrieved from <https://www.pewresearch.org/hispanic/2020/08/20/facts-on-u-s-immigrants/>.
- Rao, N., Sun, J., Wong, J.M., Weekes, B., Ip, P., Shaeffer, S., ... Lee, D. (2014). Early childhood development and cognitive development in developing countries: a rigorous literature review. (No. 2208). Department for International Development. Retrieved from Department for International Development website: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/469088/early-childhood-cognitive-dev.pdf.
- Roberts, S.O., Bareket-Shavit, C., Dollins, F.A., Goldie, P.D., Mortenson, E., 2020. Racial inequality in psychological research: trends of the past and recommendations for the future. *Perspect. Psychol. Sci.* doi:10.1177/1745691620927709, 174569162092770.
- Rochat, P., Dias, M.D.G., Broesch, T., Passos-Ferreira, C., Winning, A., Berg, B., 2009. Fairness in distributive justice by 3- and 5-year-olds across seven cultures. *J. Cross Cult. Psychol.* 40 (3), 416–442. doi:10.1177/0022022109332844.
- Rubio-Codina, M., Attanasio, O., Grantham-McGregor, S., 2016. Mediating pathways in the socio-economic gradient of child development: evidence from children 6–42 months in Bogota. *Int. J. Behav. Dev.* 40 (6), 483–491. doi:10.1177/0165025415626515.
- Syed, M., Santos, C., Yoo, H.C., Juang, L.P., 2018. Invisibility of racial/ethnic minorities in developmental science: implications for research and institutional practices. *Am. Psychol.* 73, 812–826. doi:10.1037/amp0000294.
- UNICEF. (2017). Situation analysis of children in Pakistan. Retrieved from <https://www.unicef.org/pakistan/sites/unicef.org.pakistan/files/2019-07/Annual%20Report%20Revised%20PDF%20%281%29.pdf>.
- Weisner, T.S., 2001. Children investing in their families: the importance of child obligation in successful development. *New Dir. Child Adolesc. Dev.* 94, 77–83. doi:10.1002/cd.32.
- Wickramanayake, J. (2020). Meet 10 young people leading the COVID-19 response in their communities. Retrieved from <https://www.un.org/africarenewal/web-features/coronavirus/meet-10-young-people-leading-covid-19-response-their-communities>.
- Wolf, S., McCoy, D.C., 2019. Household socioeconomic status and parental investments: direct and indirect relations with school readiness in Ghana. *Child Dev.* 90 (1), 260–278. doi:10.1111/cdev.12899.
- Yousafzai, A.K., Obradović, J., Rasheed, M.A., Rizvi, A., Portilla, X.A., Tirado-Strayer, N., Memon, U., 2016. Effects of responsive stimulation and nutrition interventions on children's development and growth at age 4 years in a disadvantaged population in Pakistan: a longitudinal follow-up of a cluster-randomised factorial effectiveness trial. *Lancet Glob. Health* 4 (8), e548–e558.
- Yousafzai, A.K., Rasheed, M.A., Rizvi, A., Armstrong, R., Bhutta, Z.A., 2014. Effect of integrated responsive stimulation and nutrition interventions in the Lady Health Worker Programme in Pakistan on child development, growth, and health outcomes: a cluster-randomised factorial effectiveness trial. *Lancet North Am. Ed.* 384 (9950), 1282–1293. doi:10.1016/S0140-6736(14)60455-4.
- Yu, Y., Li, X., Zhang, L., Zhao, J., Zhao, G., Zheng, Y., Stanton, B., 2013. Domestic chores workload and depressive symptoms among children affected by HIV/AIDS in China. *AIDS Care* 25 (5), 632–639. doi:10.1080/09540121.2012.722603.