

The Emergence of Social Adaptation: How Children (and other Primates) Learn and Apply Social Norms to Navigate the World More Efficiently

Oded Ritov, oded.ritov@berkeley.edu

Jan Engelmann, jan_engelmann@berkeley.edu

Department of Psychology, University of California, Berkeley

Charles Baxley, cbaxley@ucsc.edu

Early Social Interaction Lab, University of California, Santa Cruz

Mahesh Srinivasan, srinivasan@berkeley.edu

Institute of Human Development, University of California, Berkeley

Paula Fischer, paula.fischer@tum.de

Discussant: Daniil Serko, daniil.serko@tum.de

Department of Cognitive and Developmental Psychology, Technical University of Munich

Keywords: social norms; social adaptation; development; cognition; cross cultural; comparative cognition

Introduction

Successfully navigating the social world requires individuals to flexibly adapt their behavior to different situational demands. Yet, the social world is also governed by broad behavioral rules: norms that prescribe or proscribe behaviors in certain situations. This poses a particularly interesting problem for early development: learning the foundational structure of norms may require strict adherence, but effective social functioning involves flexibility. Here, we refer to the ability to flexibly navigate social norms as social adaptation.

Adaptive behavior emerges from the interplay between specific circumstances and individual capacities (Gigerenzer & Selten, 2001; Ruggeri, 2022). Investigating social adaptation from a developmental perspective can shed light on how young children begin to navigate the complexities of the social world. Social adaptation allows for more efficient and contextually sensitive behavior compared to rigid norm-following. However, balancing norm-following with situational flexibility presents unique challenges for the social agent.

Research suggests that by the age of 3 children begin to demonstrate a robust understanding of social norms as generic rules derived from broader concepts, applying these rules universally in relevant situations (Rakoczy & Schmidt, 2013). At the same time, they recognize the contextual nature of norms, understanding that behaviors deemed acceptable in some settings, such as games, may be inappropriate in others. This ability to acquire, interpret, and apply normative rules is shaped by socialization processes, including interactions with parents, peers, and broader cultural influences (Riggs & Young, 2016).

This symposium brings together comparative (including nonhuman animal studies), developmental, and cross-cultural perspectives to examine how flexibility in normative cognition emerges, enriching our understanding of how

children learn to navigate social norms dynamically:

Talk 1 lays the foundation by proposing that fairness norms arise from relationship-specific expectations, suggesting that social norms are deeply tied to context rather than absolute principles.

Talk 2 extends fairness norms beyond relationships to situations, examining children's flexible application of harm-related norms.

Talk 3 examines the emergence of religious norms cross-culturally, showing how children adapt them based on group membership.

Talk 4 explores the cognitive mechanisms underlying how children flexibly navigate rules, focusing on their ability to balance adherence with contextual demands.

Symposium Talks in Detail

Talk 1: Social Expectations and the Evolution of Fairness Norms We propose that relationship-specific social expectations—rather than generalized expectations for how one should be treated—are the basic cognitive building block of fairness norms. Fairness allows humans to cooperate efficiently by guiding the distribution of rewards. However, normative cognition is thought to be human-unique, despite cooperation being widespread in the animal kingdom. Uncovering the precursors of fairness in other species can therefore illuminate the evolutionary origins of fairness and normative thinking more broadly. We use two lines of evidence to advance this proposal. The first comes from a meta-analysis of studies on fairness in nonhuman animals. While prevailing theoretical accounts suggest that individuals in nonhuman species show an aversion to unequal treatment, studies investigating this question have delivered inconsistent results. We re-analyzed the data from over 60,000 trials of 23 different species. Our results are consistent with social expectations, rather than a concern with inequality per se, driving protest behavior. The second line of evidence comes from studies we ran in chimpanzees. We found that chimpanzees steal less from their friends

and tend to respond with more anger when their friends steal from them. These results are consistent with the role of interindividual expectations, rather than more complex cognitive mechanisms, in chimpanzee cooperation. Drawing from the developmental as well as comparative literatures, we will make the case that social expectations form the basis of normative thought, leading to the evolution of the flexible cognitive architecture we see in humans.

Talk 2: How Preschoolers Form Nuanced Moral Views About Physical Force Young children hit, shove, and kick others daily, often without provocation or signs of distress (Dahl & Freda, 2016; Tremblay et al., 2005). Even the average preschooler, who judges that hitting others is generally wrong, uses force against others far more often than the average adult. One possibility for children’s continual hitting is that children’s moral judgments are disconnected from their actions (Blake et al., 2014; Blasi, 1980). Another possibility is that preschoolers develop a nuanced morality of force, judging some acts of hitting as okay. This presentation examines this second possibility.

In Study 1, we coded naturalistic video recordings from 1.5-2 hour visits in local preschools, and we distinguished between severe and non-severe acts of force. In Study 2, 4- to 6-year-olds watched videos of naturally occurring force among preschoolers: Play, Property conflict, and Unprovoked. Children indicated whether the act in the video was okay, why/why not, and how the victim felt. Study 3 modified the design to make it easier for children to express their distinctions among force acts.

Our findings suggest that, by age six, preschoolers have constructed a nuanced morality of force; this nuanced moral sense allows them to separate permissible from impermissible acts of force based on, among other factors, perceptions of consequences to the victim. The study of children’s moral views about force are central to understanding the development of normativity, aggression, and the relations between judgments and actions.

Talk 3: Children’s developing differentiation of religious norms from other social norms: Insights from religious children and adults in Israel and India Religious norms—which regulate how one should eat, dress, pray, and more—provide children with frameworks for how to live their lives. Yet they can also challenge children’s thinking, particularly when the religious norms followed by one group are not followed by others living in the same society. Here, we investigate how children learn to differentiate religious norms (which can be thought of as applying only to followers of a religious group) from moral norms and social conventions (which can apply across groups). We recruited four groups of 6- to 9-year-old religious children and adults who are often exposed to another religion with different norms—Jews and Muslims in Israel, and Hindus and Muslims in India. Participants were presented with

vignettes in which protagonists from their ingroup and outgroup religion violated different kinds of norms. Overall, participants restricted their own religious norms to members of their own religious group more than they restricted conventional and moral norms. A similar pattern emerged when participants judged violations of religious norms from the outgroup. Younger children across communities were more likely than older participants to apply religious norms to followers of other religions, suggesting a progressive differentiation of religious norms from other norms between ages 6 and 9.

Talk 4: Navigating Rules with Flexibility: Developmental Insights into Adaptive Rule Understanding We present evidence from two preregistered experiments (data collection ongoing), in which we investigate how children evaluate different rule-following strategies and whether they recognize situations where deviating from rules may be more efficient. In both experiments, children observe agents (friendly aliens) traveling to different worlds, where a rule dictates how to act in specific situations. Agents follow one of three behaviors: flexible (adapting to context), rigid (strict adherence), or dangerous (ignoring rules). We examine how these behaviors influence children’s evaluations of the agents and their preferences for selecting them as their guides.

In Study 1, children are presented with either a busy or an empty road with a traffic light. Three agents display distinct behaviors: a flexible rule-following agent (i.e, crossing the red light on an empty road but adhering to the signal on a busy one), a rigid rule-following agent (always waiting for the green light), and a dangerous agent (never waiting). We predicted that children would rate the flexible agent most favorably and be more likely to select it as a guide to an unknown planet as their behavior was the most efficient one. However, contrary to our prediction, pilot data suggest that when selecting a guide for an unknown planet, children preferred the rigid agent, indicating an early appreciation for cautious rule adherence. This preference was also indicated by their ratings of the different agents: children rated the rigid agent to be the most reasonable one.

Study 2, extends these findings to arbitrary rules, where monsters must wear a warm hat when visiting a planet to avoid upsetting the local monster of this planet. As in Experiment 1, children observe either flexible (adapting to context — e.g. performing wearing a hat only in case of other monsters being present), rigid (strict adherence), or dangerous (ignoring rules) agents. We will measure how children rate the different agents and which agent they choose to guide them on an unknown planet. We predict that children will rate the flexible monster more favorably than the others and will select it more often as their guide. Data collection and analysis are expected to be completed by June 2025, and results will be presented at the conference.

References

- Blake, P. R., McAuliffe, K., & Warneken, F. (2014). The developmental origins of fairness: The knowledge–behavior gap. *Trends in Cognitive Sciences*, 18(11), 559–561. <https://doi.org/10.1016/j.tics.2014.08.003>
- Blasi, A. (1980). Bridging moral cognition and moral action: A critical review of the literature. *Psychological Bulletin*, 88(1), 1–45. <https://doi.org/10.1037/0033-2909.88.1.1>
- Dahl, A., & Freda, G. F. (2016). How young children come to view harming others as wrong: A developmental analysis. In *Social cognition*. Routledge.
- Gigerenzer, G., & Selten, R. (2001, February). *Bounded rationality: The adaptive toolbox*. The MIT Press. <https://www.doi.org/10.7551/mitpress/1654.001.0001>.
- Rakoczy, H., & Schmidt, M. F. H. (2013). The early ontogeny of social norms. *Child Development Perspectives*, 7(1), 17–21. <https://doi.org/10.1111/cdep.12010>
- Riggs, A. E., & Young, A. G. (2016). Developmental changes in children’s normative reasoning across learning contexts and collaborative roles. *Developmental Psychology*, 52(8), 1236–1246. <https://doi.org/10.1037/dev0000119>
- Ruggeri, A. (2022). An introduction to ecological active learning. *Current Directions in Psychological Science*. <https://doi.org/10/grbccz>
- Tremblay, R. E., Nagin, D. S., Séguin, J. R., Zoccolillo, M., Zelazo, P. D., Boivin, M., Pérusse, D., & Japel, C. (2005). Physical aggression during early childhood: Trajectories and predictors. *The Canadian Child and Adolescent Psychiatry Review = La Revue Canadienne De Psychiatrie De L'enfant Et De L'adolescent*, 14(1), 3–9.