AMERICAN PSYCHOLOGICAL ASSOCIATION

Journal of Experimental Psychology: General

ISSN: 0096-3445

2024, Vol. 153, No. 9, 2239–2257
https://doi.org/10.1037/xge0001567

The Haves and Have-Nots: Infants Use Wealth to Guide Social Behavior and Evaluation

Arianne E. Eason[1], Elizabeth A. Enright[2], Shimeng Weng[3], Rachel O. Horton[4], Miranda J. Sitch[5], and Jessica A. Sommerville[6]

[1] Department of Psychology, University of California, Berkeley
[2] Department of Psychology, St. Mary's College of Maryland
[3] Department of Applied Psychology, New York University
[4] Department of Psychology, Princeton University
[5] Prostate Cancer Research Program, Oregon Health and Sciences University Knight Cancer Institute, Portland, Oregon, United States
[6] Department of Psychology, University of Toronto

Biases favoring the wealthy are ubiquitous, and they support and bolster vast resource inequalities across individuals and groups; yet, when these biases are acquired remains unknown. In Experiments 1 through 5 (Total $N = 232$), using multiple methods, we found that 14- to 18-month-old infants track individuals' wealth (Experiments 1–5), prefer and selectively help rich (vs. poor) individuals (Experiments 2 and 3), and negatively evaluate poor individuals (Experiments 4 and 5). In two subsequent experiments with 11- to 13-month-old infants (Total $N = 65$), however, we find no evidence of preferences for rich (vs. poor) individuals (Experiment 6) or differential evaluations of rich and poor people (Experiment 7). Together, these results demonstrate that in the second year of life, wealth emerges as a central and robust dimension of evaluation that guides social decision making.

Public Significance Statement

Despite the fact that people prefer more equitable societies and distributions of resources across individuals, biases favoring the wealthy emerge within the second year of life. When considering the steps necessary to reduce wealth inequality and ameliorate its negative consequences, our data reveal that early-emerging wealth-based biases manifest as behavioral preferences for rich people, which seem to stem from negative evaluations of poor people rather than positive evaluations of rich people. Thus, undoing wealth inequality requires changing the way that people think about and act toward poor individuals early in life and designing interactions, institutions, and social structures that push against the early-emerging negative attitudes and behaviors directed toward poor individuals.

Keywords: infant development, social cognition, socioeconomic status, wealth

Supplemental materials: https://doi.org/10.1037/xge0001567.supp

Megan M. Saylor served as action editor.

Arianne E. Eason https://orcid.org/0000-0002-7306-879X
Rachel O. Horton https://orcid.org/0000-0001-6989-9657
Jessica A. Sommerville https://orcid.org/0000-0001-8290-254X

Arianne E. Eason and Elizabeth A. Enright contributed equally to this work. Data for all studies have been made publicly available at the Open Science Framework and are accessible at https://osf.io/2v97s/?view_only=1ea69030ecd84a088c448ca80da80c34. Various combinations of studies presented in this article have been presented at conferences, prior to the publication of this article. These conferences include: The Human Behavior and Evolutionary Society Conference, the Cognitive Development Society Conference, the International Congress on Infant Studies Conference, and the Society for Research on Child Development Conference.

This research was supported by a grant from the John Templeton Foundation and by Grant 1R01HD076949-01 from Eunice Kennedy Shriver National Institute of Child Health and Human Development awarded to Jessica A. Sommerville. The opinions expressed in this publication are those of the authors and do not necessarily reflect the views of the John Templeton Foundation or the National Institute of Child Health and Human Development. Additionally, work on this research and article was made possible by a National Science Foundation Graduate Research Fellowship, a Ford Foundation Predoctoral Fellowship, a University of Washington Graduate Opportunity–Minority Advancement Program Presidential Fellowship, and by National Institute on Aging and Development Training Grant T32 AG0000030 awarded to Arianne E. Eason and through a Department of Psychology, University of Washington Earl Buz Hunt and Mary Lou Hunt Endowed Psychology Graduate Fellowship and a Department of Psychology, University of Washington The Robert C. Bolles Graduate Fellowship awarded to Elizabeth A. Enright.

The authors thank the members of the Early Childhood Cognition Lab previously at the University of Washington (now at the University of Toronto) for their help recruiting participants and coding data. The authors thank Lizzy Zhongyu and Ava Alexander. The authors also thank the Developmental area at the University of Washington for their feedback on previous versions of the article.

Arianne E. Eason played a lead role in conceptualization, data curation, formal analysis, investigation, methodology, project administration, writing–original draft, and writing–review and editing. Elizabeth A. Enright played a

continued

In the United States, there are vast resource inequalities among individuals and groups (Wolff, 2021). The wealthiest .01% of individuals own as much as the bottom 90% of individuals combined, and the top 1% earn 40 times more than the bottom 90%. Although most people report that they prefer more equitable wealth distributions and think extreme resource inequality is unacceptable (Norton & Ariely, 2011), robust wealth-based biases (i.e., social preferences for the rich) work to maintain such vast inequalities. People prefer rich over poor individuals (Ahl & Dunham, 2019; Cuddy et al., 2009; Enright et al., 2020; Li et al., 2014; Shutts et al., 2016), more positively evaluate rich versus poor individuals (e.g., as smarter, nicer, and more trustworthy; Mistry et al., 2015; Mookherjee & Hogan, 1981; Osborne & Rappaport, 1985; Shutts et al., 2016), view behavior by poor individuals as more negative than the same behavior carried out by rich individuals (Osborne & Rappaport, 1985), and in some cases, even go out of their way to help rich compared to poor individuals (Goodman & Gareis, 1993). Moreover, the tendency to prefer rich (vs. poor) individuals occurs regardless of whether people themselves are rich or poor (Mistry et al., 2015; Mookherjee & Hogan, 1981). In the present experiments, we explore the ontogeny of wealth-based biases and inequality maintenance. Specifically, we ask: Are behavioral and evaluative biases favoring the rich an early-emerging and robust feature of human psychology?

Early-emerging wealth-based biases and vast wealth inequalities may be quite surprising given the empirical picture painted of early human development, suggesting that our most basic human psychology is marked by other-oriented concerns for fairness and prosociality. For example, infants expect resources to be distributed equally (as opposed to unequally) across individuals (Burns & Sommerville, 2014; Lucca et al., 2018; Schmidt & Sommerville, 2011; Sloane et al., 2012; Ziv & Sommerville, 2017), prefer individuals who divide resources fairly rather than unfairly (Burns & Sommerville, 2014; Schmidt & Sommerville, 2011), and prefer individuals who give rather than keep toys (Hamlin et al., 2011). Moreover, infants are even willing to incur personal costs to encourage equity and social harmony—they engage in altruistic sharing (Schmidt & Sommerville, 2011), punish those who hinder other's goals (Hamlin et al., 2011), and avoid interacting with individuals who are antisocial partners (Hamlin et al., 2011; but also see Tasimi & Wynn, 2016). Through this lens, wealth-based biases run counter to many foundational psychological tendencies and thus likely emerge relatively late in development after extensive socialization and/or because of the ubiquity of wealth cues, particularly resource inequities, in the social environment.

Nonetheless, across the animal kingdom, control over and access to resources are paramount to survival and represent a central dimension upon which social hierarchies are built and maintained (Hawley, 1999). Demonstrating the importance of social hierarchy understanding, before their second birthday, infants track status-based differences across numerous other domains, such as goal achievement (Bas & Sebastian-Galles, 2021; Enright et al., 2017; Mascaro & Csibra, 2012; Mascaro & Csibra, 2014; Thomas & Sarnecka, 2019), physical dominance (Thomsen et al., 2011), prestige (Margoni et al., 2018), and group size (Pun et al., 2016). Moreover, the numerical abilities required to track resources are in place early in development: by 12 months of age, infants differentiate numerical magnitudes with a 2:3 ratio, identify the larger set of items, and prefer the set with more as opposed to fewer items (Feigenson et al., 2002, 2004). Thus, given the evolutionary importance of resource access and control, wealth-based biases—particularly, the ability to track others' wealth, preferences for rich over poor individuals, and evaluations based on wealth—may emerge early in life and manifest broadly.

Across seven experiments, using multiple manipulations of wealth inequality and multiple methods (i.e., behavioral choice, a helping paradigm, and looking-time studies), we investigate whether there is evidence that infants, in the second year of life: (a) track differences in individuals' wealth (Experiments 1–7), (b) have wealth-based behavioral preferences (Experiments 2, 3, and 6), and (c) positively and/or negatively evaluate individuals based on their wealth (Experiments 4, 5, and 7). Moreover, we investigate developmental trends in the use of wealth as a dimension of social evaluation (Experiments 6 and 7). Taken together, this work will speak to whether wealth is a central dimension of social evaluation, emerging as early as the second year of life. Investigating infants' early attention to wealth differences when evaluating others is of critical importance as such an endeavor can: (a) shed light on the processes that contribute to and maintain wealth-based biases and wealth inequality, (b) lay the foundation for more targeted research focusing on combating the negative effects stemming from these biases, and (c) contribute to broader models identifying foundational social cognitive abilities, specifically as it pertains to understanding and acting on relations between individuals and social groups.

Part 1: Tracking Wealth and Infants' Behavioral Preferences for Rich and Poor Individuals

As a first step to understanding whether wealth is an early-emerging and important dimension of social evaluation, we investigate whether infants track differences in individuals' wealth, whether they expect those differences to endure (Experiment 1), and whether they use wealth information to guide their subsequent social behaviors (Experiments 2 and 3).

Experiment 1: Tracking Wealth Differences

The ability to track wealth and expect relative differences in people's wealth to persist across time is a necessary precursor for establishing that wealth-based biases emerge in infancy. On one

supporting role in writing–review and editing and an equal role in conceptualization, data curation, formal analysis, methodology, project administration, and writing–original draft. Shimeng Weng played a supporting role in data curation, investigation, project administration, and writing–review and editing. Rachel O. Horton played a supporting role in data curation, investigation, project administration, and writing–review and editing. Miranda J. Sitch played a supporting role in data curation, investigation, project administration, and writing–review and editing. Jessica A. Sommerville played a lead role in supervision and a supporting role in conceptualization, methodology, resources, writing–original draft, and writing–review and editing.

Correspondence concerning this article should be addressed to Arianne E. Eason, Department of Psychology, University of California, Berkeley, Berkeley, CA 94720, United States, or Elizabeth A. Enright, Department of Psychology, St. Mary's College of Maryland, St. Mary's City, MD 20686, United States. Email: easona@berkeley.edu or enright.elizabeth.a@gmail.com

hand, evidence that infants track differences in individuals' wealth and expect those differences to persist (i.e., that infants represent variability in wealth across people) would suggest that infants possess a necessary precursor for wealth-based biases to manifest. On the other hand, if infants do not track differences in wealth between individuals or do not expect those differences to endure, then the presence of consistent and robust wealth-based biases would be highly unlikely. In other words, the ability to encode wealth information is a necessary precursor to evaluating others on the basis of wealth.

In Experiment 1, infants viewed a live wealth display where they learned about two actors that differed in their resource possession: the rich actor always had a transparent bowl with many resources, whereas the poor actor only had three resources in their transparent bowl. After the wealth display established who was rich and who was poor, each actor then pulled out an opaque bowl which concealed the number of resources contained within from the infant. The actors then left the room and infants were given the opportunity to select and search either the rich or poor actor's opaque bowl. Previous research demonstrates that infants reliably prefer containers with more items as opposed to containers with fewer items (Feigenson et al., 2004). Therefore, if infants encoded and remembered who previously had more resources and expected these wealth-based differences to persist (i.e., if they represented variability in wealth across people), then we expect that they would choose the opaque bowl that belonged to the rich actor as opposed to the opaque bowl that belonged to the poor actor.

Method

Participants. Thirty-five 17-month-old infants participated (M_{age} = 17 months and 7 days; range = 16 months and 23 days to 8 months and 10 days). Two additional infants were tested but excluded from the sample because the primary experimenter was made aware of which bowl belonged to the rich versus poor actor (n = 1) and because, while the primary experimenter thought the infant made a choice (and thus concluded the testing session), the second naïve coder and a third coder (to resolve the disagreement) thought the infant did not make a choice (n = 1). When asked about their child's sex, primary caregivers identified 17 infants as female and 18 as male.[1] Primary caregivers identified 28 infants as White, six as multiracial, and one as Hispanic.[2] The majority of infants had at least one parent with a 4-year college degree or higher (n = 34).

We planned to collect data until 24 infants chose one of the bowls, but we inadvertently tested one extra participant such that a total of 25 infants made a choice. Thus, our final sample size was 25 infants, which would allow us to detect large-sized effects (effect size $g \geq .27$) with at least 80% power (Faul et al., 2007). Prior infant studies using choice paradigms reported similarly sized effects, ranging from $g = .13$ to $g = .38$ (e.g., Burns & Sommerville, 2014; Feigenson et al., 2004; Hamlin et al., 2011; Kinzler et al., 2007; Kinzler & Spelke, 2011; Mascaro & Csibra, 2012; Schmidt & Sommerville, 2011; Ziv & Sommerville, 2017), and rates of infants not making a choice (e.g., Lucca et al., 2018; Ziv & Sommerville, 2017).

Across all studies, participants were recruited from a database of families who volunteered to participate in research at a large research university in the Pacific Northwest of the United States. All participants' parents provided written consent in accordance with the university's institutional review board, Human Subjects Division ("Infants' Understanding of Social Interactions"; HSD #40841). All infants were full-term and typically developing. In addition, parents were asked to fill out a demographic questionnaire indicating their child's sex, race/ethnicity, the parent's education, and children's English language exposure. Participants received a small toy upon completion of the study.

Transparency and Openness. All experiments in this article were conducted between 2011 and 2018, although the experiments are not presented in chronological order. All data and code for analyses reported in the main text are available at the Open Science Framework at https://osf.io/2v97s/?view_only=1ea69030ecd84a088c448ca80da80c34 (Eason et al., 2024). Only Experiment 5 was preregistered. However, the sample sizes (see the Participants sections), coding procedures, and analyses for all experiments were planned in advance of data collection.

Procedure.

Wealth Display Phase. The purpose of the wealth display was to demonstrate that one actor had many resources (the rich actor), whereas the other actor had only a few resources (the poor actor). Infants were seated in their caregiver's lap and sat facing the table where two White female actors were sitting. Infants sat approximately 64 cm away from the table, midway between the two actors, such that they could not reach the actors or their resources during the wealth display. Caregivers wore opaque glasses that occluded their vision and were instructed to avoid interacting with the infant during the procedure. The primary experimenter gave parents instructions throughout the experiment to ensure compliance.

Infants saw three live wealth display trials featuring two actors: one person was always depicted as rich, and the other was always depicted as poor. The rich actor possessed a transparent bowl that was mostly full, and the poor actor possessed a transparent bowl that was nearly empty (i.e., only contained three resources). On each trial, each actor sequentially greeted the infant (e.g., "Hi! Look!") and then pulled three resources from their bowl, while saying, "Look at all my cookies/balls/toys." At the end of each wealth display trial, infants had approximately 3 s to view both actors with their respective bowls in front of them to see that one actor clearly had more resources than the other actor.

Test Phase. Immediately after the wealth display phase, the rich and poor actors showed infants that they each had an additional, opaque bowl (bowls were painted to match each actor's shirt). As in the earlier wealth display trials, each actor pulled three objects (specifically, rubber ducks) out of their bowl and showed them to the infant. However, because the bowls were opaque rather than transparent, infants received no information regarding the total number of resources in each actor's bowl.

Choice Task. After this display, the rich and poor actors left the room, leaving their opaque bowls behind. The primary experimenter unaware of which bowl had more or fewer resources directed parents to move infants up to a table where the bowls were placed,

[1] For this and all subsequent studies, parents were asked to identify their child's sex and given three options: "Male", "Female", or "I prefer not to answer this question".

[2] For this and all subsequent studies, parents were asked to identify their child's race/ethnicity and given eight options: "Asian/Pacific Islander", "Black/African American", "Hispanic", "Native American", "White, non-Hispanic", "Multiracial, please specify", "Other, please specify", or "I prefer not to answer this question".

equidistant from the infant. To assess whether infants tracked individuals' wealth, infants had 10 s to make a spontaneous choice by pointing to or reaching for one of the bowls. If the infant did not make a spontaneous choice, the experimenter prompted the infant to make a choice by alternating prompts, "[Infants' name], do you want to pick a bowl" and, "Which bowl do you want to play with," every 10 s for up to 60 s.

The identity, location, and color associated with the rich actor and which actor went first during the wealth display phase were counterbalanced across all infants. Adherence to the experimental protocol (i.e., prompts given, timing of prompts, and matched affect by the two actors) was confirmed through a post hoc procedural checklist. For a schematic of the procedure, see Figure 1.

Coding. The primary experimenter, who was naïve to the identity of each opaque bowl's owner (i.e., rich or poor actor) determined whether the infant made a choice and which bowl the infant chose. To be considered a choice, the infant needed to either point to the bowl or reach for it, while looking at that bowl. A second naïve coder, coded from video whether the infant made a choice and which bowl they chose. The naïve coder agreed 97% of the time with the primary experimenter about whether the infant made a choice (see the Participants section) and agreed 100% of the time with the primary experimenter about which bowl the infant chose.

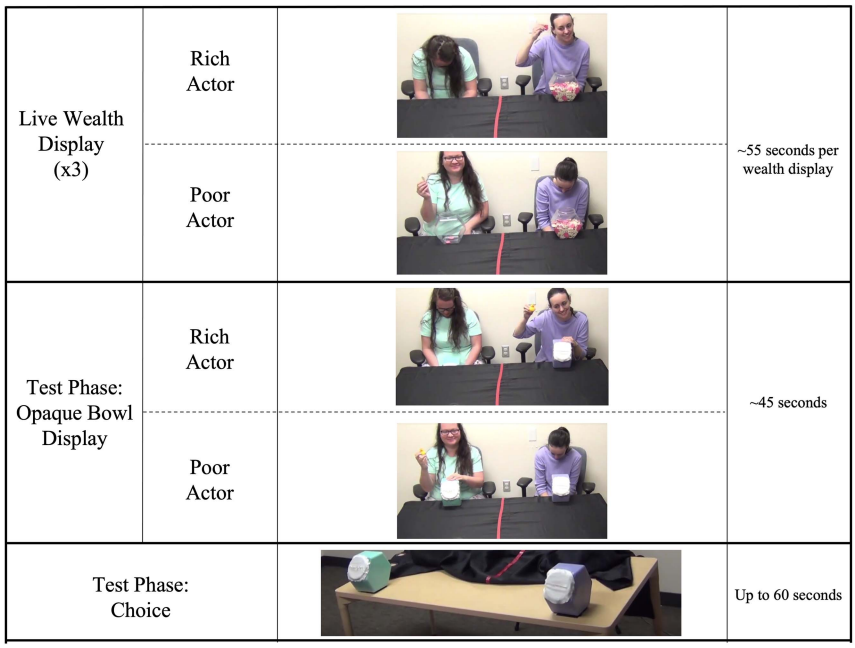
Results

For the primary analysis, we focused only on infants who chose one of the bowls ($n = 25$). Demonstrating that early in life infants track wealth differences, remember these differences, and expect wealth differences to be enduring properties of a single individual, the majority (72%) of infants chose the rich actor's bowl as opposed to the poor actor's bowl (binomial test, $p = .043$, $g = .22$; Figure 2). Additional analyses including infants who did not choose either individual's bowl converge with the primary analyses; see Supplemental Material for more details.

Discussion

The present study demonstrates that infants have the ability to track and remember individuals' wealth and expect that the rich person will continue to have more resources than the poor person, even when the resources themselves change. This data provide initial evidence that infants represent differences in others' wealth and have expectations that individuals higher in the hierarchy would remain so, even when the context changes (see also Enright et al., 2017). In conjunction with prior research demonstrating that infants can identify and prefer larger quantities of resources (Feigenson et al., 2004), have expectations regarding how resources are (Burns & Sommerville, 2014; Schmidt & Sommerville, 2011; Sloane et al., 2012; Ziv & Sommerville, 2017) and should be distributed (DesChamps et al., 2016), and are sensitive to a range of other social status markers (Bas & Sebastian-Galles, 2021; Enright et al., 2017; Margoni et al., 2018; Mascaro & Csibra, 2012; Pun et al., 2016; Thomas & Sarnecka, 2019; Thomsen et al., 2011), the present findings suggest that the necessary prerequisites and related capacities for using information about wealth to guide behavior toward and evaluations of others exist in the second year of life. Thus, in the next studies, we go beyond assessing wealth-based differences and wealth-based expectations of others to directly examine whether infants possess wealth-based *biases*.

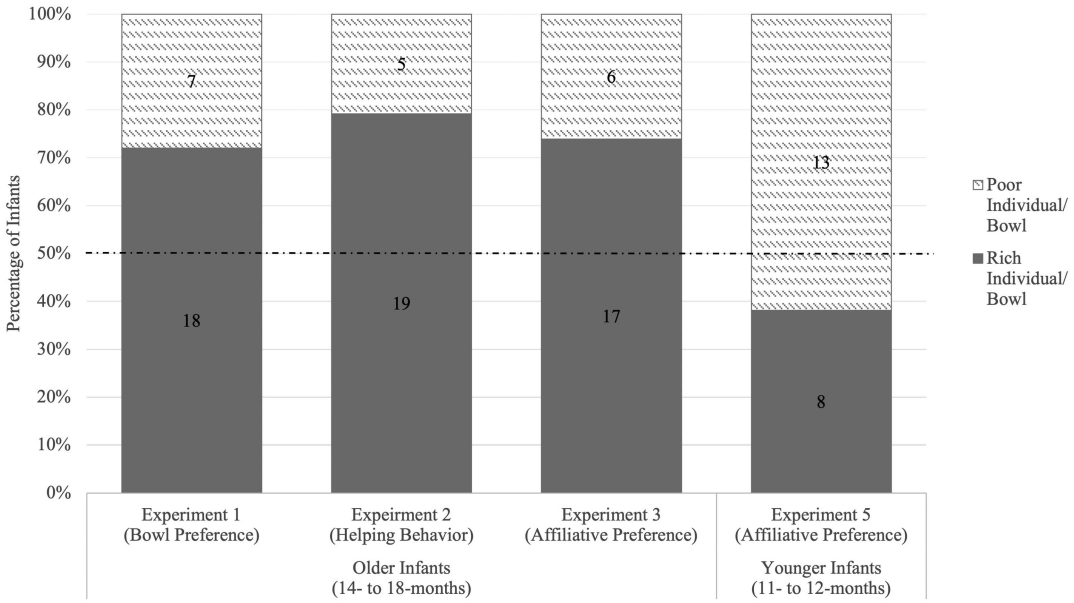
Figure 1
Experiment 1 Procedure Schematic



Note. See the online article for the color version of this figure.

Figure 2

Behavioral Choices for Older Infants in Experiment 1 (Indicating Their Preference for the Rich or Poor Individuals' Bowl), Experiment 2 (Indicating Who They Chose to Help), Experiment 3 (Indicating Who They Chose to Affiliate With), and for Younger Infants in Experiment 5 (Indicating Who They Chose to Affiliate With)



Specifically, we ask if infants use information about individuals' wealth to guide their behavior toward those individuals.

Experiment 2: Helping Behavior

Given that infants represent wealth-based hierarchies—that is, track differences in wealth across individuals and expect those differences to persist—our next aim was to understand whether wealth information affects infants' *behavior* toward rich and poor individuals. Although there are many behaviors that can be indicative of wealth-based biases, we begin by investigating whether infants prefer to help rich individuals as opposed to poor individuals. In particular, helping is a strong test case for investigating the early existence of wealth-based biases because it requires an active and instrumental response from infants.

From the perspective of real-world consequences, helping when resources are limited can either exacerbate inequalities between people if directed toward those higher in status or reduce inequalities if directed toward those lower in status. Moreover, from a practical perspective, helping behavior is spontaneously demonstrated early in infancy (Warneken & Tomasello, 2006) and has been successfully and unambiguously elicited in numerous lab settings (for a review, see Martin & Olson, 2015). Finally, from a theoretical perspective, scholars posit that helping is an other-oriented behavior motivated by concerns for others' welfare (Grossmann, 2018). As such, infants are sensitive to others' needs (Köster et al., 2016), are more likely to help those in need as opposed to those who are not in need (Dunfield et al., 2011), and are likely to help in a way that satisfies the existing need as opposed to offering help in a nonneeded way (Anderson & Martin, 2023). Infants even help others when such behavior comes at a cost to themselves (e.g., Warneken & Tomasello, 2013).

Yet, despite the theorizing and empirical evidence that other-oriented concerns guide infants' helping behavior, parallel and independent lines of research also demonstrate that helping behavior is impacted by numerous social and personal factors (Martin & Olson, 2015). For example, toddlers are more likely to help familiar as opposed to unfamiliar individuals (Allen et al., 2018) and more likely to help if their helping requires low- as opposed to high-effort actions (Sommerville et al., 2018). Nonetheless, to date, the extent to which the needs of others (i.e., other-oriented concerns) influence infants' social behavior and decision making over and above social- and self-relevant concerns is unclear, particularly concerns about social status. Evidence that infants are more likely to direct help toward rich individuals as opposed to poor individuals would suggest that social- and self-relevant concerns are relatively strong drivers of social behavior compared to other-oriented concerns, which has broader implications for theorizing about the motivations underlying helping behavior and, more generally, prosociality in early development.

Experiment 2 assessed whether wealth-based biases manifest within the context of infants' helping behavior. Similar to Experiment 1, infants learned that one actor was rich, and one was poor. Each actor then began individually building a block tower, and infants had the opportunity to help one of the actors complete their tower by bringing them a block that the infant possessed. Given this design, there are three possible alternatives. First, if infants based their own helping behavior on an actor's current need, we would expect infants to be equally likely to help the rich and poor actor since they both needed a block to complete their tower (Köster et al., 2016). Second, if infants based their own helping behavior on an actors' *prior* need, we would expect them to selectively help the poor actor since the poor actor previously had fewer resources than the rich actor. Third, if infants have robust social preferences for rich people, as adults and

children do (Ahl & Dunham, 2019; Cuddy et al., 2009; Enright et al., 2020; Li et al., 2014; Mistry et al., 2015; Mookherjee & Hogan, 1981; Osborne & Rappaport, 1985; Shutts et al., 2016), and if these preferences guide their prosocial behavior, we would expect them to selectively help the rich actor.

Method

Participants. Forty-eight 17-month-old infants participated (M_{age} = 17 months and 18 days; range = 16 months and 25 days to 18 months and 17 days). Two additional infants were tested but excluded from the sample due to a procedural error. When asked about their child's sex, primary caregivers identified 27 infants as female and 21 as male. Primary caregivers identified 39 infants as White and nine as multiracial. The majority of infants had at least one parent with a 4-year college degree or higher (n = 45).

Consistent with Experiment 1, data were collected until 24 infants made a choice of actor, in this case, a choice to help one of the actors by bringing them a block. Thus, our final sample size was 24 infants, which allowed us to detect large-sized effects (effect size $g \geq .29$) with at least 80% power (Faul et al., 2007).

Procedure.

Warmup. The warmup was included to decrease stranger anxiety and increase the likelihood that infants would make a choice. This warmup phase was designed so that infants had identical exposure to each actor in a controlled environment.

Infants were seated in their caregiver's lap across from two White female actors seated at a table. During the warmup, each actor took a turn giving the infant a toy. After receiving the toy, the infant had the opportunity to play with the toy for 10 s. After 10 s had passed, the actor requested the toy back. This sequence occurred six times; thus, the infant had the opportunity to interact with each actor three times. The primary experimenter, different from the two actors, ensured actors were equally matched on affect, speed and use of language, and time spent interacting with the infant. This was confirmed through a post hoc procedural checklist.

Critically, actors were naïve to the role they were playing up to the actual wealth display phase, such that during the warmup they did not know if they would be playing the rich or poor role in the wealth display phase. The side of the table the actors were sitting on (right and left) as well as the order the actors interacted with the infants (first and second) was counterbalanced.

Wealth Display Phase. The wealth display phase was identical to Experiment 1.

Test Phase. When the test phase began, each infant was sitting on their caregiver's lap, whereas the actors were seated on the floor, equidistant from the infant. Each actor took turns building their own block tower with toy blocks. The towers that each actor was building were identical. After building most of the tower, each actor realized that she needed one more block to finish building her respective tower. A single block sat adjacent to the infant. Each actor then looked at the block, pointed it out to the infant, and reached out toward the block. The caregiver was then instructed to release their infant on the floor directly behind the block. The infant was prompted every 10 s by the primary experimenter to help by stating, "Who do you want to help, (infant's name)? Do you want to help anyone?" until the infant brought the block over to one of the two actors or 60 s elapsed.

Importantly during this phase, there was no visual reminder indicating that the actors were differentially wealthy (i.e., the toys from the wealth display phase were removed from infants' vision). Thus, if infants systematically chose to help the rich or poor individual, then their behavior could not be based on differential behavior of each individual during the helping task or a salient reminder that one individual currently had more resources than the other. Instead, their choice would seem to be based on the fact that the person was *previously* demonstrated to be rich or poor (See Figure 3).

Coding. The primary experimenter coded live whether the infant helped by bringing one of the actors the block and who the infant chose to help (rich or poor actor). Another coder (who was naïve to which actor was rich or poor) reliability-coded 100% of participants from video. The naïve coder and primary experimenter agreed 100% of the time for whether the infant helped and 100% of the time for who the infant helped.

Results

In line with the proposition that wealth-based biases emerge during infancy, the majority (79%) of infants chose to help the rich (vs. poor) actor (binomial test, p = .007, g = .29; Figure 2). Additional analyses including infants who did not choose to help either individual converge with these primary analyses; see Supplemental Material for more details.

Discussion

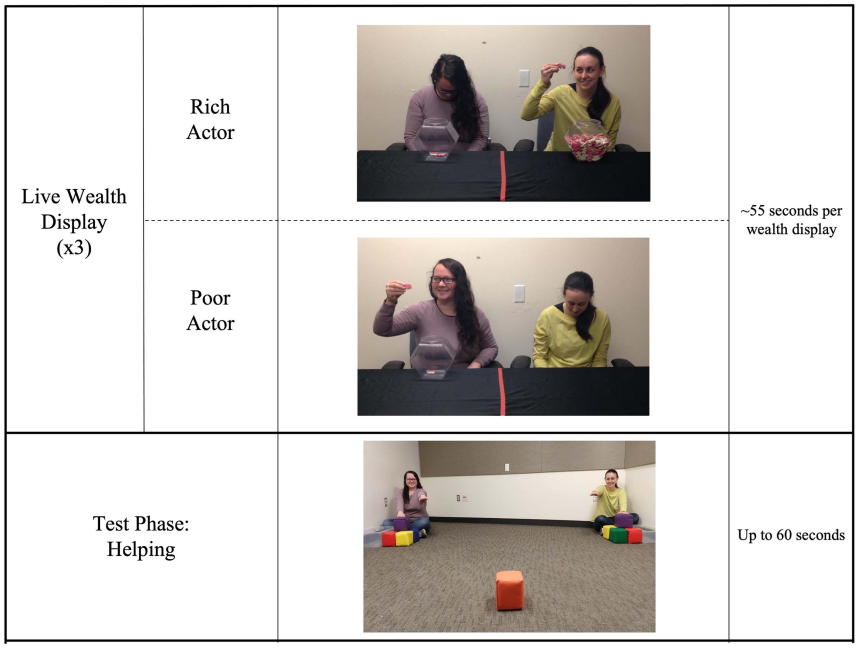
Overall, infants helped the rich actor as opposed to the poor actor. Importantly, this pattern of helping could not be explained by salient reminders of each actor's relative wealth since wealth information was not present at the time infants made their helping decision, and both actors demonstrated an equivalent need for the block. Instead, not only did infants remember the wealth information provided in the wealth display phase, but they subsequently used this information to guide their behavior.

As it currently stands, we found that wealth information may be a particularly central and potent dimension of concern. Specifically, for wealth-based biases to emerge in this study, infants had to forgo their previously demonstrated concerns for addressing others' needs (Köster et al., 2016). If infants had weighed need more heavily than wealth, then we would expect to have seen that infants helped the rich and poor actors equally, as both actors demonstrated an equivalent and salient need for a final block to complete their block tower, or we would expect to have seen that infants helped the poor person more often than the rich person, as the poor person was previously demonstrated to be generally resource disadvantaged. Nonetheless, we found that infants helped the rich actor more often than the poor actor, suggesting that wealth information shapes helping behavior and may even do so more strongly than a situationally salient, other-oriented concern. Moreover, building from this insight, our findings suggest that it is important to move beyond the question of are infants helpful to more complex questions of who infants choose to help, under what circumstances, why, and what are the implications of such help?

Experiment 3: Affiliative Preference

Experiments 1 and 2 demonstrate that infants track individuals' wealth, expect wealth differences between people to persist, and use wealth information to shape their helping behavior. Building on

Figure 3
Experiment 2 Procedure Schematic



Note. See the online article for the color version of this figure.

these findings, Experiment 3 has two aims. First, we explore the domain generality of wealth-based biases, that is, do wealth-based biases in infancy also manifest outside of a helping context? Using a behavioral choice paradigm, we test whether infants have affiliative preferences for rich (vs. poor) individuals. Second, we use a different manipulation of wealth, which incorporates information about how each person's behavior led them to become rich or poor. Together, these aims helped to shed light on the scope and breadth of early wealth-based biases.

As with helping behavior, understanding affiliative preferences has important social and theoretical consequences. Affiliative preferences can facilitate the fulfillment of basic psychological needs such as belonging, understanding, and trust (Fiske, 2002, 2004); they serve as the basis for future relationship formation and group cohesion (Baumeister & Leary, 1995); and ultimately, they can help facilitate survival goals (Snyder-Mackler et al., 2020). As such, infants show early affiliative preferences for people who have similar preferences (vs. different preferences; Mahajan & Wynn, 2012), native (vs. foreign) language speakers (Kinzler et al., 2007), victims (vs. aggressors; Kanakogi et al., 2013), helpers (vs. hinderers; Hamlin et al., 2007), and fair (vs. unfair) resource distributors (Burns & Sommerville, 2014), to name a few. Nonetheless, not all affiliative preferences that fulfill psychological needs, support group formation and cohesion, and facilitate survival goals are rooted in infancy. For example, in the one study published to date, there was no evidence to suggest that infants prefer to affiliate with same-race as opposed to different-race individuals (Kinzler & Spelke, 2011). Consequently, the lack of evidence of race-based affiliative preferences in infancy has shaped how researchers conceptualize race bias, its malleability, and the mechanisms driving its development, relative to other biases, such as the preference for native (vs. foreign) language speakers (Kinzler et al., 2009). By understanding affiliative preferences in infancy, we better understand the nature of early wealth-based biases. Moreover, such an investigation can provide insight into whether wealth-based biases are a foundational aspect of early human psychology or if additional theorizing is needed to account for the wealth-based biases evident in childhood and adulthood.

To assess affiliative preferences for rich (vs. poor) individuals, infants saw a resource exchange between two actors in which one actor ended up with more resources than the other actor. During the test trial, the rich and poor actor simultaneously offered the infant an identical novel toy (that differed from the objects used in the resource exchange), and infants had the opportunity to choose to accept the toy from either actor. Critically, at the time of choosing, the information provided about each actor was equivalent; thus, any preferences for either actor must be driven by the preceding information about their relative wealth. As with previous research using this paradigm, infants' social preference, or approach tendency, is indicated by the actor that the infant accepts the toy from (Burns & Sommerville, 2014; Kinzler et al., 2007; Kinzler & Spelke, 2011; Lucca et al., 2018). In line with this interpretation, infants' choice in this paradigm positively correlates with whom they choose to give a toy to and who they choose to play with (Burns & Sommerville, 2014). Therefore, we expect that if information about individuals' wealth affects infants' social preferences, then they will choose the individual previously demonstrated to be rich, as opposed to the one previously demonstrated to be poor.[3]

[3] Given the context of wealth inequality, reviewers noted the possibility that infants may attempt to rectify inequality, by "taking a toy" from the rich individual. However, given the prior research with this paradigm in infancy as well as literature suggesting that even young children do not even rectify inequalities in this way (Paulus, 2014; Wörle & Paulus, 2018), we interpret the measure as social preference.

Method

Participants. Thirty-four 15-month-old infants participated (M_{age} = 15 months, 12 days; range = 14 months, 25 days to 6 months, 10 days). No additional infants were tested. When asked about their child's sex, primary caregivers identified 19 infants as female and 15 as male. Primary caregivers identified 23 infants as White, five as multiracial, two as Asian/Pacific Islander, one as Native American, one as non-White Hispanic, and two as another racial/ethnic background. The majority of infants have at least one parent with a 4-year college degree or higher (n = 31).

As with prior studies, we aimed for 24 infants making a choice; however, at the conclusion of the study, there was one infant whose choice was ambiguous because they simultaneously chose both individuals, therefore our final sample was 23 infants. This sample size would allow us to identify large-sized effects (effect size $g \geq .30$) with at least 80% power (Faul et al., 2007).

Procedure.

Wealth Display Phase. Infants sat on a caregiver's lap in front of a table. Parents were instructed to keep their eyes closed and refrain from interacting with their infant during the wealth display. Participants watched two live wealth display trials involving two White female actors. In each trial, both actors started with the same number of toys (four), and each actor sequentially exchanged their toys with one another. One actor put three toys in their own bucket and one toy in a bucket which belonged to the other actor; the other actor put two toys in their own bucket and two toys in the other actor's bucket. After both actors finished the exchange, each actor smiled at and inspected their toys. At the end of each wealth display trial, one actor had fewer resources (hereinafter referred to as the poor actor), ending up with three toys, whereas the other actor had more resources (hereinafter referred to as the rich actor), ending up with five toys. This sequence of events was then repeated with a different set of toys. The identity and location of the rich actor, the order of the exchange, and the toys used during each wealth display trial were counterbalanced across infants.

Test Phase. Adapting an established infant affiliation paradigm by Kinzler and colleagues (Kinzler et al., 2007; Kinzler & Spelke, 2011; see also Lucca et al., 2018) for a live interaction, actors sat at a table facing the infant. Both actors simultaneously smiled, extended their hands toward the infant, made eye contact, and invited infants to affiliate with them by offering identical novel bath toys to play with (i.e., these toys differed from those used in the wealth display phase). Infants had 50 s to choose with whom to affiliate and were prompted every 10 s to make a choice. Once the infant accepted an offer of affiliation by selecting a toy, the procedure ended.

Importantly during this phase, there was no visual reminder indicating that the actors were differentially wealthy (i.e., the toys from the wealth display phase were removed from infants' view). Moreover, the information provided about each individual was equivalent. Thus, if infants systematically chose the rich or poor individual, their behavior could not be based on a salient reminder that one individual currently had more resources than the other. Instead, their choice is likely based on the fact that the person *previously* was rich or poor. Adherence to the experimental protocol (i.e., prompts given, timing of prompts, and matched affect by the two actors) was confirmed through a post hoc procedural checklist. See online supplement for a sample stimuli video, which is accessible at https://osf.io/2v97s/?view_only=1ea69030ecd84a088c448ca80da80c34.

Coding. Two coders, unaware of hypotheses or who was rich and poor, coded from video who infants chose to affiliate with (operationalized as whose toy infants selected first or touched, if they did not take a toy). Coders agreed on 100% of infants' selections.

Results

Primary Analyses. The majority of infants (74%) chose to affiliate with the rich (vs. poor) actor (binomial test, $p = .035$, $g = .24$; Figure 2), demonstrating that wealth also influences infants' social preferences. Additional analyses including infants who did not choose either individual converge with the primary analyses; see Supplemental Material for more details.

Internal Meta-Analysis of Experiments 2 and 3. In addition to the primary analyses, using the metafor package in *R* (Viechtbauer, 2010), we conducted an internal meta-analysis on the results of Experiment 2 and 3 to better understand the extent to which infants behaviorally prefer rich to poor individuals (we did not include Experiment 1, as these infants were choosing rich and poor individuals' bowls, not the people themselves). We report the results of both the fixed and random effects models. Fixed-effects models estimate the average effect for studies included in each meta-analysis and thus represent a descriptive statistic. Random-effects models estimate the average effect for studies in general, and thus represent an inferential statistic about the generalizability of meta-analytic findings (Borenstein et al., 2010; Goh et al., 2016).

As expected, the internal meta-analysis revealed a strong preference for wealthy individuals relative to poor individuals across Experiment 2 and 3 (estimated percentage choosing the rich individual = 77%, $k = 2$, $z = 12.50$, $p < .0001$; fixed- and random-effects models provided equivalent estimates). Taken together, these results provide strong and consistent evidence that infants selectively help and affiliate with rich over poor individuals.

Discussion

Experiment 3 demonstrates that infants are more likely to approach rich individuals over poor individuals. Importantly, this preference could not be explained by differences in each individual's behavior at the time of choosing. Both individuals provided infants an opportunity to approach and affiliate with them by offering a single identical, novel toy to the infants. Moreover, the resources used to convey the person's status as "rich" or "poor" were not present when infants chose whom to approach.

As with Experiment 2, these results provide some evidence to suggest that wealth information may be a particularly central and potent dimension of social evaluation. Specifically, the rich person distributed their resources less prosocially (i.e., they gave fewer resources) than the poor individual, who gave more resources. Despite the fact that by 15 months of age, infants care about how prosocially individuals act (e.g., Burns & Sommerville, 2014; Geraci & Surian, 2011; Hamlin & Wynn, 2011), infants still preferred the rich yet less prosocial individual over the poor yet more prosocial individual. In conjunction with the results of Experiment 2, where infants' wealth preference was stronger than a different situationally salient other-oriented concern (need), these results raise the possibility that wealth information may override infants' other-oriented concerns.

Together, Experiments 2 and 3 suggest that, in the second year of life, behavioral preferences for rich over poor individuals already manifest in infants' helping behavior and affiliative preferences. These wealth-based biases occurred across a range of wealth inequalities (i.e., mostly full bucket to 3-item ratio and 5:3 item ratio) and across scenarios when the source of wealth inequality was provided (i.e., the wealth display demonstrated that the rich person's wealth stemmed from their own less generous behavior) and when such information was absent. Finally, these experiments demonstrate that wealth-based biases manifest even when direct evidence of wealth inequality is no longer physically present.

Part 2: Evaluations of Rich and Poor Individuals

Experiments 1–3 (Part 1 of the article) established that infants track wealth differences, preferentially help rich over poor individuals, and selectively affiliate with rich over poor individuals. These studies provide clear evidence of a rank-order preference for rich over poor individuals. However, the *evaluations* that undergird infants' preferential behaviors are unknown. For example, rank-order preferences for rich (vs. poor) individuals may stem from rich people being evaluated positively and poor people evaluated neutrally; or from rich people being evaluated neutrally and poor people evaluated negatively; or even from rich and poor people both being evaluated positively, but rich people being evaluated *more positively* than poor people. Thus, while rank-order preferences provide important insight into the presence of wealth-based biases, understanding the evaluations underlying these preferences provides nuance, clarity, and precision. In Part 2 of this article (Experiments 4 and 5), we ask: Do infants in the second year of life positively evaluate rich individuals, negatively evaluate poor individuals, or both?

Experiment 4: Wealth-Based Evaluations

Experiment 4 used a looking-time paradigm (DesChamps et al., 2016) to understand the nature of infants' evaluations by measuring infants' association of positive and negative stimuli with rich and poor individuals. Infants viewed video-recorded third-party resource distributions, establishing something akin to an income inequality, which is one facet of wealth inequality. Specifically, from a third party, one individual consistently received more resources (and therefore was demonstrated to be rich), whereas the other individual received fewer resources (and therefore was demonstrated to be poor). During the test phase, infants heard positive valenced vocal stimuli (positive stimuli condition) or they heard negatively valenced stimuli (negative stimuli condition). If they evaluated the rich and/or poor individuals, we predicted that infants would differentially shift their attention to the recipients as a function of hearing positive or negative stimuli. The exact pattern of systemic shifting, however, depends on the strength of their conceptual representation (DesChamps et al., 2016) of rich and poor individuals, an issue we return to in the Discussion and in Part 3 of this article.

Method

Participants. Thirty-two 15-month-old infants participated (M_{age} = 15 months, 11 days; range = 14 months, 27 days to 16 months, 10 days). Three additional infants were tested but excluded from the sample due to fussiness (n = 1) or a procedural error (n = 2). When asked about their child's sex, primary caregivers identified 21 infants as female and 11 as male. Primary caregivers identified 21 infants as White, nine as multiracial, one as non-White Hispanic, and one as another racial/ethnic background. The majority of infants had at least one parent with a 4-year college degree or higher (n = 28).

Given that research has yet to investigate infants' evaluations of (as opposed to rank-order preferences for) rich and poor individuals or recipients of resource allocations, we did not have a strong basis for estimating the effect size. Nonetheless, to achieve a fully counterbalanced design within each condition and approximate the number of infants used in previous work with this method (DesChamps et al., 2016), we collected usable data from 32 participants then stopped data collection. This gave us the ability to detect large-sized effects ($d \geq 1.00$) for our primary analysis with at least 80% power (Faul et al., 2007).

Procedure. Infants were seated on parents' laps, centered in front of a projector screen. Parents were instructed to keep their eyes closed and refrain from interacting with their infants. Infants were randomly assigned to either the positive stimuli condition or the negative stimuli condition. See online supplement for an example stimuli at https://osf.io/2v97s/?view_only=1ea69030ecd84a088c448ca80da80c34.

Wealth Display Phase. Regardless of condition, infants watched four sequential video-recorded wealth display trials in which one individual distributed resources to two other individuals (adapted from Schmidt & Sommerville, 2011). Videos were projected to be 38 cm × 69 cm. In each wealth display trial, two White female actors (the recipients) were seated at a table facing toward the infant, with their heads down. Across the table, the distributor sat centered between the two recipients (the distributor's back was facing the infant). Each recipient had a single empty white plate in front of her. The distributor greeted the recipients ("Hi") with positive vocal affect, after which both recipients looked up, with a neutral expression, simultaneously pushed their plates toward the distributor and said, "Please." One resource at a time, the distributor first gave resources to the person who would ultimately become rich by placing the resource on her plate and saying, "Here." Once finished with the rich individual, the distributor then distributed a single resource to the poor individual in a similar manner. At the end of each wealth display the distributor said, "There, all gone."

Across all wealth display trials, the same individual was always rich (i.e., received more resources than the other individual). The first two wealth display trials used four resources (3:1 Legos; 3:1 crackers), and the second two used six resources (5:1 Legos; 5:1 crackers). At the end of each distribution, infants saw a still-frame of the outcome; the total length of the clip was 20 s to ensure that they encoded each outcome. The identity and location of the rich individual was counterbalanced across infants. Infants were highly attentive to the wealth display trials, attending on average to 85% of the displays.

Test Phase.

Pretrial. The pretrial was designed for infants to encode the locations of the rich and poor individuals and to investigate whether there were attentional preferences to either the rich or poor individual. Therefore, infants were simultaneously presented with still images of the faces of the rich and poor individuals (32 cm ×

25 cm), on opposite sides of the screen (83 cm apart), for 10 s. The location of each individual was counterbalanced across infants.

Test Trial. The test trial was designed to investigate infants' positive and negative evaluation of the rich and poor individuals. Therefore, directly after the pretrial, while the images of the recipients' faces remained on the screen, infants either heard a string of seven positively valenced statements (e.g., "She's a good girl!," "She did a good job!"; positive stimuli condition) or a string of seven negatively valenced statements (e.g., "She's a bad girl!," "She did a bad job!"; negative stimuli condition) recorded by a female actress not involved in the wealth display phase. For 20 s, the statements emanated from a central speaker, equidistant between the two images.

Importantly, during the test phase, both the pretrial and the test trial, infants were not presented with information about each individual's resource possession; they were only presented with their faces. Thus, if infants systematically differed in their looking to each individual, then their behavior could not be based on a salient reminder of each individual's status as rich versus poor (i.e., each individual's resources being presented during the test phase). Instead, their looking would seem to be driven by *previous* differences in wealth. See online supplement for example stimuli at https://osf.io/2v97s/?view_only=1ea69030ecd84a088c448ca80da80c34.

Coding. The primary experimenter, who was unaware of the location of the rich and poor individuals' faces, coded from video the infants' duration of looking to the wealth display and infants' duration looking to the left and the right during test-phase trials using a computer-based program (Java Habituation Software; Casstevens, 2007). Another trained reliability coder, unaware of hypotheses, identity of the rich and poor individual, and location of the rich and poor individuals' faces, independently coded all infants and all test-phase trials. The two coders' looking times were highly correlated, $r(254) = .97$, $p < .001$. Results from the primary coder are reported in the article and remain unchanged if using the reliability coder's data. Looking times were converted to proportion scores, such that larger proportions reflect looking longer to the rich individual, and a value of .50 reflects equal looking to the rich and poor individuals.

Results

Pretrial Analyses. During the pretrial, infants' proportion looking to the rich and poor individual did not differ from .50, $M = .52$, $SD = .14$, 95% confidence interval (CI) [.47, .57], one-sample $t(31) = .74$, $p = .467$, $d = .13$, or by condition, $t(30) = 1.53$, $p = .136$, $d = .54$. Taken together, this suggests that, on average, infants did not have a baseline preference for attending to the rich or poor individual.

Primary Analyses. Our primary objective was to test whether infants differentially evaluated rich and poor individuals. Therefore, for the primary analyses, we tested the effects of condition on infants' proportion looking to the rich person during the test trial. This represents a relatively conservative test of our question of interest by focusing on infants' average looking during the test trial, without controlling for individual variability in infants' baseline preferences (i.e., controlling for pretrial performance). Nonetheless, results of analyses that directly compare pretrial and test trial performance are consistent with the primary analyses reported below (see Supplemental Material).

An independent samples *t* test revealed that infants differentially evaluated rich and poor individuals; specifically, infants in the positive stimuli condition ($M = .59$, $SD = .25$, 95% CI [.46, .72]) spent a greater proportion of their time looking to the rich individual compared to infants in the negative stimuli condition, $M = .38$, $SD = .19$, 95% CI [.28, .48], $t(30) = 2.70$, $p = .011$, $d = .96$. Follow-up analyses demonstrated that infants in the negative stimuli condition looked significantly less than .50 to the rich individual, suggesting that they negatively evaluated poor individuals, one-sample $t(15) = 2.45$, $p = .027$, $d = .61$. However, we found no evidence that infants positively evaluated the rich individual; that is, looking at the rich individual in the positive stimuli condition did not differ from .50, one-sample $t(15) = 1.51$, $p = .151$, $d = .38$. See Figure 4.

Discussion

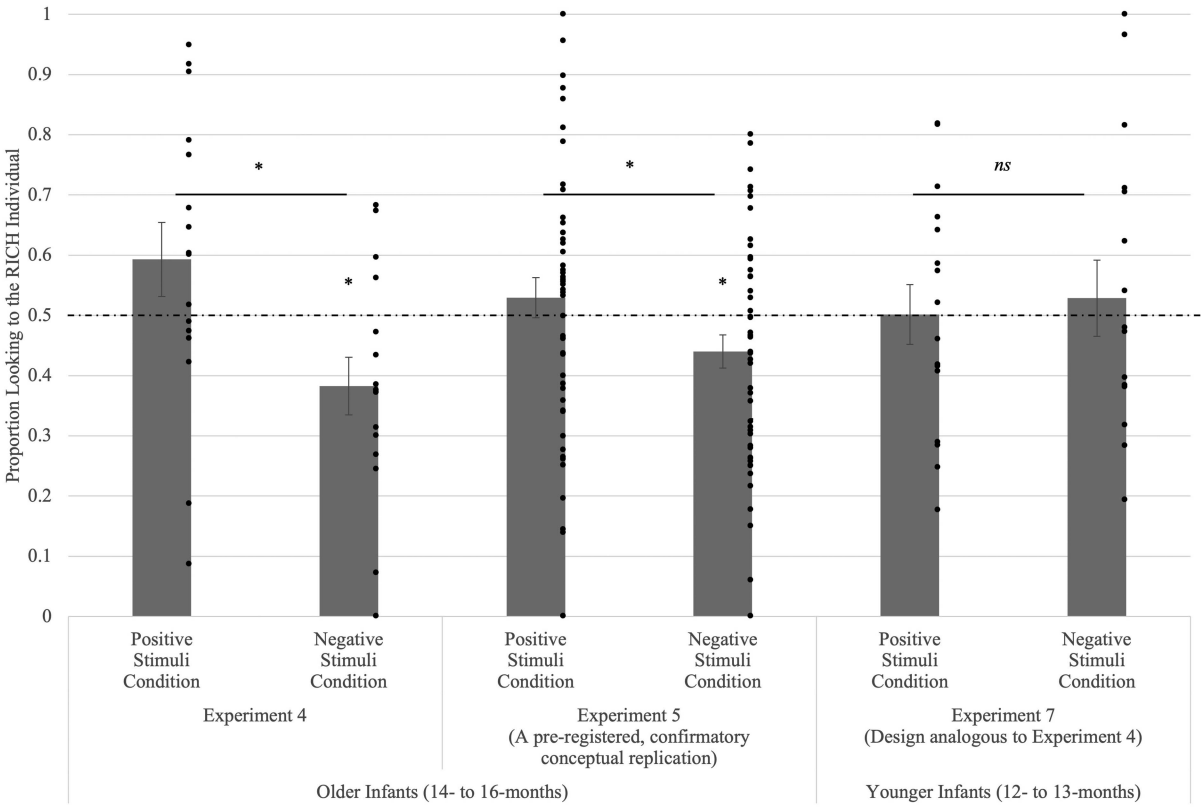
These findings suggest that infants' preferential treatment of the rich individual, established in Experiments 2 and 3, may be driven by negative evaluations of poor individuals but not necessarily positive evaluations of rich individuals. Specifically, infants in the negative stimuli condition looked proportionally longer to the poor individual than the rich individual during the test trial; however, 15-month-old infants in the positive stimuli condition did not differ in their proportion looking to rich and poor individuals. We take this as evidence that 15-month-old infants associate poor individuals with negativity.

Prior research demonstrates that infants' patterns of looking in similar paradigms (DesChamps et al., 2016; Ferry et al., 2013; Flom et al., 2009) depend on how developed or entrenched associations and concepts are in infants' minds (Aslin, 2007). Before associations are held, on average, patterns of looking may appear random or not related to the concept of interest. When concepts and associations first emerge, infants, on average, show "matching" patterns of visual attention. That is, their patterns of looking reflect looking at familiar or conceptually congruent stimuli. As concepts and associations become further elaborated and deeply entrenched, infants show "mismatch" patterns of visual attention, such that on average, they visually attend to stimuli that are novel or conceptually incongruent. In the present research, we interpreted the pattern of data through the lens of a matching effect, thus leading to the interpretation that infants negatively evaluate poor individuals. Nonetheless, to have greater confidence in our interpretation that greater proportionate looking to the poor individual in the negative stimuli condition reflects a negative evaluation of poor individuals among this group of infants, we take a two-pronged approach.

First, in Experiment 5, we aimed to replicate the results of the present study, using a more highly powered, preregistered design. Second, in Part 3 of the article (Experiments 6 and 7), we investigate age-related change in the use of wealth as a dimension of social evaluation, with the idea being that within a single domain, all else being equal (i.e., stimuli), age would serve as a proxy for conceptual development. The matching pattern of looking found in the present study suggests that negative evaluations of poor individuals are conceptually relatively new or not elaborated on at 15 months of age. Thus, if we have interpreted the data correctly, we would expect younger infants in this paradigm to (Experiment 7): (a) show a matching pattern of looking akin to the pattern in the present study, which would specifically indicate negative evaluations of poor people or (b) show a pattern of nonsystematic looking, which would

Figure 4

Experiment 4 (15-Month-Olds), 5 (15-Month-Olds), and 7 (13-Month-Olds) Results



Note. Columns represent condition means, error bars represent ±1 *SE*, and dots represent the proportion of looking to the rich individual for individual subjects. *SE* = standard error; ns = nonsignificant.
* $p < .05$.

indicate that they do not evaluate rich and poor people. Furthermore, we would expect the results and interpretations of the looking-time study with younger infants to converge with the results of a behavioral study with infants of the same age (Experiment 6).

Experiment 5: Wealth-Based Evaluations (a Preregistered, Confirmatory Conceptual Replication)

In Experiment 5, we sought to conduct a more highly powered, preregistered replication of the finding that 15-month-old infants differentially associate rich and poor individuals with positivity and negativity. In this study, we slightly amended the wealth manipulation, such that resources were distributed as lump sums to rich and poor individuals, as opposed to being distributed one at a time. Despite this change, consistent with Experiment 4, we expect that infants will associate poor individuals with negativity.

Method

Participants. Ninety-eight 15-month-old infants participated (M_{age} = 15 months, 27 days; range = 15 months, 12 days to 16 months, 16 days). Seven additional infants were tested but excluded from the final sample due to fussiness ($n = 4$), procedural error ($n = 1$), parental interference ($n = 1$), and because the infant went out of the camera frame during the test trial ($n = 1$). Forty-six infants were identified as female and 52 as male by either the primary caregiver or the primary experimenter. Primary caregivers identified 71 infants as White, 15 as multiracial, five as Asian/Pacific Islander, and one as non-White Hispanic. The majority of infants had at least one parent with a 4-year college degree or more ($n = 86$). Five caregivers chose not to report on their infants' demographic background.

As a preregistered replication of Experiment 4 and confirmatory study (available at https://osf.io/2v97s/?view_only=1ea69030ecd84a088c448ca80da80c34), we increased our sample size for multiple reasons. First, evidence has suggested that the "true" effect size of a given phenomenon may be approximately half of the size of an observed effect; in other words, small sample sizes may produce overestimates of effect sizes (Open Science Collaboration, 2015). Second, the design of Experiment 5 is slightly more cognitively taxing than Experiment 4. Therefore, we recruited a substantially larger sample (N 48 per cell) compared to Experiment 4. It is important to note that not only did our sample size significantly increase from Experiments 4 to 5; the sample size in Experiment 5 is also substantially larger than the average sample size of infant looking-time paradigms. Specifically, an analysis of published articles revealed that only 15% of looking-time experiments had 25 or more infants per cell, and none had a sample size of greater than 40 per cell (Oakes, 2017). This larger sample size gave us the ability to

detect medium-sized effects ($d \geq .58$) with at least 80% power (Faul et al., 2007).

Procedure. Infants were seated on parents' laps, centered in front of a projector screen. Parents were instructed to keep their eyes closed during the procedure and refrain from interacting with their infants. Infants were randomly assigned to either the positive stimuli condition or the negative stimuli condition. For example stimuli, see https://osf.io/2v97s/?view_only=1ea69030ecd84a088c448ca80da80c34.

Wealth Display Phase. Regardless of condition, infants watched four video-recorded sequential wealth display trials analogous to the ones shown in Experiment 4, with the following key changes. Each wealth display trial opened with a brief introduction from each recipient (i.e., "Hi, I'm a Niff," "Hi, I'm a Zugg"). In each wealth display trial, the resources were distributed in a single lump sum to each recipient's plate (in contrast to Experiment 4, where resources were distributed one at a time). After the distributor finished the distribution, they gave the plates back to the recipients simultaneously. The infant then saw a still-frame image of this outcome, until the total length of the clip was 30 s. The identity, location, and group associated with the rich individual was counterbalanced across infants. Infants were highly attentive to the wealth display trials, attending on average to 93% of the displays.

Test Phase. This test phase consisted of three parts: (a) an introduction trial, (b) a pretrial, and (c) a test trial. During the introduction trial, the individuals to be presented in the subsequent pretrial and test trial appeared on the screen, one at a time, and introduced themselves ("Hi, I'm a Niff/Zugg"). The individual who appeared on the screen first was counterbalanced across all infants. After the introduction phase, the pretrial and test trial progressed as in Experiment 4.

In addition to this test phase, infants also saw an analogous test phase with novel individuals to test the extent to which they might generalize their evaluations to novel members of the same group as the original actors. Half of infants saw the generalization test phase first, although preliminary analyses revealed no significant effects of test-phase order, $t(94) = .862$, $p = .391$, $d = .18$. For the preregistered analyses related to the results of the generalization test phase, see Supplemental Material.

Coding. The primary experimenter, who was unaware of hypotheses, and the location of the rich and poor individuals' faces, coded, from video, infants' duration of looking to the wealth display trials, and infants' duration looking to the left and the right during test phases using a computer-based program (i.e., Datavyu Team, 2014). Another trained reliability coder, unaware of hypotheses and location of each person's face, independently coded 50% of all infants and all test-phase trials. The two coders looking times were highly correlated, $r(382) = .98$, $p < .001$. The first author, who was also unaware of the location of the rich and poor individuals' faces, reviewed the remaining 50% of infants to verify the primary coders' data. Results from the primary coder are reported below. As with Experiment 4, looking times during the rich and poor individual test phase were converted to proportion scores, such that larger proportions reflect looking longer to the rich individual and a value of .50 reflects equal looking to each individual.

Results

Preregistered Analyses.

Pretrial Analyses. During the pretrial, infants' proportion looking to the rich and poor individual did not differ from .50, $M = .53$, $SD = .16$, 95% CI [.50, .56], one-sample $t(96) = 1.72$, $p = .089$, $d = .17$, by condition, $t(95) = 1.02$, $p = .312$, $d = .21$, or by trial order, $t(95) = .19$, $p = .851$, $d = .04$. Taken together this suggests that, on average, infants did not have a baseline preference for attending to the rich or poor individual. This is consistent with Experiment 4.

Primary Analyses. Experiment 5 also replicated the primary results of Experiment 4 with a more highly powered and preregistered design (See Supplemental Material for preregistration). An independent samples t test revealed that infants differentially evaluated rich and poor individuals; specifically, infants in the positive stimuli condition ($M = .53$, $SD = .23$, 95% CI [.46, .60]) spent a greater proportion of their time looking to the rich individual compared to infants in the negative stimuli condition, $M = .44$, $SD = .19$, 95% CI [.39, .50], $t(95) = 2.06$, $p = .043$, $d = .42$. Follow-up analyses demonstrated that infants negatively evaluated poor individuals, that is, looked significantly less than .50 to the rich individual in the negative stimuli condition, one-sample $t(48) = 2.17$, $p = .035$, $d = .31$. Consistent with Experiment 4, we found no evidence that infants positively evaluated the rich individual, that is, looking at the rich individual in the positive stimuli condition did not differ from .50, one-sample $t(47) = .873$, $p = .39$, $d = .13$. See Figure 4. See Supplemental Material for convergent results of analyses that directly compare pretrial and test-trial performance.

Internal Meta-Analyses of Experiments 4 and 5. Internal meta-analyses (Viechtbauer, 2010) provide further support for the assertion that wealth-based biases early in development consist of negative evaluations of poor individuals but not positive evaluations of rich individuals. Across Experiments 4 and 5, infants in the positive stimuli conditions spent a greater proportion of their time looking to the rich individual compared to infants in the negative stimuli conditions (fixed-effects model: $g = .53$, $k = 2$, $z = 2.98$, $p = .003$, 95% CI [.18, .89]; random-effects model: $g = .58$, $k = 2$, $z = 2.40$, $p = .016$, 95% CI [.11, 1.06]). Demonstrating that infants negatively evaluate poor individuals, across both studies, infants in the negative stimuli conditions looked significantly less than .50 to the rich individual ($g = .37$, $k = 2$, $z = 2.86$, $p = .004$, 95% CI [.12, .62]; fixed- and random-effects models provided equivalent estimates). However, even with the additional power offered by the internal meta-analysis, we did not find evidence that infants positively evaluate rich individuals (i.e., proportion looking to the rich individual in the positive stimuli conditions did not differ from .50; $g = .18$, $k = 2$, $z = 1.43$, $p = .153$, 95% CI [−.07, .43]; fixed- and random-effects models provided equivalent estimates).

Discussion

These results replicate the results of Experiment 4, thereby providing consistent evidence that in the second year of life, infants differentially evaluate rich and poor individuals; specifically, they negatively evaluate poor individuals. In conjunction with the findings of Experiments 2 and 3, these results suggest that the preferential behavior toward rich individuals may be better understood as a dispreference for poor individuals. Together, Part 1 and Part 2 of the present article suggest that in the second year of life, wealth-based biases are relatively robust, general, and consistent, manifesting across numerous manipulations of wealth inequality and outcome measures by 15 months of age.

Part 3: Developmental Considerations

While Parts 1 and 2 of the article demonstrate that wealth-based biases are evident by 15 months of age, the aim of Part 3 is to explore the developmental trajectory of evaluations of rich and poor individuals. Specifically, we attempt to identify the age when infants first use wealth as a guide for their social behavior and evaluations. As an initial endeavor, we chose to focus on 12- to 13-month-old infants. From a theoretical perspective, between 12 and 15 months of age, infants are developing relatively robust and consistent expectations about resource allocations and use these expectations to evaluate resource distributors (DesChamps et al., 2016). Moreover, between 12 and 15 months of age, infants are becoming more agentic social actors (Casby, 2003; Tomasello et al., 2005), which drives their developing interest in social relations and subsequent social judgements and evaluations (Ziv & Sommerville, 2017). Thus, it is possible that wealth-based biases follow a similar developmental trajectory, emerging near the end of the first year of life and the beginning of the second year of life.

To address the question of whether younger infants use wealth to guide their social behaviors and judgements, we conducted a behavioral study (Experiment 6), analogous to Experiment 3, and a looking-time study (Experiment 7), analogous to Experiment 4. By using the same methods, we can directly compare results across age. We expect that if younger infants use wealth as a guide to their social behaviors and decision making, they would: (a) prefer to affiliate with the rich individual (Experiment 6) and (b) negatively evaluate poor individuals, which would manifest as proportionately longer looking to the poor individual in the negative stimuli condition (i.e., a matching pattern; Experiment 7).

Experiment 6: Affiliative Preference Among Younger Infants

In Experiment 6, using the same behavioral choice paradigm as Experiment 3, we test whether younger infants have affiliative preferences for rich (vs. poor) individuals. If information about individuals' wealth affects younger infants' social preferences, then they should choose the individual demonstrated to be rich, as opposed to the one demonstrated to be poor.

Method

Participants. Thirty-three 12-month-old infants (M_{age} = 12 months, 4 days; range = 11 months, 23 days to 12 months, 19 days) participated in this experiment. When asked about their child's sex, primary caregivers identified 20 infants as female and 13 as male. Primary caregivers identified 25 infants as White, seven as multiracial, and one as non-White Hispanic. The majority of infants have at least one parent with a 4-year college degree or higher (n = 25). All infants were full-term and typically developing. Participants were recruited from a database of parents who volunteered to participate in research at a large research institution in the Pacific Northwest. All participants' parents provided written consent in accordance with the university's institutional review board. Participants were provided with a small toy upon completion of the study.

At the time in which the study was conducted, we aimed to run 32 infants, regardless of whether those infants made a choice, which was in line with the sample size from previous studies. Taking into consideration the number of infants who actually made a choice to affiliate with one of the actors, our final sample was 21 infants. This sample size would allow us to identify large-sized effects (effect size $g \geq .31$) with at least 80% power (Faul et al., 2007).

Procedure. All procedural details were identical to Experiment 3, including the use of a post hoc procedural checklist to confirm that actors were equally matched on affect, speed and use of language, and time spent interacting with the infant.

Coding. Two coders, unaware of hypotheses or who was rich and poor, coded from video whose toy infants selected first or touched, if they did not select a toy. Coders agreed on 100% of infants' selections.

Results

Primary Analysis. Twelve-month-old infants did not differ in their choice to affiliate with the rich (vs. poor) actor (38% choosing the rich individual; binomial test, p = .383, g = .12; Figure 2). Additional analyses including infants who did not choose either individual converge with the primary analyses; see Supplemental Material for more details.

Age-Differences: Comparing Experiment 3 and Experiment 6. Older infants (Experiment 3) and younger (the present experiment) infants significantly differed in their choice of affiliation partner, $\chi^2(1, N = 44) = 5.74$, p = .017, φ = .36. Fifteen-month-old infants preferred to affiliate with the rich individual, whereas 12-month-old infants showed no significant preference. A logistic regression using age as a continuous predictor of infants' choice of individual converged with the results of the categorical age variable. Specifically, with age, infants were more likely to choose the rich individual, B = .424, SE = .195, Wald test = 4.727, p = .030.

Discussion

Experiment 6 found that 12-month-old infants were not more likely to choose to affiliate with rich as opposed to poor individuals, suggesting that they do not use wealth as a guide to social behavior or, at the very least, they use wealth and prosociality equivalently, which stands in stark contrast to older infants. To better understand if younger infants' use of wealth is qualitatively different (i.e., they do not use wealth as dimension) or merely quantitatively different (i.e., use wealth to a lesser extent) than older infants, we next investigate younger infants' use of wealth as a dimension of social evaluation, using a manipulation that isolates individuals' wealth from their prosociality.

Experiment 7: Wealth-Based Evaluations Among Younger Infants

The aim of Experiment 7 is to explore the developmental trajectory of the use of wealth as a dimension of social evaluation. Using the looking-time paradigm from Experiment 4, we assess whether 12- to 13-month-old infants associate rich and poor individuals with positivity and/or negativity. Specifically, infants viewed a video-recorded third-party resource distribution where one person consistently received more resources (and thus was rich) and the other person consistently received fewer resources (and thus was poor). During the test phase, infants heard positive valenced vocal

stimuli (positive stimuli condition) or they heard negatively valenced stimuli (negative stimuli condition). We used the same stimuli and procedure as Experiment 4, as opposed to Experiment 5, because Experiment 4 was less cognitively demanding. Thus, if younger infants indeed can and do evaluate others based on wealth, it is more likely to manifest with the simpler design of Experiment 4.

If younger infants show evidence of wealth-based evaluation, we expect that they would negatively evaluate poor individuals and that this negative evaluation would manifest as proportionately longer looking to the poor individual in the negative stimuli condition (i.e., a matching pattern). In conjunction with the results of Experiment 6, this would suggest that younger infants are relatively equally concerned with wealth and prosociality.

Alternatively, younger infants may not show evidence of systematic wealth-based evaluations (i.e., alter their looking based on experimental condition). Given that prior evidence suggests that infants of this age reliably and systematically shift their attention in this exact paradigm (DesChamps et al., 2016) when evaluating fair and unfair distributors of resources, we can interpret null results as evidence that they are not reliably using wealth as a dimension of social evaluation, as opposed to null results indicating a methodological failure. Such a finding would further suggest that the null results of Experiment 6 did not arise because prosociality and wealth were diametrically opposed in the manipulation but instead because wealth has yet to emerge as a socially significant dimension of evaluation.

Method

Participants. Thirty-two 13-month-old infants participated (M_{age} = 12 months, 29 days; range = 12 months, 23 days to 13 months, 9 days). No additional infants were tested and excluded from the sample. When asked about their child's sex, primary caregivers identified 15 infants as female and 17 as male. Primary caregivers identified 22 infants as White, seven as multiracial, two as African American, and one as non-White Hispanic. The majority of infants had at least one parent with a 4-year college degree or higher (n = 26).

Procedure and Material. All procedures and materials were identical to Experiment 4.

Coding. As with Experiment 4, the primary experimenter, who was unaware of the location of the rich and poor individuals' faces, coded from video the infants' duration of looking to the distribution episodes and infants' duration looking to the left and the right during test phase using a computer-based program (Java Habituation software; Casstevens, 2007). Another trained reliability coder, unaware of hypotheses and location of the rich and poor individuals' faces, independently coded all infants and all test phase trials. The two coders' looking times were highly correlated, $r(128) = .99$, $p < .001$. Results from the primary coder are reported below and remain unchanged if using the reliability coder's data. Looking times were converted to proportion scores, such that larger proportions reflect looking longer to the rich individual, and a value of .50 reflects equal looking to the rich and poor individuals.

Results

Pretrial Analyses. During the pretrial, infants' proportion looking to the rich and poor individual did not differ from .50, M = .52, SD = .15, 95% CI [.46, .58], one-sample $t(31) = .56$, $p = .580$, $d = .10$, or by condition, $t(30) = 1.65$, $p = .110$, $d = .58$. Taken together, this suggests that, on average, infants did not have a baseline preference for attending to the rich or poor individual.

Primary Analyses. Following the same analytic procedure as Experiment 4, an independent sample t test revealed that younger infants did not systematically evaluate rich and poor individuals. Specifically, infants in the positive stimuli (M = .50, SD = .20, 95% CI [.40, .60]) and negative stimuli conditions (M = .53, SD = .25, 95% CI [.40, .65]) did not differ in their proportion of looking to the rich individual, $t(30) = .334$, $p = .741$, $d = .12$ (See Figure 4; results and interpretations converge with analyses directly comparing pretrial and test trial performance; see Supplemental Material).

Test Trial Comparison Between Experiments 4 and 7. To directly assess age-related differences in the evaluation of rich and poor individuals, we compared the present results with the results of Experiment 4, given the shared stimuli and experimental design. To investigate whether the seemingly different patterns of results were indeed statistically different, we conducted a 2 (Age Group: older vs. younger infants) × 2 (Condition: Positive Stimuli vs. Negative Stimuli) analysis of variance. There was a significant Age Group × Condition Interaction, $F(1, 60) = 4.49$, $p = .038$, $\eta_p^2 = .070$, suggesting that indeed 15-month-old and 13-month-old infants significantly differed in their patterns of looking (see Figure 4). Moreover, a similar analysis using age as a continuous variable, instead of as a categorical variable, also yielded a significant Age × Condition Interaction, $t(60) = 2.09$, $p = .041$.

Discussion

Unlike the older infants in Experiments 4 and 5 (i.e., 15-month-olds), younger infants (i.e., 13-month-olds) did not systematically associate rich and poor people with positivity or negativity. These results are important for three reasons. First, the null finding provides support for the idea that Experiment 4 should be interpreted through the lens of a matching pattern of results, insofar as looking time shifts from random looking to matching patterns of looking to mismatching patterns of looking as concepts develop. Second, given prior evidence demonstrating that 13-month-old infants evaluate fair and unfair individuals using the same paradigm (DesChamps et al., 2016), these results suggest that negative evaluations of poor individuals do not emerge early in the second year of life. Third, these null results converge with the finding that younger infants did not demonstrate affiliative preferences for rich people (Experiment 6). Taken together, in Part 3 (Experiments 6 and 7) of the present article, which focused on investigating developmental trends, we found no evidence of wealth-based biases among infants just beginning their second year of life (i.e., among 11- and 13-month-old infants).

Despite the robust nature of wealth-based biases demonstrated across five experiments in Parts 1 and 2 of the present article, the findings of Part 3 suggest a developmental transition in the use of wealth as a dimension of social evaluation between 12 and 15 months of age. Although our data cannot directly speak to the mechanisms driving this developmental shift, between 12 and 15 months of age, infants are experiencing numerous shifts in their social experiences. Specifically, the number of infants enrolled in daycare doubles from the first to second year of life (Laughlin, 2013), thereby giving infants between 12 and 15 months of age increased interactions with nonfamily members and other peers.

Moreover, around 12 months of age, infants are transitioning to independent walking. Research has demonstrated that independent walking, in particular, is related to greater exploration of the surrounding social environment, more sophisticated social interactions with mothers, and more attempts to actively engage with individuals around them (as opposed to simply observing others; Clearfield, 2011; Clearfield et al., 2008). Similarly, between 12 and 15 months of age, infants' play activities are becoming more complex, playing near peers as opposed to independently (for review, see Casby, 2003), and infants are beginning to spontaneously share resources with others (Hay, 1979; Hay & Murray, 1982). Thus, between 12 and 15 months of age, infants' social world and interest in the social world is greatly expanding and becoming more complex (Tomasello et al., 2005). Given these new and increasingly complex interactions with nonkin, infants need to develop a means to evaluate others; thus, during this age range, evaluations based on different characteristics of individuals may proliferate. Similar to this logic, the development of fairness concerns is also linked to changes in infants' social interactions, particularly the onset of sharing behaviors and experiences with older siblings (Ziv & Sommerville, 2017). Although beyond the scope of the present article, future work might consider more deeply investigating the exact social and experiential mechanisms driving the shift toward the emergence of wealth-based biases.

General Discussion

In a series of experiments, using a variety of methods, including behavioral preference, prosocial behavior, and looking-time paradigms, we establish that wealth (i.e., having more resources) is a dimension of social evaluation emerging within the second year of life. Infants beginning their second year of life (i.e., 11- to 13-month-old infants) do not seem to use wealth as a guide to their affiliative preferences (Experiment 6) or their social evaluations (Experiment 7). By 15 months of age, however, infants track wealth differences across individuals (Experiments 1–5), believe that an individual's relative wealth is stable across different types of resources (Experiment 1), prefer to help (Experiment 2) and affiliate with (Experiment 3) rich individuals (i.e., individuals with more resources), and negatively evaluate poor individuals (i.e., individuals with fewer resources; Experiments 4 and 5). Moreover, once these wealth-based biases emerged, they manifested across a variety of manipulations of wealth inequality. These wealth-based biases occurred when infants: (a) had no information about how the wealth inequality came to be (i.e., why the rich person had more resources than the poor person; Experiments 2), (b) learned that the rich person's own ungenerous actions led to the wealth inequality (Experiment 3), and (c) learned that another person's unexplained actions created the wealth inequality (Experiments 4 and 5). Across these multiple manipulations and numerous outcome measures (a rarity in infant research), the evidence converges with the postulation that considerations of people's wealth, or resource possession, is a relatively early-emerging and potent dimension of evaluation that guides social decision making.

These findings contribute to scientific and broader public discourse on wealth inequality, its pernicious nature, and the steps necessary to reduce wealth inequality and ameliorate its negative consequences. Wealth inequality is multifaceted and supported by a complex system of attitudes, beliefs, and attributions at the individual level as well as by interactional, institutional, and structural factors (Fiske et al., 2016; Markus & Stephens, 2017). U.S. adults demonstrate numerous wealth-based biases (Markus & Stephens, 2017), including dehumanizing (Loughnan et al., 2014) and distancing from poor people (Lott & Saxon, 2002) and attributing poverty to individuals' deficiencies, such as incompetence (Cuddy et al., 2009) or laziness (Bullock, 2008). In turn, these attitudes, beliefs, attributions, and behaviors are built into social policies aimed at helping those in poverty (Davis & Williams, 2020). For example, reflecting people's tendency to want to distance themselves from poor people, housing project developments as a means for affordable housing isolated poor people, at least in part because of the need for community approval to build such projects. Reflecting the idea that poor people are lazy, the Personal Responsibility and Work Opportunity Reconciliation Act of 1996, one of the last major welfare reform bills in the United States, set work requirements as part of welfare eligibility, effectively making poor people demonstrate they are worthy of receiving economic assistance. Ultimately, individuals' wealth-based biases and their manifestations within institutions and social structures mutually reinforce one another, thereby maintaining wealth inequality.

Our research provides insight into the complex process by which wealth inequality is codified into our society by providing the first catalog of the foundational beliefs, attitudes, and behaviors associated with wealth-based biases. Understanding this starting point is of critical importance because more complex beliefs and attributions stemming from conscious cognitive efforts and deliberations function to either reinforce or mitigate individuals' initial evaluative biases (Zajonc, 1980). Given that wealth-based biases develop early and manifest specifically as negative evaluations of the poor, creating a more equitable society necessitates changing negative attitudes toward poor people and avoidance of the poor early in development. Future work should investigate the processes by which these foundational biases develop into the more complex attitudes, beliefs, and attributions (e.g., endorsement of system justifying beliefs, ambivalent stereotypes; Durante & Fiske, 2017) and how these individual-level factors interact with interactional, institutional, and structural forces early in development to entrench and justify wealth inequality.

Although open questions remain as to how foundational biases develop into the multifaceted and complex system that upholds wealth-based biases and inequality, even early in development, the consequences of wealth inequality are harmful. Once wealth biases emerge, infants are willing to forego other-oriented concerns and actions (i.e., fairness concerns and prosocial acting), which promote group cohesion and societal functioning, to help and affiliate with rich people. Specifically, in Experiment 2, infants chose to help the rich person (or they chose not to help the poor person) even though they could have acted on the poor person's prior needs, a more other-oriented helping behavior (i.e., helping the poor person could serve as an indirect means of rectifying the past inequality). Furthermore, in Experiment 3, infants were even willing to de-prioritize their well-documented other-oriented concerns for fairness and prosociality (Baillargeon et al., 2015; Burns & Sommerville, 2014; DesChamps et al., 2016; Schmidt & Sommerville, 2011; Ziv & Sommerville, 2017) to affiliate with the rich person (or to avoid the poor person). That is, even though the rich person acted less generously, becoming rich as a direct result, infants still chose to affiliate with them. Robust wealth-based biases, such as those demonstrated in the present

article, may be important from an evolutionary perspective given that resource access and possession are paramount to survival (Hawley, 1999). The ability to track, remember, and behave more positively toward individuals who have more resources may increase one's chance of survival in the long run. While this evolutionary perspective and our findings support the assertion that wealth-based biases are a fundamental aspect of social life, it is necessary to identify under what circumstances people prioritize other-oriented concerns, such as group cohesion and societal functioning, over more self-interested considerations such as wealth. At the very least, our data suggest that once wealth biases begin to manifest, they quickly become a primary dimension of evaluation and behavioral preference.

Beyond merely cataloging and documenting the foundational beliefs, attitudes, and behaviors associated with wealth-based biases, we help to shed light on the potential mechanisms supporting wealth-based biases. The relatively early emergence of wealth-based biases across numerous measures suggests that these biases do not arise from particularly complex mental processes or explicit teaching and direct conversations. Instead, these biases likely build on more basic cognitive processes, unfolding within the context of ubiquitous inequality. Related literature points to at least three, nonmutually exclusive, potential mechanisms. One particularly low-level mechanism is affective tagging, in which infants simply negatively evaluate the poor individual because they are associated with a bad outcome, fewer resources (Li et al., 2014). Another possibility is that infants are making causal inferences, inferring that each individual did something to warrant their respective resource possessions. For example, infants might believe that the poor person did something bad and/or did not work for their resources (Sloane et al., 2012). The third possibility is that infants are making inferences about future interactions with each social partner and using this to guide their evaluations and behavior. That is, perhaps infants believe that the rich person will be a better future social partner than the poor person. Indeed, evidence suggests that infants prefer people who offer them more resources (Tasimi & Wynn, 2016). Infants may believe that the rich person, in general, is more likely to share their resources or share more of their resources (Ahl & Dunham, 2019; Ahl et al., 2019), even though such inferences are largely inaccurate (Piff & Robinson, 2017). Our studies were not designed to directly identify the underlying mental processes supporting the early emergence of wealth-based biases; however, given that wealth-based biases manifested broadly across domains and the evidence from preschool children (Li et al., 2014), the lower-level affective-tagging process is a likely underlying mechanism.

Despite the early development and central role that wealth-based biases play in social life, infants' attention to wealth and wealth-based biases are likely not as nuanced or complex as those manifested within adulthood or even childhood. For instance, adults and children use a broad range of cues beyond quantity of resources, such as quality of resources (Shutts et al., 2016), group membership (Brown-Iannuzzi et al., 2019; Olson et al., 2012), and even facial features (Bjornsdottir & Rule, 2017), to make inferences about individuals' wealth and subsequently act toward and evaluate those individuals. Given that our research focused on resource quantity, we cannot speak to whether wealth-based biases based on these other cues also emerge in infancy. Preliminary evidence, however, reveals that infants' negative evaluation of poor individuals does not readily generalize to novel individuals of the same group (see Supplemental Material), suggesting that while group membership is an important wealth cue ultimately triggering bias for adults and children, group membership may not play as important of a role in infancy. Understanding when these other cues become important in development can help identify the factors that most influence individuals' biases.

Although infants' wealth-based considerations have not necessarily reached childlike or adultlike levels, it is important to acknowledge that these data add to other recent evidence to paint a rich picture of infants' emerging interest in and understanding of the social world (Thiele et al., 2021). By the end of the second year of life, infants are already making sophisticated inferences about people's characteristics and future behavior. Infants also make sophisticated inferences about social relationships including inferences about who affiliates with whom (Bian & Baillargeon, 2022), who is higher in status (Mascaro & Csibra, 2012; Pun et al., 2016; Thomsen et al., 2011), and the downstream consequences of established status hierarchies (Enright et al., 2017). Moreover, when it comes to their own prosocial behaviors and interactions, they engage in mature cost–benefit analyses about how much effort to expend (Sommerville et al., 2018). Thus, by the end of the second year of life, infants are already becoming relatively sophisticated social actors in their own rights. Our data expand this literature by demonstrating that, in the second year of life, infants act in ways that can reify existing status relationships between individuals. From this perspective, it is important to continue exploring the nature of and limits to early-emerging social understanding and engagement. For example, as we continue to catalog infants' social inferences and evaluations, we can explore the extent to which they are interrelated with one another and how they change over time, which will have important implications for theory development and intervention.

Constraints on Generality

Although we present robust evidence of wealth-based biases in the second year of life, it is crucial to contextualize these findings within the broader sociocultural context of the United States. First, there is immense cultural variability in the amount of resource inequality infants worldwide are exposed to. For example, compared to countries across the globe for which there are data, the United States ranks in the 42nd percentile on measures of wealth inequality (i.e., 42% of nations have lower wealth inequality than the United States; World Inequality Database, 2022). Similarly, the extent to which and how resource inequality is reflected in people's everyday lives and in social structures varies across countries. Although not directly tested in this article, these aspects of the sociocultural context may have important consequences for the emergence and manifestation of wealth-based biases in infancy.

Second, in addition to being conducted in the United States, the majority of our infants were identified as White from middle-class backgrounds. White, middle-class contexts within the United States are replete with cultural narratives suggesting that with hard work everyone can achieve wealth (e.g., the American Dream) and that people's outcomes reflect what they deserve (e.g., Protestant Work Ethic; see: Beasley, 2001; Lipset, 1997; Schwarz, 2023). Furthermore, people in this cultural context are more likely to make internal (vs. external) attributions for others' behavior and outcomes (Ross & Nisbett, 1991). While cultural narratives and attributions may be explicitly conveyed via direct teaching and conversations, they may

also be conveyed implicitly through nonverbal means. For example, the cultural narratives prevalent in White, middle-class U.S. cultural contexts may result in systematically different emotions directed at rich and poor individuals or shape how and when parents guide infants' behavior toward resources and rich and poor individuals. If the wealth-based biases demonstrated in this article are a result of causal inferences, then these cultural narratives and ways of understanding may provide a foundation for the development of wealth-based biases (i.e., make infants particularly attuned to wealth as a dimension of social evaluation) and impact their manifestation (i.e., as negative evaluations of poor individuals). Indeed, previous research has demonstrated that receipt of objects takes on different meaning for infants as young as 10 months of age socialized in line with the broader U.S. cultural values, beliefs, and narratives (Eason et al., 2018). Taken together, to make universal claims about early-emerging wealth-based biases, it will be important to address whether such biases have similar developmental trajectories and manifestations in sociocultural contexts in which wealth inequality is differentially (a) staggering; (b) upheld by structural, institutional, and interactional factors; and (c) consequential for people's everyday functioning and outcomes.

Conclusion

Unfortunately, wealth inequality is increasing in the United States and across the world. In the midst of this staggering resource inequality, we demonstrate that wealth-based biases, specifically behavioral preferences for rich (as opposed to poor) individuals and negative evaluations of poor individuals, manifest within the second year of life and are robust. While our research sheds light on this tendency, it is crucial to situate these findings within a larger sociocultural structure (i.e., interactions, institutions, and ideas) and resist viewing wealth-based biases as justified and unchangeable. Creating a more equitable society necessitates not only acknowledging the role that wealth plays in shaping social evaluations and behavior but also recognizing that, although the early foundations of wealth-based biases manifest as preferential behavior toward rich people, these biases may stem from negative evaluations of poor people rather than positive evaluations of rich people. Undoing wealth inequality requires changing the way that people think about and act toward poor individuals early in life and designing interactions, institutions, and social structures that push against the early-emerging negative attitudes and behaviors directed toward poor individuals. Given the persistent resource inequality in the United States and around the world, it is important that future work continues to investigate the downstream consequences of wealth-based biases early in development, the potential role they play in perpetuating the status quo, and the factors that mitigate their expression.

References

Ahl, R. E., & Dunham, Y. (2019). "Wealth makes many friends": Children expect more giving from resource-rich than resource-poor individuals. *Child Development*, *90*(2), 524–543. https://doi.org/10.1111/cdev.12922

Ahl, R. E., Duong, S., & Dunham, Y. (2019). Children employ wealth cues when predicting others' sharing. *Developmental Psychology*, *55*(2), 303–314. https://doi.org/10.1037/dev0000643

Allen, M., Perry, C., & Kaufman, J. (2018). Toddlers prefer to help familiar people. *Journal of Experimental Child Psychology*, *174*, 90–102. https://doi.org/10.1016/j.jecp.2018.05.009

Anderson, L., & Martin, A. (2023). What you really want: Two-year-olds prioritise ultimate goals when helping. *Social Development*, *32*(3), 1009–1022. https://doi.org/10.1111/sode.12677

Aslin, R. N. (2007). What's in a look? *Developmental Science*, *10*(1), 48–53. https://doi.org/10.1111/j.1467-7687.2007.00563.x

Baillargeon, R., Scott, R. M., He, Z., Sloane, S., Setoh, P., Jin, K. S., & Bian, L. (2015). Psychological and sociomoral reasoning in infancy. In M. Mikulincer, P. R. Shaver, E. Borgida, & J. A. Bargh (Eds.), *APA handbook of personality and social psychology, Vol. 1. Attitudes and social cognition* (pp. 79–150). American Psychological Association. https://doi.org/10.1037/14341-003

Bas, J., & Sebastian-Galles, N. (2021). Infants' representation of social hierarchies in absence of physical dominance. *PLOS ONE*, *16*(2), Article e0245450. https://doi.org/10.1371/journal.pone.0245450

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*(3), 497–529. https://doi.org/10.1037/0033-2909.117.3.497

Beasley, V. (2001). The rhetoric of ideological consensus in the United States: American principles and American pose in presidential inaugurals. *Communication Monographs*, *68*(2), 169–183. https://doi.org/10.1080/03637750128055

Bian, L., & Baillargeon, R. (2022). When are similar individuals a group? Early reasoning about similarity and in-group support. *Psychological Science*, *33*(5), 752–764. https://doi.org/10.1177/09567976211055185

Bjornsdottir, R. T., & Rule, N. O. (2017). The visibility of social class from facial cues. *Journal of Personality and Social Psychology*, *113*(4), 530–546. https://doi.org/10.1037/pspa0000091

Borenstein, M., Hedges, L. V., Higgins, J. P., & Rothstein, H. R. (2010). A basic introduction to fixed-effect and random-effects models for meta-analysis. *Research Synthesis Methods*, *1*(2), 97–111. https://doi.org/10.1002/jrsm.12

Brown-Iannuzzi, J. L., Cooley, E., McKee, S. E., & Hyden, C. (2019). Wealthy Whites and poor Blacks: Implicit associations between racial groups and wealth predict explicit opposition toward helping the poor. *Journal of Experimental Social Psychology*, *82*, 26–34. https://doi.org/10.1016/j.jesp.2018.11.006

Bullock, H. E. (2008). Justifying inequality: A social psychological analysis of beliefs about poverty and the poor. In A. Chih LIn & D. Harris (Eds.), *The colors of poverty: Why racial and ethnic disparities persist* (pp. 52–76). Sage Publications.

Burns, M. P., & Sommerville, J. A. (2014). "I pick you": The impact of fairness and race on infants' selection of social partners. *Frontiers in Psychology*, *5*, Article 93. https://doi.org/10.3389/fpsyg.2014.00093

Casby, M. W. (2003). The development of play in infants, toddlers, and young children. *Communication Disorders Quarterly*, *24*(4), 163–174. https://doi.org/10.1177/15257401030240040201

Casstevens, R. M. (2007). *Hab: Java habituation software*. Java.

Clearfield, M. W. (2011). Learning to walk changes infants' social interactions. *Infant Behavior and Development*, *34*(1), 15–25. https://doi.org/10.1016/j.infbeh.2010.04.008

Clearfield, M. W., Osborne, C. N., & Mullen, M. (2008). Learning by looking: Infants' social looking behavior across the transition from crawling to walking. *Journal of Experimental Child Psychology*, *100*(4), 297–307. https://doi.org/10.1016/j.jecp.2008.03.005

Cuddy, A. J., Fiske, S. T., Kwan, V. S., Glick, P., Demoulin, S., Leyens, J. P., Bond, M. H., Croizet, J. C., Ellemers, N., Sleebos, E., Htun, T. T., Kim, H. J., Maio, G., Perry, J., Petkova, K., Todorov, V., Rodríguez-Bailón, R., Morales, E., Moya, M., … Ziegler, R. (2009). Stereotype content model across cultures: Towards universal similarities and some differences. *British Journal of Social Psychology*, *48*(1), 1–33. https://doi.org/10.1348/014466608X314935

Datavyu Team. (2014). *Datavyu: A video coding tool* [Databrary Project]. New York University. https://datavyu.org

Davis, R. P., & Williams, W. R. (2020). Bringing psychologists to the fight against deep poverty. *American Psychologist*, *75*(5), 655–667. https://doi.org/10.1037/amp0000650

DesChamps, T. D., Eason, A. E., & Sommerville, J. A. (2016). Infants associate praise and admonishment with fair and unfair individuals. *Infancy*, *21*(4), 478–504. https://doi.org/10.1111/infa.12117

Dunfield, K., Kuhlmeier, V. A., O'Connell, L., & Kelley, E. (2011). Examining the diversity of prosocial behavior: Helping, sharing, and comforting in infancy. *Infancy*, *16*(3), 227–247. https://doi.org/10.1111/j.1532-7078.2010.00041.x

Durante, F., & Fiske, S. T. (2017). How social-class stereotypes maintain inequality. *Current Opinion in Psychology*, *18*, 43–48. https://doi.org/10.1016/j.copsyc.2017.07.033

Eason, A. E., Doctor, D., Chang, E., Kushnir, T., & Sommerville, J. A. (2018). The choice is yours: Infants' expectations about an agent's future behavior based on taking and receiving actions. *Developmental Psychology*, *54*(5), 829–841. https://doi.org/10.1037/dev0000482

Eason, A. E., Enright, E. A., Weng, S., Horton, R., Sitch, M., & Sommerville, J. (2024, January 24). *The haves & have nots: Infants use wealth to guide social behavior and evaluation*. PsyArXiv. https://osf.io/2v97s/?view_only=1ea69030ecd84a088c448ca80da80c34

Enright, E. A., Alonso, D. J., Lee, B. M., & Olson, K. R. (2020). Children's understanding and use of four dimensions of social status. *Journal of Cognition and Development*, *21*(4), 573–602. https://doi.org/10.1080/15248372.2020.1797745

Enright, E. A., Gweon, H., & Sommerville, J. A. (2017). 'To the victor go the spoils': Infants expect resources to align with dominance structures. *Cognition*, *164*, 8–21. https://doi.org/10.1016/j.cognition.2017.03.008

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175–191. https://doi.org/10.3758/BF03193146

Feigenson, L., Carey, S., & Hauser, M. (2002). The representations underlying infants' choice of more: Object files versus analog magnitudes. *Psychological Science*, *13*(2), 150–156. https://doi.org/10.1111/1467-9280.00427

Feigenson, L., Dehaene, S., & Spelke, E. (2004). Core systems of number. *Trends in Cognitive Sciences*, *8*(7), 307–314. https://doi.org/10.1016/j.tics.2004.05.002

Ferry, A. L., Hespos, S. J., & Waxman, S. R. (2013). Nonhuman primate vocalizations support categorization in very young human infants. *Proceedings of the National Academy of Sciences of the United States of America*, *110*(38), 15231–15235. https://doi.org/10.1073/pnas.1221166110

Fiske, S. T. (2002). Five core social motives, plus or minus five. In S. J. Spencer, S. Fein, M. P. Zanna, & J. Olson (Eds.), *Motivated social perception: The Ontario symposium* (Vol. 9, pp. 233–246). Erlbaum.

Fiske, S. T. (2004). *Social beings: A core motives approach to social psychology*. Wiley.

Fiske, S. T., Dupree, C. H., Nicolas, G., & Swencionis, J. K. (2016). Status, power, and intergroup relations: The personal is the societal. *Current Opinion in Psychology*, *11*, 44–48. https://doi.org/10.1016/j.copsyc.2016.05.012

Flom, R., Whipple, H., & Hyde, D. (2009). Infants' intermodal perception of canine (*Canis familairis*) facial expressions and vocalizations. *Developmental Psychology*, *45*(4), 1143–1151. https://doi.org/10.1037/a0015367

Geraci, A., & Surian, L. (2011). The developmental roots of fairness: Infants' reactions to equal and unequal distributions of resources. *Developmental Science*, *14*(5), 1012–1020. https://doi.org/10.1111/j.1467-7687.2011.01048.x

Goh, J. X., Hall, J. A., & Rosenthal, R. (2016). Mini meta-analysis of your own studies: Some arguments on why and a primer on how. *Social and Personality Psychology Compass*, *10*(10), 535–549. https://doi.org/10.1111/spc3.12267

Goodman, M. D., & Gareis, K. C. (1993). The influence of status on decisions to help. *The Journal of Social Psychology*, *133*(1), 23–31. https://doi.org/10.1080/00224545.1993.9712115

Grossmann, T. (2018). How to build a helpful baby: A look at the roots of prosociality in infancy. *Current Opinion in Psychology*, *20*, 21–24. https://doi.org/10.1016/j.copsyc.2017.08.007

Hamlin, J. K., & Wynn, K. (2011). Young infants prefer prosocial to antisocial others. *Cognitive Development*, *26*(1), 30–39. https://doi.org/10.1016/j.cogdev.2010.09.001

Hamlin, J. K., Wynn, K., & Bloom, P. (2007). Social evaluation by preverbal infants. *Nature*, *450*(7169), 557–559. https://doi.org/10.1038/nature06288

Hamlin, J. K., Wynn, K., Bloom, P., & Mahajan, N. (2011). How infants and toddlers react to antisocial others. *Proceedings of the National Academy of Sciences of the United States of America*, *108*(50), 19931–19936. https://doi.org/10.1073/pnas.1110306108

Hawley, P. H. (1999). The ontogenesis of social dominance: A strategy-based evolutionary perspective. *Developmental Review*, *19*(1), 97–132. https://doi.org/10.1006/drev.1998.0470

Hay, D. F. (1979). Cooperative interactions and sharing between very young children and their parents. *Developmental Psychology*, *15*(6), 647–653. https://doi.org/10.1037/0012-1649.15.6.647

Hay, D. F., & Murray, P. (1982). Giving and requesting: Social facilitation of infants' offers to adults. *Infant Behavior and Development*, *5*(2–4), 301–310. https://doi.org/10.1016/S0163-6383(82)80039-8

Kanakogi, Y., Okumura, Y., Inoue, Y., Kitazaki, M., & Itakura, S. (2013). Rudimentary sympathy in preverbal infants: Preference for others in distress. *PLOS ONE*, *8*(6), Article e65292. https://doi.org/10.1371/journal.pone.0065292

Kinzler, K. D., Dupoux, E., & Spelke, E. S. (2007). The native language of social cognition. *Proceedings of the National Academy of Sciences of the United States of America*, *104*(30), 12577–12580. https://doi.org/10.1073/pnas.0705345104

Kinzler, K. D., Shutts, K., Dejesus, J., & Spelke, E. S. (2009). Accent trumps race in guiding children's social preferences. *Social Cognition*, *27*(4), 623–634. https://doi.org/10.1521/soco.2009.27.4.623

Kinzler, K. D., & Spelke, E. S. (2011). Do infants show social preferences for people differing in race? *Cognition*, *119*(1), 1–9. https://doi.org/10.1016/j.cognition.2010.10.019

Köster, M., Ohmer, X., Nguyen, T. D., & Kärtner, J. (2016). Infants understand others' needs. *Psychological Science*, *27*(4), 542–548. https://doi.org/10.1177/0956797615627426

Laughlin, L. (2013). *Who's minding the kids? Child care arrangements, Spring 2011*. US Department of Commerce, Bureau of the Census.

Li, V., Spitzer, B., & Olson, K. R. (2014). Preschoolers reduce inequality while favoring individuals with more. *Child Development*, *85*(3), 1123–1133. https://doi.org/10.1111/cdev.12198

Lipset, S. M. (1997). *American exceptionalism: A double-edged sword*. W.W. Norton & Company.

Lott, B., & Saxon, S. (2002). The influence of ethnicity, social class, and context on judgments about U.S. women. *The Journal of Social Psychology*, *142*(4), 481–499. https://doi.org/10.1080/00224540209603913

Loughnan, S., Haslam, N., Sutton, R. M., & Spencer, B. (2014). Dehumanization and social class. *Social Psychology*, *45*(1), 54–61. https://doi.org/10.1027/1864-9335/a000159

Lucca, K., Pospisil, J., & Sommerville, J. A. (2018). Fairness informs social decision making in infancy. *PLOS ONE*, *13*(2), Article e0192848. https://doi.org/10.1371/journal.pone.0192848

Mahajan, N., & Wynn, K. (2012). Origins of "us" versus "them": Prelinguistic infants prefer similar others. *Cognition*, *124*(2), 227–233. https://doi.org/10.1016/j.cognition.2012.05.003

Margoni, F., Baillargeon, R., & Surian, L. (2018). Infants distinguish between leaders and bullies. *Proceedings of the National Academy of*

Sciences of the United States of America, *115*(38), E8835–E8843. https://doi.org/10.1073/pnas.1801677115

Markus, H. R., & Stephens, N. M. (2017). Editorial overview: Inequality and social class: The psychological and behavioral consequences of inequality and social class: A theoretical integration. *Current Opinion in Psychology*, *18*, iv–xii. https://doi.org/10.1016/j.copsyc.2017.11.001

Martin, A., & Olson, K. R. (2015). Beyond good and evil: What motivations underlie children's prosocial behavior? *Perspectives on Psychological Science*, *10*(2), 159–175. https://doi.org/10.1177/1745691615568998

Mascaro, O., & Csibra, G. (2012). Representation of stable social dominance relations by human infants. *Proceedings of the National Academy of Sciences of the United States of America*, *109*(18), 6862–6867. https://doi.org/10.1073/pnas.1113194109

Mascaro, O., & Csibra, G. (2014). Human infants' learning of social structures: The case of dominance hierarchy. *Psychological Science*, *25*(1), 250–255. https://doi.org/10.1177/0956797613500509

Mistry, R. S., Brown, C. S., White, E. S., Chow, K. A., & Gillen-O'Neel, C. (2015). Elementary school children's reasoning about social class: A mixed-methods study. *Child Development*, *86*(5), 1653–1671. https://doi.org/10.1111/cdev.12407

Mookherjee, H. N., & Hogan, H. W. (1981). Class consciousness among young rural children. *The Journal of Social Psychology*, *114*(1), 91–98. https://doi.org/10.1080/00224545.1981.9922730

Norton, M. I., & Ariely, D. (2011). Building a better America—One wealth quintile at a time. *Perspectives on Psychological Science*, *6*(1), 9–12. https://doi.org/10.1177/1745691610393524

Oakes, L. M. (2017). Sample size, statistical power, and false conclusions in infant looking-time research. *Infancy*, *22*(4), 436–469. https://doi.org/10.1111/infa.12186

Olson, K. R., Shutts, K., Kinzler, K. D., & Weisman, K. G. (2012). Children associate racial groups with wealth: Evidence from South Africa. *Child Development*, *83*(6), 1884–1899. https://doi.org/10.1111/j.1467-8624.2012.01819.x

Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science*, *349*(6251), Article aac4716. https://doi.org/10.1126/science.aac4716

Osborne, Y. H., & Rappaport, N. B. (1985). Sentencing severity with mock jurors: Predictive validity of three variable categories. *Behavioral Sciences & The Law*, *3*(4), 467–473. https://doi.org/10.1002/bsl.2370030411

Paulus, M. (2014). The early origins of human charity: Developmental changes in preschoolers' sharing with poor and wealthy individuals. *Frontiers in Psychology*, *5*, Article 344. https://doi.org/10.3389/fpsyg.2014.00344

Piff, P. K., & Robinson, A. R. (2017). Social class and prosocial behavior: Current evidence, caveats, and questions. *Current Opinion in Psychology*, *18*, 6–10. https://doi.org/10.1016/j.copsyc.2017.06.003

Pun, A., Birch, S. A., & Baron, A. S. (2016). Infants use relative numerical group size to infer social dominance. *Proceedings of the National Academy of Sciences of the United States of America*, *113*(9), 2376–2381. https://doi.org/10.1073/pnas.1514879113

Ross, L., & Nisbett, R. E. (1991). *The person and the situation: Perspectives of social psychology*. McGraw-Hill.

Schmidt, M. F. H., & Sommerville, J. A. (2011). Fairness expectations and altruistic sharing in 15-month-old human infants. *PLOS ONE*, *6*(10), Article e23223. https://doi.org/10.1371/journal.pone.0023223

Schwarz, G. (2023). *American dream snapshot 2023: The health and state of the American dream*. Archbridge Institute. https://www.archbridgeinstitute.org/american-dream-snapshot/

Shutts, K., Brey, E. L., Dornbusch, L. A., Slywotzky, N., & Olson, K. R. (2016). Children use wealth cues to evaluate others. *PLOS ONE*, *11*(3), Article e0149360. https://doi.org/10.1371/journal.pone.0149360

Sloane, S., Baillargeon, R., & Premack, D. (2012). Do infants have a sense of fairness? *Psychological Science*, *23*(2), 196–204. https://doi.org/10.1177/0956797611422072

Snyder-Mackler, N., Burger, J. R., Gaydosh, L., Belsky, D. W., Noppert, G. A., Campos, F. A., Bartolomucci, A., Yang, Y. C., Aiello, A. E., O'Rand, A., Harris, K. M., Shively, C. A., Alberts, S. C., & Tung, J. (2020). Social determinants of health and survival in humans and other animals. *Science*, *368*(6493), Article eaax9553. https://doi.org/10.1126/science.aax9553

Sommerville, J. A., Enright, E. A., Horton, R. O., Lucca, K., Sitch, M. J., & Kirchner-Adelhart, S. (2018). Infants' prosocial behavior is governed by cost–benefit analyses. *Cognition*, *177*, 12–20. https://doi.org/10.1016/j.cognition.2018.03.021

Tasimi, A., & Wynn, K. (2016). Costly rejection of wrongdoers by infants and children. *Cognition*, *151*, 76–79. https://doi.org/10.1016/j.cognition.2016.03.004

Thiele, M., Hepach, R., Michel, C., & Haun, D. (2021). Infants' preference for social interactions increases from 7 to 13 months of age. *Child Development*, *92*(6), 2577–2594. https://doi.org/10.1111/cdev.13636

Thomas, A. J., & Sarnecka, B. W. (2019). Infants choose those who defer in conflicts. *Current Biology*, *29*(13), 2183–2189.e5. https://doi.org/10.1016/j.cub.2019.05.054

Thomsen, L., Frankenhuis, W. E., Ingold-Smith, M., & Carey, S. (2011). Big and mighty: Preverbal infants mentally represent social dominance. *Science*, *331*(6016), 477–480. https://doi.org/10.1126/science.1199198

Tomasello, M., Carpenter, M., Call, J., Behne, T., & Moll, H. (2005). Understanding and sharing intentions: The origins of cultural cognition. *Behavioral and Brain Sciences*, *28*(5), 675–691. https://doi.org/10.1017/S0140525X05000129

Viechtbauer, W. (2010). Conducting meta-analyses in *R* with the metafor package. *Journal of Statistical Software*, *36*(3), 1–48. https://doi.org/10.18637/jss.v036.i03

Warneken, F., & Tomasello, M. (2006). Altruistic helping in human infants and young chimpanzees. *Science*, *311*(5765), 1301–1303. https://doi.org/10.1126/science.1121448

Warneken, F., & Tomasello, M. (2013). Parental presence and encouragement do not influence helping in young children. *Infancy*, *18*(3), 345–368. https://doi.org/10.1111/j.1532-7078.2012.00120.x

Wolff, E. N. (2021). *Household wealth trends in the United States, 1962 to 2019: Median wealth rebounds … but not enough* (No. w28383). National Bureau of Economic Research.

World Inequality Database. (2022). World inequality ranking by country 2022. *Global Finance Magazine*. https://gfmag.com/data/economic-data/world-inequality-ranking/

Wörle, M., & Paulus, M. (2018). Normative expectations about fairness: The development of a charity norm in preschoolers. *Journal of Experimental Child Psychology*, *165*, 66–84. https://doi.org/10.1016/j.jecp.2017.03.016

Zajonc, R. B. (1980). Feeling and thinking: Preferences need no inferences. *American Psychologist*, *35*(2), 151–175. https://doi.org/10.1037/0003-066X.35.2.151

Ziv, T., & Sommerville, J. A. (2017). Developmental differences in infants' fairness expectations from 6 to 15 months of age. *Child Development*, *88*(6), 1930–1951. https://doi.org/10.1111/cdev.12674

Received May 31, 2019
Revision received January 24, 2024
Accepted January 29, 2024 ■