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Emerging complexity in children's conceptualization of the wealthy and the poor

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Abstract

Past work suggests that children have an overly rosy view of rich people that stays consistent across childhood. However, adults do not show explicit pro-rich biases and even hold negative stereotypes against the rich (e.g., thinking that rich people are cold and greedy). When does this developmental shift occur, and when do children develop more complex and differentiated understandings of the wealthy and the poor? The current work documents the developmental trajectory of 4–12-yr-old primarily American middle-class children's conceptualizations of the wealthy and the poor (total $N =$ 164). We find: (1) age-related decreases in pro-rich preferences and stereotypes relative to the poor; (2) domain-sensitive stereotypes across prosociality, talent, and effort; (3) resource-specific behavioral expectations such that with age children increasingly expect the wealthy to contribute more material resources but not more time than the poor; (4) an increasing recognition of the unfairness of the wealth gap between the wealthy and the poor; and (5) a developing understanding of the link between wealth and power. In sum, this work illuminates the emergence of more complex understandings of wealth, poverty, and inequality.

KEYWORDS
behavioral expectations, pro-rich bias, social inequalities, stereotypes, unfairness, wealth-power links

1 | INTRODUCTION

Economic inequality is one of the defining issues of our time, especially as the wealth gap has increased in recent years (Congressional Budget Office, 2016; Roser, 2013). Critically, the wealthy not only hold more material resources but also enjoy increased ability to affect or control their own life outcomes, experience greater leniency for misbehaviors, and can leverage wealth to acquire more advantages and opportunities (Deaton, 2013a, 2013b; Singal, 2017). These disparities are also often replicated across generations, further enlarging the wealth gap (Ortiz & Briggs, 2003). Children's social development unfolds while experiencing and observing these inequalities. In the current work, we explore children's evaluations of and lay beliefs about the rich and the poor, especially how this reasoning develops between ages 4 and 12, important years for children's emerging understanding of social structures.

Previous work on the early understanding of the wealthy, the poor, and of wealth inequalities generally shows a relative "pro-rich bias", that is, more favorable attitudes, evaluations, and expectations associated with rich people compared to poor people (using "rich/poor" verbal labels or symbols of wealth such as toys, cars, and houses). Given the widespread use of relative measures, this "pro-rich" bias could equivalently be described as a relative "anti-poor" bias. Beginning from the preschool age, children are found to prefer the rich over the poor and evaluate the rich more positively (Horwitz et al., 2014; Li et al., 2014; Shutts et al., 2016). Children also choose to befriend the rich (Ahl & Dunham, 2017; Li et al., 2014; Shutts et al., 2016), and these preferences are robust across variation in the affluence of participants' families (Shutts et al., 2016). Turning to specific traits, children think the rich are nicer (Li et al., 2014; Roussos & Dunham, 2016), more competent (Roussos & Dunham, 2016; Shutts

et al., 2016; Sigelman, 2012), and more popular (Shutts et al., 2016; Sigelman, 2012) than the poor. In addition, children believe that the rich are more likely to share their resources than the poor (Ahl et al., 2019) and that the poor might be unable to realize their goals due to resource barriers and discrimination (Weinger, 2000). In a separate line of work on explanations and justifications of inequalities between the rich and the poor, children also favor merit-based explanations that justify such inequalities (Leahy, 1983; Mistry et al., 2016; Sigelman, 2012).

However, adults reason about the rich and the poor in a quite different and more complex way. For example, they display ambivalence, attributing both positive and negative traits to both the rich and the poor, and both favoring and envying the rich (e.g., Kay & Jost, 2003; Wu et al., 2018). Supporting these differentiated beliefs, research also shows that rich categories are viewed as competent but cold, and poor categories are viewed as warm but incompetent (Durante et al., 2017; Wu et al., 2018), corresponding to the Stereotype Content Model (SCM; Fiske et al., 2002; for developmental work, see Roussos & Dunham, 2016). Another form of more complex understanding about wealth in adults involves associations between wealth and social power (e.g., realizing that the rich are more able to influence personal and societal outcomes and to become leaders than are the poor; Zakaria, 1999).

Some scattered evidence has recently begun to illuminate children's progression beyond a simple pro-rich bias. For example, by middle childhood, children judge inequality in wealth as unfair (e.g., around ages 7 and 8, Chafel & Neitzel, 2005; Hussak & Cimpian, 2015) and they think we should help the poor (Mistry et al., 2016). Aligning with these views, children sometimes act in ways so as to *rectify* resource disparities, patterns not explained by the pro-rich bias (e.g., around ages 4 and 5, see Li et al., 2014; Paulus, 2014; children also begin to rectify some race-based resource inequalities around ages 10 and 11, see Elenbaas & Killen, 2016; Elenbaas et al., 2016). Finally, older children and adolescents sometimes evaluate the rich in a negatively stereotyped manner. Most notably, one study finds negative stereotyping of the rich in children above age 10 (Mistry et al., 2015), but the details of this shift are still unclear.

What remains unknown, then, is when and how children gradually develop a more sophisticated conceptualization of both the rich and the poor that includes more complex or ambivalent forms of reasoning. A critical case concerns the understanding of power dynamics. As mentioned above, wealth in the real world does not only involve material wealth, it also interplays with social power (Deaton, 2013a, 2013b; Singal, 2017). When do children understand that wealthy people are more able to affect or control their own life outcomes as well as influence broader societal trends? Developmental work on this topic is crucial because it helps us distinguish early intuitive theories from later societal input, which often relate to one another in complicated ways (Shtulman & Lombrozo, 2016). It may also contribute to interventions to reduce the stigma of poverty, which are potentially more effective at the stage when those biases and stereotypes are just forming (e.g. Heberle & Carter, 2015).

RESEARCH HIGHLIGHTS

- We examine the emergence and development of more complex and differentiated understandings of wealth, poverty, and social inequality.
- American middle-class children gradually grow less positive towards the wealthy relative to the poor during early and middle childhood.
- Older children increasingly recognize that the wealthy have disproportionate social power to affect a broad range of outcomes.
- These early conceptualizations may set the stage for adult reasoning, including adult decisions about how society should address issues related to inequality and poverty.

1.1 | The present study

Across two cross-sectional studies we investigated developmental changes in children's conceptualization of the wealthy and the poor during early and middle childhood. We tested children aged 4–12, important ages in children's development of understanding of fairness (McAuliffe et al., 2017) and social power (Gülgöz, 2015; Gülgöz & Gelman, 2017), as well as the ability to take different perspectives when reasoning about other minds (Epley et al., 2004). These understandings and abilities might be potentially relevant cognitive milestones in children's reasoning about wealthy and poor groups. While our investigation was not motivated by any single theoretical perspective, these considerations suggested to us that we were well-positioned to document substantial changes in children's conceptualizations of wealth and poverty, providing vital data to contribute to future theory-building.

We introduced children to two novel social groups, one rich and one poor. We then assessed children's understandings of these two groups in relation to one another. We chose relational and relative measures in part because wealth and class categories are inherently relational. Further, relational measures also tend to be more sensitive with young children in revealing differences between groups than non-relational measures as the former directly contrast the groups (see also Ahl & Dunham, 2017; Horwitz et al., 2014; Li et al., 2014; Shutts et al., 2016 for the use of relational measures on similar topics).

In order to draw a more complete picture of children's developing conceptualization of the wealthy, the poor, and social inequality, we included measures of two components that have featured prominently in past work, but rarely in the same study: *evaluations* and *expectations* (liking, stereotypes, and expectation of contributions), and *explanations* and *justifications* (explanations of wealth and poverty and fairness judgments of inequality). A particular goal was to examine when conceptualizations begin to go beyond mere positivity, become more differentiated, and increase in complexity. We did this by first carefully

refining the evaluations and expectations measures such that children could not simply answer based on their attraction to possessions. We also deliberately included questions that are *explicitly not* related to material resources (unlike in past work e.g., Ahl & Dunham, 2017), such as the contribution of physical effort and time, to further explore domain sensitivity in children's reasoning. This allows us to better evaluate whether pro-rich biases are driven by general positivity towards the rich or if that positivity is more tightly centered on their relative resource wealth. Second, we explored whether children differentiated different domains (stereotypes of warmth vs. competence, expectations of resource vs. non-resource contributions). Given past work finding that younger children do not yet clearly distinguish these two stereotype domains (Roussos & Dunham, 2016), we expected that differentiation between them would increase as a function of age. Furthermore, we also included a third component that we see as a crucial gap in the literature, children's richer understanding of links between wealth and social power. Following recent work on developmental changes in children's understanding of social power and how it connects with age and gender (Gülgöz, 2015; Gülgöz & Gelman, 2017; Liben et al., 2001), our work can further illuminate how children gradually understand the connections between wealth and social power. In particular, here we investigated when children begin to realize that the wealthy can exert outsized influence on their social environment in ways that go beyond the simple expenditure of resources. This could shed new light on children's understanding of the social consequences of being wealthy or poor as well as their naïve sociology with respect to wealth and power dynamics in the world.

We anticipated several possible patterns of results. According to past work, children might display a pro-rich bias across all measures and ages or be pro-rich on some but show no clear patterns on others, which would not provide strong evidence for a complex or differentiated conceptualization. If, alternatively, children gradually develop a more mature and complex conceptualization of the wealthy and the poor, we would expect differentiated patterns emerging with age. Particularly, we would expect these patterns: (1) a decrease of pro-rich bias across evaluations and expectations; (2) different patterns across different domains; and (3) an increased understanding of the wealth-power link. Study 1 was focused on the first two issues while Study 2 also further explored the third.

2 | STUDY 1

Study 1 was our first thorough examination of how children gradually develop a more mature understanding of the wealthy, the poor, and social inequalities. We included measures tapping both *evaluations and expectations* and *explanations and justifications* components, and tested children of different age groups (early to middle childhood). Study 1 pre-registration can be found at https://aspredicted.org/9uj5r.pdf. All study materials (full scripts with visual displays), data, and analysis code for the studies can be found at https://osf.io/52wsv.

2.1 | Method

2.1.1 | Participants

Participants were 32 four–five-yr-olds (M = 4.94, SD = .59, range 4.04–5.94, 19 females, 13 males) and 30 seven–eight-yr-olds (M = 8.03, SD = .65, range 7.02–8.94, nine females, 21 males). This sample size was decided following past work in this field (e.g., Horwitz et al., 2014); power analyses indicated that n = 60 was required to detect a small to medium effect with >80% power (linear multiple regression in a random model, two tails, up to three predictors, $\alpha = 0.05$, $\rho^2 = 0.2$; using G*Power, Faul et al., 2007). We note that the final sample (n = 62) slightly exceeded our pre-registered sample size (n = 60) because we aimed for testing a larger sample to account for possible data exclusions. Among the 66% participants (n = 41) whose parents provided racial information, there were 32 White participants, three Asian participants, three biracial or multiracial participants, two Hispanic/Latinx participants, and one Black participant. An additional two children were tested but excluded from data analyses due to failure to pass memory check questions. During the data collection stage of Study 1, we had the unexpected opportunity to include a sample of 20 older children (9–12-yr-olds, M = 11.11, SD = 0.99, range 9.05–12.68, 13 females, seven males). Among the 11 participants whose parents provided racial information, there were eight White and three Hispanic or Latinx participants. While this group was not part of our pre-registration, we elected to extend the same pre-registered methods and analysis plan to this additional sample (adding this sample does not materially change any results concerning the two younger age groups).

For studies reported in the paper, participants were tested in the lab, at local museums, or at local schools in New England by the first author or trained research assistants. Family income for individual participants was not available, but given the demographic profiles of our data collection sites, we believe that most participants came from middle-class families. In addition, based on data collected for another study with a similar age range and same data collection database and sites, the majority of the children came from middle-class families and viewed their own family as neither rich nor poor, but somewhere in the middle (like most American adults; Fiske et al., 2002). Studies reported in this paper were approved by Yale University Institutional Review Boards, project title "Development of Social Category Knowledge", protocol #1305012100. Written parental consent was obtained in advance of all testing; children also provided verbal assent prior to beginning the procedures.

2.1.2 | Materials and design

We used Microsoft PowerPoint, presented on a laptop computer, to introduce participants to two novel groups, one rich and one poor, and then collected data via Qualtrics on the same laptop to eliminate the need for data entry. There were three main dependent measures (in the following order): liking, stereotypes, and perception of inequality,

TABLE 1 Study 1 stereotypes measure: full script (exact wording). There were six scenarios (three domains crossed with two valences)

Kubus and Vivoes all go to the same school. I will tell you something that happened at their school and ask you to guess who did it, okay?		
Domain	Positive	Negative
Prosociality	A student lost a book and felt very sad. Who helped this student look for the book?	A student was pushed down and fell today. Who pushed this student down?
Talent	They took a really hard test that measured how smart they were. Who got more questions right?	They all tried to learn something new. Who learned slower and made more mistakes?
Effort	They tried to solve a puzzle. Who worked harder for this puzzle? (prompt after each question: Kubus or Vivoes?)	Their teacher said they needed to work to get a prize. Who wanted the prize but didn't want to work?

followed by a section of exploratory open-ended questions (detailed in Procedure). The former two measures tapped at the evaluations and expectations component while the latter two were about the explanations and justifications component. On our stereotypes measure, to more clearly examine when children's conceptualization of the wealthy and the poor becomes more nuanced, we used questions that are *explicitly not* related to material resources (so children could not simply answer those questions based on attraction to possessions) and also explored domain differences as described below.

We used social *groups* rather than rich and poor *individuals* because we aimed to probe true category-based reasoning about the rich and the poor that was not merely driven by specific features of any one individual (following Horwitz et al., 2014). We used *novel* social groups instead of *real-world* social groups so as to probe a generalized understanding of the rich and the poor, rather than participants' prior knowledge of specific social groups (following the literature on minimal groups; e.g., Dunham, 2018). In addition, we introduced children to rich and poor groups in the beginning and then at test only referred to the group members by group names. This allowed us to present test questions without displaying possessions or objects that differed in wealth, thereby probing pure category-based rather than possession-based reasoning.

2.2 | Procedure

2.2.1 | Group introduction

Participants heard a story accompanied by illustrations about two novel groups of people, Kubus and Vivoes (cartoon figures of people wearing red or blue shirts) living in two different villages on a faraway island. One group lived in nice houses, played on nice playgrounds, and had many nice toys; while the other group did not. The names for the rich versus poor group and the order in which the groups were introduced were counterbalanced across participants. Importantly, we described and depicted possessions varying in quality and quantity but never used the words "rich" or "poor" to introduce the groups (following past work e.g. Horwitz et al., 2014). After the brief introduction, as a first comprehension check, we asked participants to match the possessions with the groups. Two participants failed to pass this memory check and were excluded from data analyses.

2.2.2 | Liking (one item)

We showed participants pictures of the two groups, side by side, and asked "*who do you like more, Kubus or Vivoes*", followed by a scale "*do you like them a little more or a lot more*" (using smiley faces as visual aid), creating a 4-point liking scale (pre-tested to be comprehensible to children as young as age 4; similar liking questions were adapted from Horwitz et al., 2014; Li et al., 2014; Shutts et al., 2016; similar scales were adapted from Dunham et al., 2011). We also asked them to explain their answers as a follow-up exploratory question.

2.2.3 | Stereotypes (six items; see Table 1)

Participants were asked to guess whether Kubus or Vivoes did a certain behavior in different scenarios (pre-tested to ensure comprehension). There were six scenarios presented in a randomized order (see Table 1 for exact wording; three domains, i.e., prosociality, talent, and effort, and each crossed with two valences, i.e., positive and negative). We chose these three domains according to literature on the Stereotype Content Model, that is, warmth and competence (Fiske et al., 2002). We measured prosociality as one proxy for warmth following past developmental work (Li et al., 2014; Roussos & Dunham, 2016), and further split competence into talent (competence from natural talents) and effort (competence acquired through effort), a distinction frequently drawn in the literature on reasoning about ability and success (e.g., Brown et al., 2018; Tsay, 2016; Tsay & Banaji, 2011) as well as in children's own free explanations of wealth and poverty (Leahy, 1983). Given the age-related decrease in essentialism of status-related groups such as class (i.e., a declining tendency to see such groups as based on innate differences; Davoodi et al., 2020) and the likelihood that talent is thought of as more innate than effort, we might also expect to see different patterns of results for these domains across age. Finally, we asked participants to explain their answer to the last question as an exploratory follow-up.

2.2.4 | Perception of inequality (one item)

We showed participants pictures of contrasting possessions side by side, and asked "*Do you think it is fair or not fair that some people have more and better things than other people*", followed by a scale "*is it a little*
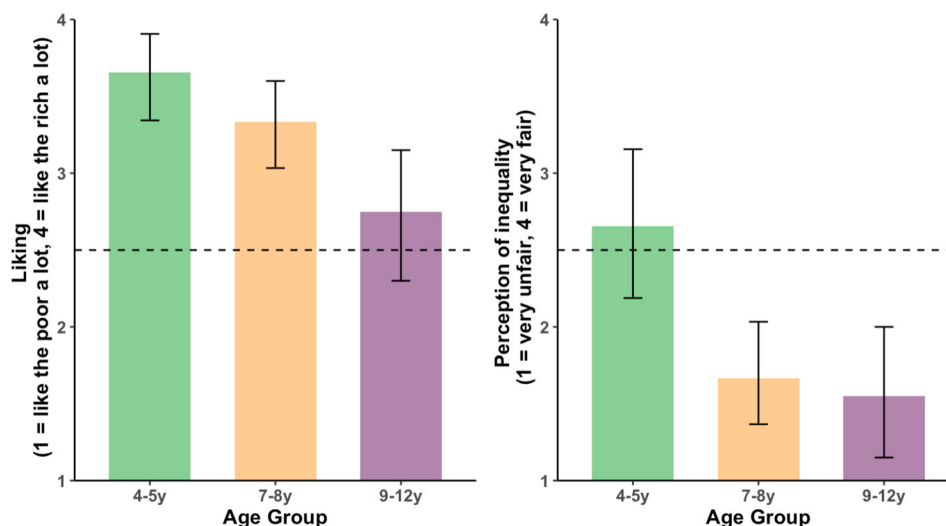
FIGURE 1 Study 1 liking and perception of inequality. Results show liking (range 1–4, higher values indicate stronger pro-rich bias) and perception of inequality (range 1–4, higher values indicate stronger fairness judgment) ratings (4–12-yr-olds). Error bars represent 95% bootstrapped confidence intervals

(not) fair or very (not) fair" (using the thumb-up and thumb-down visual aid; pre-tested to ensure comprehension; adapted from e.g., Leahy, 1983). We also asked them to explain their answers as a follow-up exploratory question.

2.2.5 | Open-ended explanations section (three items)

In the last section, we asked participants to indicate which group was rich (84% of children answered this question correctly)[1], followed by three open-ended explanation questions, *"why are some people rich"*, *"why are some people poor"*, and *"how can poor people get rich"* (in this order; pre-tested to ensure comprehension; adapted from e.g., Leahy, 1981). If participants did not answer immediately, we prompted their answers with "can you make a guess" and "there are no right or wrong answers, I am just interested in what you think". Experimenters entered their answers into the relevant textboxes in Qualtrics during testing.

2.3 | Results

As noted above, conclusions regarding the two younger age groups did not change when we included the additional sample of 9–12-yr-olds. Therefore, for ease of presentation we report results for all three age groups below, and provide results with only the two younger age groups (as specified in our pre-registration) in supplemental materials. On *Liking* and *Perceptions of Inequality* measures, here we report the mean-centered model predictions and 95% confidence intervals (*CIs*); in these centered models, statistically significant positive deviations from 0 indicate pro-rich preferences or the perception of inequality as fair, while significant negative deviations from 0 indicate pro-poor preferences or the perception of inequality as unfair. On *Stereotypes*, here

we report the model predictions and 95% *CIs*; in these models, statistically significant positive deviations from 0 indicate pro-rich stereotypes while statistically significant negative deviations from 0 indicate pro-poor stereotypes. Figures for these measures are plotted using raw scale units, and *M*s and *SD*s in the raw scale units are available in supplemental materials in Table S1. For both studies, we also report cross-measure correlations and detailed model outputs in supplemental materials (Figures S1 and S2, and Tables S5–S13). Preliminary analyses revealed no participant gender or version (which group was the rich group in the story) effects so these factors were not discussed further.

2.3.1 | Liking

We fit a linear regression model predicting liking as a function of age group (4–5-yr, 7–8-yr, and 9–12-yr). As shown in Figure 1, only the two younger age groups showed pro-rich preferences (comparing to chance levels: 4–5-yr-olds: $B = 1.16$, 95% $CI = [0.85, 1.46]$; 7–8-yr-olds: $B = 0.83$, 95% $CI = [0.52, 1.15]$), while 9–12-yr-olds did not ($B = 0.25$, 95% $CI = [-0.14, 0.64]$). The effect of age group was significant ($p = 0.002$), driven by 9–12-yr-olds showing weaker pro-rich biases comparing to both 4–5-yr-olds ($B = -0.91$, 95% $CI = [-1.40, -0.41]$) and 7–8-yr-olds ($B = -0.58$, 95% $CI = [-1.08, -0.08]$). The difference between the two younger age groups did not reach the conventional level of significance ($B = 0.32$, 95% $CI = [-0.12, 0.76]$), though qualitatively 7–8-yr-olds showed somewhat weaker pro-rich bias than 4–5-yr-olds. In explorative analyses of open-ended responses, we found that children said that they preferred the rich mostly because of their nicer possessions (about 40%–60% in each age group), though some of the 4–5-yr-olds (28%) mentioned the irrelevant feature of group color (e.g., "they have blue shirts" or "because my favorite color is red"). A few children provided other less interpretable reasons (e.g., "I really want them to be my friends" and "they are nice").
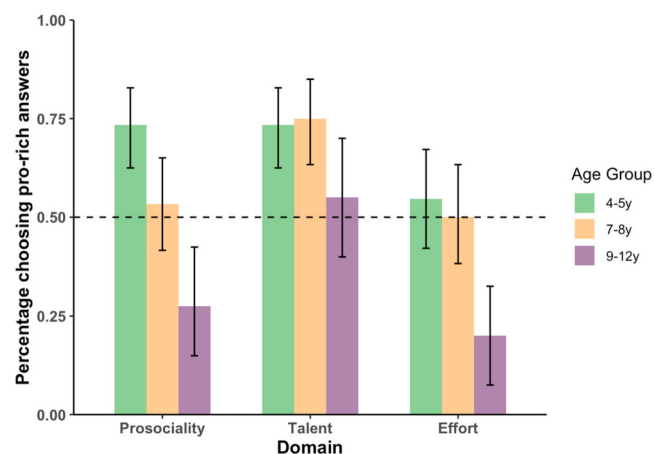
FIGURE 2 Study 1 stereotypes. Results show percentage choosing pro-rich answers (1 = pro-rich choice, 0 = pro-poor choice) as a function of domain (prosociality, talent, and effort) in 4–12-yr-olds. Error bars represent 95% bootstrapped confidence intervals

Since preference for the poor was rare (only 18% of children) we had fewer explanations for that view to consider, and they were not always consistently interpretable (e.g., "because they have not very nice toys"), though some responses referenced compassion (e.g., "I feel sad for them"), group color, and hard work (e.g., "because they work hard").

2.3.2 | Stereotypes

We fit a binomial linear mixed effects model predicting answer (1 = pro-rich choice, i.e., guessing that the rich did the positive behavior or the poor did the negative behavior, 0 = pro-poor choice, i.e., guessing that the poor did the positive behavior or the rich did the negative behavior) as a function of domain (prosociality, talent, and effort), valence (positive or negative; contrast-coded), age group, and their interactions, with a random intercept for participants. The three-way interaction was marginally significant (likelihood ratio test, $\chi^2(4, N = 82) = 8.60, p = 0.07$), suggesting somewhat different patterns of results for the three age groups. In order to more clearly reveal the results for each age group, we decomposed the model for each age group, following our pre-registration, though given the marginal nature of this interaction what follows should be interpreted cautiously.

As shown in Figure 2, 4–5-yr-olds showed pro-rich stereotypes on prosociality and talent (comparing to chance levels: both $B = 1.21$, 95% $CI = [0.51, 1.92]$) but not on effort ($B = 0.22$, $CI = [−0.41, 0.86]$; pairwise comparisons with effort were both significant, $B = 0.99$, 95% $CI = [0.17, 1.80]$). In 7–8-yr-olds, pro-rich stereotypes on prosociality were reduced ($p = 0.04$); specifically, they did not hold pro-rich or pro-poor stereotypes on either prosociality ($B = 0.18$, 95% $CI = [−0.64, 1.00]$) or effort ($B = −0.03$, 95% $CI = [−0.83, 0.78]$), but only on talent ($B = 1.66$, 95% $CI = [0.70, 2.61]$). In 9–12-yr-olds, pro-rich stereotypes across all three domains were again weaker ($ps < 0.05$). Stereotypes regarding prosociality ($B = −1.28$, 95% $CI = [−2.31, −0.26]$) and effort ($B = −1.82$,

95% $CI = [−2.95, −0.70]$) actually showed a *pro-poor* pattern and there were also no longer significant pro-rich stereotypes regarding talent ($B = 0.28$, 95% $CI = [−0.65, 1.21]$). In 7–8-yr-olds, we also found a domain by valence interaction suggesting that the effect of valence differed across domains; however, since this effect was unexpected and not observed in other age groups we do not offer an interpretation here, though results are provided in supplemental materials.

In explorative analyses of open-ended responses, we found that the majority of 4–5-yr-olds merely restated the question, gave unclassifiable explanations, or said that they did not know (around 85% of responses fell into these categories, e.g., "because I like blue", "because the work is boring", "every time it was Vivoes", and "I don't know"), while around 60% of the children in the two older age groups referred to traits (e.g., "they have lots of houses that are good but they don't really work hard", "they have nicer things (so) they would want to do better things", and "they are meaner/nicer").

2.3.3 | Perception of inequality

We fit a linear regression model predicting perception of inequality as a function of age group. As shown in Figure 1, 4–5-yr-olds did not have a clear stance (comparing to chance levels: $B = 0.16$, 95% $CI = [−0.25, 0.56]$) while the two older age groups thought it was unfair (7–8-yr: $B = −0.83$, 95% $CI = [−1.25, −0.42]$; 9–12-yr: $B = −0.95$, 95% $CI = [−1.46, −0.44]$). There was a significant effect of age group ($p = 0.002$): compared to 4–5-yr-olds, both 7–8-yr-olds ($B = −0.99$, 95% $CI = [−1.57, −0.41]$) and 9–12-yr-olds ($B = −1.11$, 95% $CI = [−1.76, −0.46]$) perceived inequality as less fair (the difference between 9–12-yr and 7–8-yr was not significant, $B = −0.12$, 95% $CI = [−0.77, 0.54]$). In explorative analyses of open-ended responses, we found that children mostly referred to the disparity of resources or treatment to explain why they thought the inequality was unfair (about 50%–70% in each age group, e.g., "it is not fair when one has better and one has worse", "some people just get things but some people have to pay for them", and "they (the rich) are treated better"). Some of the older children (around 38% among older children) displayed more advanced forms of normative reasoning (e.g., "everybody should have the same" and "everybody should be treated equally"). As for those who thought the inequality was fair, most were 4–5-yr-olds and they mainly gave unclassifiable/unknown reasons (e.g., "because they wanted to", "because that's nice to", and "because they got lots of questions right"; about 78%). Only two children (both in the 9–12-yr age group) gave justifications for their answers, that is, by referring to hard work to justify the inequality (e.g., "if someone works harder than others then they deserve nicer things").

Open-ended explanations section ("*why are some people rich*", "*why are some people poor*", and "*how can poor people get rich*")

The first author and a research assistant blind to study hypotheses independently coded answers to all open-ended questions (inter-rater agreement ranged from 71% to 95%, $M = 85%$, disagreement resolved via discussion). For the three open-ended explanations concerning why some people were rich or poor and how people could get

rich, detailed coding criteria and results are provided in supplemental materials and a brief summary focusing on age-related changes, is provided here. When explaining why some people were rich or poor, 4–5-yr-olds mainly restated the story or questions (e.g., mentioning possessions, 36%) or provided unclassifiable answers (52%), while the two older age groups increasingly referred to hard work, use of money (saving and wasting money), jobs, and inheritance. Chi-square tests showed that the age-related changes in explanation patterns were significant on both questions, $\chi^2 (10) = 113.44$, $p < 0.001$, and $\chi^2 (10) = 102.59$, $p < 0.001$. On the question "how can poor people get rich", 64% 4–5-yr-olds did not provide classifiable answers, while in the two older age groups, there were increasing references to money (e.g., spending less money; especially in 7–8-yr-olds, 34%), jobs (e.g., getting well-paying jobs, 31% in 7–8-yr-olds and 24% in 9–12-yr-olds), and hard work (especially in 9–12-yr-olds, 52%). The age-related change in the pattern of answers was significant, $\chi^2 (10) = 183.25$, $p < 0.001$.

2.4 | Discussion

Taken together, we found that 4–5-yr-olds held strong pro-rich preferences and stereotypes and did not judge inequality as unfair, despite the use of measures that were not confounded with the possession of resources. In contrast, and more novel to the present inquiry, older children were less pro-rich, with both liking and stereotypes scores slightly dropped in 7–8-yr-olds (though the effect of age group on liking did not reach conventional level of significance) and entirely absent in 9–12-yr-olds (they favored the rich and the poor similarly, or even showed pro-poor biases on some stereotype domains). Also, consistent with past work (e.g., Chafel & Neitzel, 2005; Hussak & Cimpian, 2015), starting around ages 7 and 8 children generally judged inequality as unfair. Thus, confirming our predictions, we found evidence for an age-related decrease in pro-rich bias as well as more differentiated evaluations of both the rich and the poor. While in line with scattered findings (e.g., Ahl & Dunham, 2017; Hussak & Cimpian, 2015), to our knowledge this is the first clear documentation of the developmental shift in pro-rich biases in early and middle childhood.

We note one unexpected result on effort-related stereotypes. Unlike the other two domains, 4–8-yr-olds did not hold pro-rich stereotypes on the effort domain, responding at chance on questions like "who worked harder?", while 9–12-yr-olds believed that poor people were more hardworking. Such results seem to be at odds with past research and our open-ended measures that point to children's reference to hard work in explanations (e.g., some people are rich because they work hard; e.g., Leahy, 1981, 1983) and with meritocratic beliefs (e.g., rich people work hard and poor people are lazy; e.g., McNamee & Miller, 2009). One possibility is that young children hold no effort-related stereotypes spontaneously, but generate effort-related answers when they have to explain why some people are rich or poor. To shed more light on this finding and to provide an opportunity to conceptually replicate our findings, in Study 2 we moved to a different stereotype measure that draws more directly from the past literature (e.g., Mistry et al., 2015).

3 | STUDY 2

Study 1 showed that children's conceptualization of the wealthy and the poor goes beyond mere positivity towards the rich around middle childhood. Study 2 further explored children's nuanced conceptualizations of the wealthy and the poor using new measures, a more racially diverse sample, and a continuous age range to better reveal the timing of the developmental shifts we observed in Study 1, especially when including a more balanced sample of somewhat older children.

We had three more specific goals in Study 2. First, we sought to conceptually replicate the stereotype results from Study 1 with a different measure. Second, we aimed to further probe the complexity of this conceptualization by further differentiating expectations of resource-related versus resource-unrelated contributions. This contrast is important because children might think that the rich contribute more material resources than the poor simply because they have more, without necessarily making inferences about generosity in general. Differences across domains would also imply that responses are not driven merely by pro-rich bias. Third, we developed a new measure to look at children's emerging sociological understandings—whether and when they think that the advantages that accrue to the wealthy go beyond those reflected in concrete material terms, that is, the wealthy also hold more social power to disproportionately influence many forms of societal decision making. This new measure allows us to examine children's understandings of wealth and poverty more deeply. Study 2 pre-registration can be found at https://aspredicted.org/ti8cf.pdf.

3.1 | Method

3.1.1 | Participants

Power analyses indicated that $n = 81$ was required to detect a small effect with >80% power (linear multiple regression in a random model, two tails, up to three predictors, $\alpha = 0.05$, $\rho^2 = 0.15$; using G*Power); in order to test an evenly distributed sample across ages, we pre-registered to test $n = 12$ per age from age 4–10 (total $n = 84$). The final sample ($n = 86$) slightly exceeded our pre-registered sample size in an effort to ensure enough sample size after exclusions. There were 86 four–ten-yr-olds ($M = 7.51$, $SD = 2.04$, range 4.02–10.95, 45 females, 41 males), with approximately 12 participants per age year. We also tested a more racially diverse sample (>50% non-White): among the 65% participants ($n = 56$) whose parents provided racial information, there were 27 White, 12 Hispanic or Latinx, 10 biracial or multiracial, five Asian, and two Black participants. An additional 10 children were tested but excluded from data analyses due to failure to pass memory check questions.

3.1.2 | Materials and design

We used Qualtrics (on laptops or iPads) to introduce participants to the same two novel groups described above and for all measures. There

TABLE 2 Study 2 stereotypes measure: full script (exact wording). There were three domains; for each domain, we first gave a definition and then asked the question

Domain	Definition	Question
Prosociality	*Some people are nice. They help other people. Some other people are not so nice. They do mean things to other people*	*Do you think more Kubus are […], more Vivoes are […], or same number of Kubus and Vivoes are […] (point to the relevant options)?*
Talent	*Some people are smart. They learn things very fast and easily. Some other people are not so smart. They learn things slowly and make more mistakes*	*[…]: hardworking, smart, or nice for the respective item*
Effort	*Some people are hardworking. They put in a lot of effort to do things. Some other people are not so hardworking. They are lazy and do not try hard*	

were three main dependent measures (administered in a randomized order): stereotypes, expectation of contributions, and understanding of power (see Procedure).

3.2 | Procedure

3.2.1 | Group introduction

Groups were introduced as in Study 1, except that now we used Qualtrics instead of PowerPoint for this part and only asked one question ("*who have all these nice things*") as the first memory check to avoid redundancy. All participants passed this memory check.

3.2.2 | Stereotypes (3 items; see Table 2)

The new stereotypes measure focused on traits (e.g., which group is more hardworking) rather than a specific one-time individual behavior (e.g., who worked harder on a previous task), and asked children which group has more members with that trait. Importantly, in order to ensure that children interpreted the questions as intended, we clearly defined each trait before asking the question. We gave children three options, including a no bias option (pre-tested to ensure comprehension; adapted from Mistry et al., 2015; see Table 2 for scripts). We used pictures that showed relative proportions as a visual aid.

3.2.3 | Expectation of contributions (2 items)

Participants were asked to guess which group contributed more material resources ("*Kubus and Vivoes gave these other people some cookies. Who gave more cookies?*") and which group contributed more time or effort ("*Kubus and Vivoes spent their time cleaning the classroom. Who spent more time cleaning the classroom?*"). On each question, participants first saw a picture depicting the scenario and then saw pictures of Kubus and Vivoes, side by side, as two options.

3.2.4 | Understanding of power (10 items; see Table 3)

We showed participants pictures of individuals from the two groups (all shirts were hidden behind black covers to conceal group information) and told them scenarios about power dynamics between the groups. In each scenario, Kubus and Vivoes each wanted different outcomes and, in the end, only one of them got the desired outcome (see Table 3 for scripts; the left-right position was counterbalanced). After each scenario, we asked them to guess those individuals' group memberships, again showing pictures of two T-shirts (one red and one blue) as visual aids.

Importantly, to capture the broad conceptualization of power we contrasted two levels of power in these scenarios, one which we called *micro-level* power (power in interpersonal interactions) and the other we called *macro-level* power (power over broader societal issues or outcomes). For micro-level power, we included three dimensions identified as early emerging in past work, namely resource control, achieving goals, and granting permission (Gülgöz & Gelman, 2017). Past work suggests these dimensions are understood by children as young as three and four (indexed by young children's ability to identify who was "in charge" in those stories; Gülgöz & Gelman, 2017). For macro-level power, new to the present inquiry, we included two dimensions, leadership and policy (designed to reflect important societal decisions and pilot tested to be comprehensible to young children). In addition, there were two scenarios in each dimension, one asking about the person or group that was high in power and the other asking about the one that was low in power. Therefore, the expected answers were the rich group on half of the questions and the poor group on the other half.

3.2.5 | Final memory check

As a final check of whether they remembered the wealth information, we asked participants which group had the nice stuff. We recorded participants' answers and compared with the condition they were assigned to ensure accuracy. Ten participants failed to answer this question and

TABLE 3 Study 2 understanding of power measure: full script (exact wording). There were 10 scenarios (five dimensions crossed with two types—asking about the group membership of the high- versus low-power character)

Dimension	Scenario	Question
Resource Control (Micro)	1. Truck: One Kubu and one Vivo went to the sandbox. In the sandbox, there was only one toy truck. Both of the kids wanted to play with the toy truck. This kid (left) played with the truck, and this kid (right) watched	*Is this kid (left) who played with the truck a Kubu or a Vivo?* (Asking about the high-power character, hereafter "ask High")
	2. Candy: One Kubu and one Vivo were at a party. They both wanted candy bars. At the party, there were four candy bars. Both kids reached for the candy bars. This kid (right) got three candy bars, and this kid (left) got one candy bar	*Is this kid (left) who only got one candy bar a Kubu or a Vivo?* (Asking about the low-power character, hereafter "ask Low")
Achieving Goals (Micro)	3. Bridge: One Kubu and one Vivo were standing on different ends of the bridge. They both needed to cross to the other end of the bridge right away. But the bridge was only wide enough for one person. So, when the two kids tried to cross at the same time, they got stuck in the middle. This kid (right) went back off the bridge and moved to the side, and this kid (left) crossed the bridge	*Is this kid (left) who crossed the bridge first a Kubu or a Vivo?* (ask High)
	4. Dessert: One Kubu and one Vivo wanted to get dessert. This kid (right) wanted to get ice cream, while this kid (left) wanted to get candy. They could only go to one place. They went to the ice cream store and got ice cream	*Is this kid (left) who didn't get what he/she wanted a Kubu or a Vivo?* (ask Low)
Permission (Micro)	5. Ball: One Kubu and one Vivo were at recess. This kid (left) was playing with a ball. This kid (right) asked, 'Can I play too?' He/she (left) told him/her, 'No, you cannot.'	*Is this kid (left) who said no a Kubu or a Vivo?* (ask High)
	6. Castle: One Kubu and one Vivo were out on the playground. This kid (right) was standing inside the toy castle, and this kid (left) was standing outside the toy castle. This kid (left) asked, 'Can I come inside the castle?' He/she (right) said, 'No, you cannot.'	*Is this kid (ask left) who couldn't come inside the castle a Kubu or a Vivo?* (ask Low)
Policy (Macro)	7. Road: Kubus and Vivoes are building a new road to the mountain. These people (left) want the road to be closer to their village. These people (right) also want the road to be closer to their village. In the end, the road is closer to these people's village (left)	*Are these people (left) who got the road right where they wanted it Kubus or Vivoes?* (ask High)
	8. Education: Kubus kids and Vivoes kids go to this school. These people (left) think they should teach kids Swiology but these people (right) think they should teach kids Doxitry. In the end, they teach kids Doxitry (right)	*Are these people (left) who didn't get to teach the thing they wanted Kubus or Vivoes?* (ask Low)
Leadership (Macro)	9. Leader: Here are two leaders. One of them is the leader of Kubus, and the other is the leader of Vivoes. Leaders rule the villages. They are going to compete to become the leader of the whole mountain. This person (left) becomes the leader	*Is this person (left) who became the leader a Kubu or a Vivo?* (ask High)
	10. Judge: Here are two judges. One of them is the judge of Kubus, and the other is the judge of Vivoes. Judges decide how to punish bad people. This judge (left) thinks they should put bad people into prison. This judge (right) thinks they should send bad people away from the mountain. They end up sending bad people away from the mountain (right)	*Is this Judge (left) who didn't get what he/she wanted a Kubu or a Vivo?* (ask Low)

were thus excluded from data analyses, following our pre-registered plan.

3.3 | Results

Preliminary analyses revealed no participant gender, race/minority status (coded as "White" or "non-White"), or version (which group was the rich group in the story) effects so these factors were not discussed further.

3.3.1 | Stereotypes

We aimed to conceptually replicate our findings in Study 1 with a different set of stereotype measures. We fit a linear mixed effects model predicting answer (1 = pro-rich choice, 0 = no bias choice, and −1 = pro-poor choice) as a function of domain (prosociality, talent, and effort), age (continuous; mean-centered), and their interaction, with a random intercept for participant. As shown in Figure 3, we found a significant domain by age interaction ($F(2, 252) = 7.77$, $p < 0.001$) driven by the stronger age effect in prosociality as compared to both talent
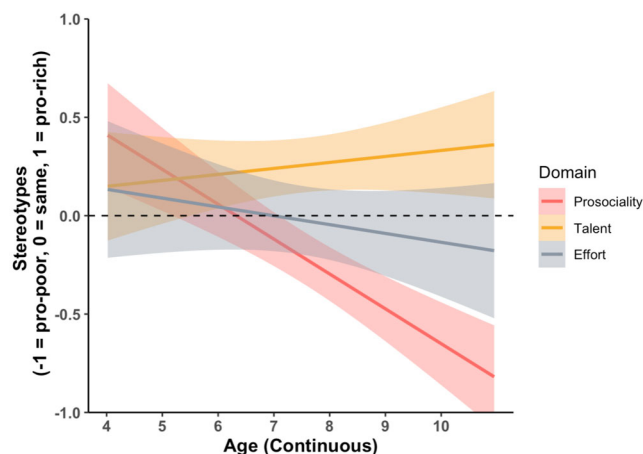
FIGURE 3 Study 2 stereotypes. Results show stereotypes (range −1 to +1; higher values indicate stronger pro-rich bias) as a function of domain (effort, talent, and prosociality) and age (4–10). Error bands represent 95% bootstrapped confidence intervals

FIGURE 4 Study 2 expectation of contribution. Results show percentage expecting that the rich contributed more (1 = the rich contributed more, 0 = the poor contributed more) as a function of domain (contributing resource or time) and age (4–10). Error bands represent 95% bootstrapped confidence intervals

and effort (prosociality vs. talent, $B = -0.21$, 95% $CI = [-0.31, -0.10]$; prosociality vs. effort, $B = -0.13$, 95% $CI = [-0.24, -0.03]$). There was a significant effect of age in prosociality, $B = -0.18$, 95% $CI = [-0.25, -0.10]$: younger children thought that the rich were nicer than the poor (prior to age 5), but older children thought that the poor were nicer than the rich (it reached significance in 7-yr-olds). By contrast, the age effects in effort and talent were not significant ($ps > 0.23$).

3.3.2 | Expectation of contribution

We predicted that children would show different patterns when they reasoned about resource versus time contributions in the wealth context. We fit a binomial linear mixed effects model predicting answer (1 = thinking that the rich donated more, 0 = thinking that the poor donated more) as a function of domain (contribution of resource or time), age (continuous; mean-centered), and their interaction, with a random intercept for participant. As predicted, the domain by age interaction was significant, $B = 0.31$, 95% $CI = [0.01, 0.62]$: age effects on the two domains differed from each other (see Figure 4). There was a marginally significant age effect in contributions of resource (compared to younger children, older children were more likely to expect the rich to contribute more material resources), $B = 0.20$, 95% $CI = [-0.02, 0.41]$, but expectations concerning whether the rich would contribute time did not show an age effect, $B = -0.12$, 95% $CI = [-0.33, 0.09]$.

3.3.3 | Understanding of power

We expected older children to make more wealth-power associations than younger children. We fit a binomial linear mixed effects model predicting answer (1 = choosing the predicted answer, i.e., associating the rich with power and the poor with the lack of power, 0 =
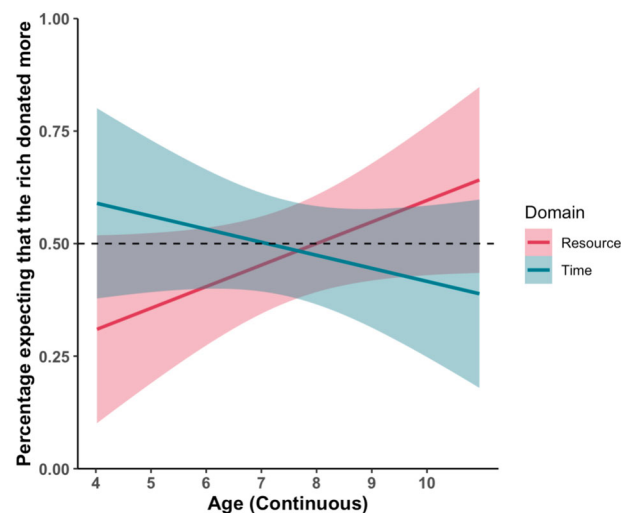
choosing the unpredicted answer) as a function of level (macro-level or micro-level power; contrast-coded), type (asking about the high or low power character; contrast-coded), age (continuous; mean-centered), and their interactions, with a random intercept for participant. Neither the three-way interaction nor the two-way interactions were significant and thus were dropped from the model (one by one, dropping the least significant term first). Confirming our expectation (see Figure 5), there was a significant effect of age, $B = 0.26$, 95% $CI = [0.18, 0.34]$ (level and type were both not significant, $ps > 0.32$): for both macro-level and micro-level power dynamics, older children associated the rich with power and the poor with the lack of power more than younger ones. Further analyses revealed that 6-yr-olds first made this wealth-power link at a rate significantly above chance. Additionally, we explored the effect of dimension (e.g., resource control, permission, and leadership dimensions) but did not find any interactive ($\chi^2(4, N = 86) = 5.16$, $p = 0.27$) or main effects ($\chi^2(4, N = 86) = 6.63$, $p = 0.16$), suggesting that children's understanding of power dynamics emerged in a similar trajectory for all five dimensions.

3.4 | Discussion

We successfully replicated the main stereotype results observed in Study 1, again finding that children's evaluations of the rich and the poor are domain-sensitive: younger children thought that the rich are nicer while older children thought that the rich are meaner while the poor are nicer. We also found that their expectations for rich people's generosity are resource-specific: compared to younger children, older children expected the rich to contribute more material resources but not necessarily more time than the poor (children across ages did not change their expectations concerning contributions of time). Another
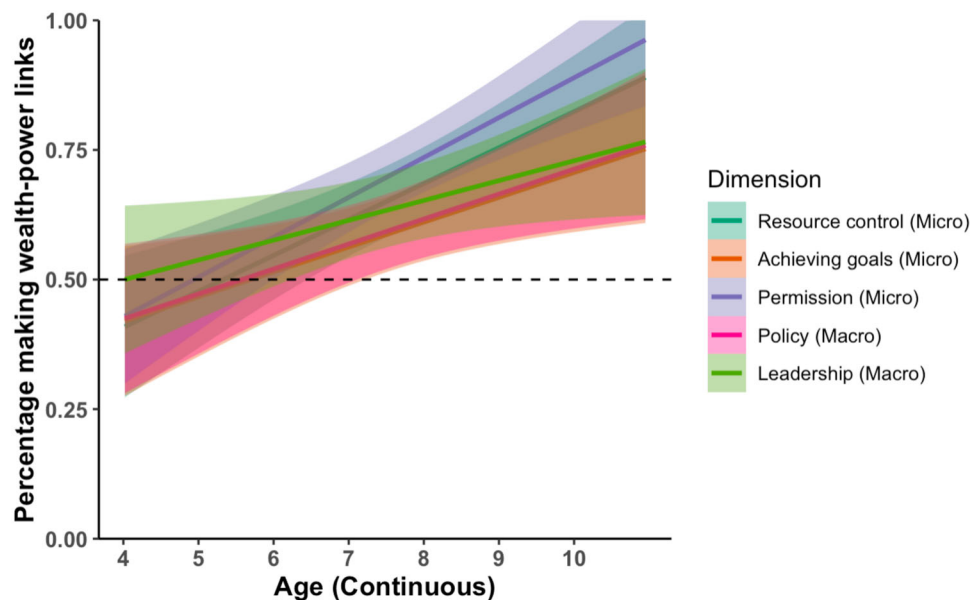
FIGURE 5 Study 2 understanding of power. Results show percentage making wealth-power links (1 = associating the rich with power and the poor with the lack of power, 0 = making the opposite associations) as a function of age (4–10) and dimensions of power (five dimensions). Error bands represent 95% bootstrapped confidence intervals

novel finding concerned children's reasoning about social power in the context of wealth. Younger children did not associate material wealth with high social power in influencing outcomes, but older children did (starting in 6-yr-olds and increasing in strength with age), suggesting their conceptualization of wealth incorporates an understanding of social power in middle childhood.

We note that results on the stereotype measures were not entirely consistent across the two studies (where age ranges and methodologies differed), specifically in terms of the developmental patterns on talent and effort stereotypes. That said, the dramatic age-related change on the prosociality domain is clear and striking, with younger children thinking that the rich are nice and older children thinking that the poor are nice and the rich are mean. One particularly important future direction is to explore why children begin to judge the rich as mean, and what experiences or parallel social-cognitive developments might drive the dramatic shift we observe. Future research could investigate possible underlying mechanisms, and would also benefit from a longitudinal design to rule out potential cohort effects. It would also be interesting to explore whether such anti-rich and pro-poor changes also appear on other stereotype domains.

4 | GENERAL DISCUSSION

Across two pre-registered cross-sectional studies with a broad array of measures and a wide age range we provide the first clear evidence that American middle-class children show an age-related decrease in positivity towards the wealthy relative to the poor during early and middle childhood. This entails developing a conceptualization of the wealthy and the poor that goes beyond mere positivity towards the wealthy. As in past work, here we also found that children around ages 4 and 5 hold

a highly positive view of the wealthy and have only a shallow understanding of the concepts of wealth and poverty. New to the current inquiry, we show that younger children do not appear to understand how wealth links to social power and control, consistent with the previous work suggesting that mature understandings of power emerge only later in development (Gülgöz, 2015; Gülgöz & Gelman, 2017). Though these children like the rich more than the poor and attribute more positive behaviors and traits to the rich, they do not consistently associate the rich with the ability to exercise social power and control social outcomes. Also, they do not think the wealth disparity we depicted is unfair. Taken together, their conceptualization of the wealthy and the poor appears dominated by a positive association with wealth rather than a deep understanding of broader wealth concepts.

By contrast, and novel to the present study, there is a clear developmental change in pro-rich preferences, evaluations, and understandings about wealth and inequalities in middle childhood. Children above age 7 or 8 reduced the tendency to associate rich people with positive valence and poor people with negative valence, and by age 9, they appeared to favor the rich and the poor similarly. In addition to providing the clearest demonstration of this striking age-related shift, we also document the complexities in older children's reasoning about wealth. Older children hold more differentiated stereotype patterns driven by the prosociality domain as compared to competence (talent and effort): unlike younger children who think that the rich are nice, older children actually think that the rich are mean. These differentiated stereotype patterns especially in older children are consistent with past work on the Stereotype Content Model (Durante et al., 2017; Fiske et al., 2002; for developmental work, see Roussos & Dunham, 2016). On behavioral expectations, older children show more complicated patterns as well, thinking that the rich might contribute more material resources but not more time or effort. In terms of reasoning about power, older children

(around age 6 and above) understand the wealth-power link, associating the wealthy with high social power and the poor with low social power. Additionally, older children explain wealth and poverty better than younger children, and they increasingly indicate that the wealth gap is unfair. Consistent with results from adults suggesting that they associate the wealthy with negative valence at least on some domains (e.g., thinking that rich people are cold; Durante et al., 2017; Wu et al., 2018), our results suggest that by middle childhood, children develop a more sophisticated understanding of wealth and poverty and can reason about complex patterns of stereotypes related to these social groups.

One major contribution of this work concerns children's developing understanding of wealth-power associations, that is, recognizing that material wealth is a cue to the presence of social power, what we conceptualize as a form of naïve sociology. To our knowledge, this is the first study to investigate whether and when children understand that the wealthy have disproportionate social power to affect a broad range of outcomes. In a hierarchical world characterized by power dynamics, such an understanding of power likely improves their ability to predict the outcome of important social events and to better navigate the social world. Critically, despite their highly positive evaluations of the wealthy, young children do not reliably associate the wealthy with greater social power, implying that they may not think the exercise of social power is itself positive, a possibility that we see as worthy of further investigation. This possibility somewhat aligns with a recent finding that children do not think "leaders" are "helpers" (see Heck et al., 2020), and that children do not reliably connect other social categories such as age and gender with power (Gülgöz, 2015). We note that in some of our power dimensions the high-power character might be seen as mean, especially in the permission scenarios (e.g., not giving permission), but in other scenarios this does not appear to be the case (e.g., both parties wanted different outcomes and one party achieved the goal). The fact that we found largely similar results across all dimensions suggested that children did not simply answer the power questions based on attributing meanness; still, more work could be done to disentangle valence and power.

Our research had the main goal of contributing to a more detailed picture of children's developing conceptualizations of the wealthy and the poor. Future studies should look into aspects of social and cognitive development that facilitate the developmental shifts we revealed here. To speculate, we suggest that understandings of fairness, more complex forms of perspective-taking, stronger reputational concerns, and a richer understanding of power dynamics contribute to these shifts. Indeed, past work on some of these topics has found developmental shifts at similar ages (e.g., Gülgöz & Gelman, 2017; McAuliffe et al., 2017; Shaw et al., 2014). It would be also interesting to include behavioral measures to explore whether children actually act on their pro-rich preferences. For example, do children selectively choose rich or poor peers to collaborate with? Furthermore, there has been evidence showing that children pick up both internal and external or structural cues when they generate explanations (e.g., Vasilyeva et al., 2018; Yang et al., 2021) and different explanations of wealth and poverty lead to different levels of endorsement of the status quo and policy changes

(see Hussak & Cimpian, 2015, 2017). Future research could also provide children with different cues that signal wealth or poverty and explore children's explanations of them and their subsequent conceptualizations of the rich and the poor.

In the current work, we adopted a broad array of measures (with new measures probing naïve sociology) and tested a wide age range, integrating findings previously reported piecemeal across studies. However, we also call attention to several limitations to the generalizability of the present findings. First, similar to many other studies in this field, the majority of the participants were White, and primarily from Western cultures and middle-class backgrounds (c.f. Elenbaas et al., 2016; Elenbaas & Killen, 2016; Heberle & Carter, 2015; Heberle et al., 2018; Mistry et al., 2015). Unfortunately, we did not have access to participants' family SES information (e.g., annual income, parent education) when we conducted these studies, and thus we could not conclude whether family SES influenced children's conceptualizations of wealth and poverty. Additionally, of course cultures vary in how they value wealth and meritocracy, such that different conceptualizations of the wealthy and the poor may emerge (e.g., see Grigoryan et al., 2018; Wu et al., 2018 for cross-cultural differences in adults). Future work should include more individuals from lower SES populations and individuals of other race or ethnicities, and should seek to incorporate cross-cultural inquiry (and test how family SES information might affect children's reasoning). Until such work is conducted, we should be wary of generalizing the current findings too broadly.

Second, in our studies we only had rich and poor target groups (like most of previous work; cf. Mistry et al., 2015), thereby omitting important groups in the middle of the wealth-poverty continuum, namely the middle class. The middle class is the largest group in the US numerically (e.g., Gilbert, 2017); psychologically, it is perceived as the norm or default class and is evaluated positively in the US (Fiske et al., 2002). Further, most of the participants are members of the middle class and it is important to explore how children conceptualize the social class they belong to. If children prefer the rich over the middle class and prefer the middle class over the poor, it suggests that children prefer high wealth, consistent with a pro-rich bias interpretation. However, if children prefer the middle class over both the rich and the poor, then the seemingly pro-rich bias might instead be an ingroup bias (given how robust ingroup biases are; for a recent study, see Yang & Dunham, 2019), or bias in favor of the perceived majority. This would imply that, in our studies as well as past work, children simply treat the rich as closer to the middle class compared to the poor. Another design feature that might have influenced interpretation is that we always contrasted the rich and the poor groups and asked relative questions (as also in e.g., Ahl & Dunham, 2017; Horwitz et al., 2014; Li et al., 2014; Shutts et al., 2016). Therefore, we cannot conclude whether (for example) the relative preference for the rich over the poor is driven by the positivity towards the rich, negativity towards the poor, or both. Future work can further disentangle these possibilities.

Despite these limitations, our work provides a more comprehensive picture of how American children's understandings of wealth, poverty, and social inequalities undergo a striking shift from an overall pro-rich bias to more mature, differentiated conceptualizations. The

present studies suggest a deeper understanding of these concepts than past research had suggested, one that involves differentiated evaluations and incorporates reasoning about social power dynamics. As the wealth gap continues to enlarge and the world becomes increasingly unequal, understanding how children, who grow up against this backdrop, conceptualize the wealthy and the poor becomes ever more important. These early conceptualizations will guide children as they navigate an unequal social world, and may set the stage for adult reasoning, including adult decisions about how society should address issues related to inequality and poverty.

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Note

[1] We note that this question was not an appropriate memory check as it requires the interpretation of the word "rich," which we did not use elsewhere in the procedures. Hence, we did not treat it as a criterium to exclude participants. In preliminary analyses, we confirmed that children's answers on this question did not influence main results.

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no competing interests.

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DATA AVAILABILITY STATEMENT

All study materials, data files, and analysis code that replicates all results in the manuscript and supplemental materials are also openly shared and are available at: https://osf.io/52wsv.

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