Cognitive Development 69 (2024) 101396

Contents lists available at ScienceDirect

Cognitive Development

journal homepage: www.elsevier.com/locate/cogdev

Who helps best? Children's evaluation of knowledgeable versus wealthy individuals in negative event contexts☆

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ARTICLE INFO

Keywords:
Social cognition
Knowledge
Wealth
Moral reasoning

ABSTRACT

Children favor knowledgeable people in information-seeking contexts, but is this preference maintained when other resources are available to resolve problems? This study addressed whether children relied on knowledge or wealth to decide who is qualified to help someone in need. Sixty-four 5- to 8-year-olds heard stories in which two bystanders (i.e., knowledgeable versus wealthy) witnessed a negative event. Children judged which bystander should assist a victim and which should supervise the situation. Children evaluated each bystander's strategies and duty to help. Across ages, children indicated that the knowledgeable bystander should provide aid, supervise, and help more than the wealthy bystander, but made positive trait attributions about both bystanders. Children referenced how knowledge could produce solutions and with age, were better able to make knowledge- rather than wealth-related predictions about helpful behavior. These findings shed light on children's understanding of wealth and draw connections between children's reasoning about knowledge, wealth, and morality.

In learning-related contexts, children rely on knowledgeable people for assistance (Harris et al., 2018). In addition to these contexts, children (and adults) rely on people for assistance in social situations where knowledge may or may not be a priority relative to other resources. For example, an adult who experiences discrimination in public (i.e., negative event) and wants help to address this incident may consider whether to call the police, consult a lawyer, or contact media. Adults may decide which of these resources to consult for help based on each potential "helper's" strategy to resolve the situation, but it is unclear how judgments about the usefulness of authority, knowledge, or other resources develop.

In general, children consider others' characteristics to evaluate their obligation to help and responsibility for negative events (e.g., Marshall et al., 2022). Children's expectations for how others respond to negative incidents may be based on their perceptions of social dynamics related to certain resources or qualifications of individuals. Two characteristics, knowledge and wealth, may be particularly relevant to investigate in these contexts, but children's impressions of these characteristics have not been compared directly. Children demonstrate an early awareness that wealth is valuable due to the association with social status (i.e., position in a social hierarchy), which is similar to the value children place on knowledge for its association with credibility and trust (e.g., Enright et al., 2020; Mills, 2013). Both characteristics may be interpreted as prestigious or powerful, which influences children's expectations for who is likely to

☆ This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors

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https://doi.org/10.1016/j.cogdev.2023.101396
Received 2 May 2023; Received in revised form 2 November 2023; Accepted 2 November 2023
Available online 16 November 2023

engage in helpful behavior (e.g., Chudek et al., 2012; Terrizzi, 2020).

The present study addressed how these characteristics influenced children's judgments about which of two witnesses to a negative event is most qualified to help someone in need. Specifically, this study addressed how 5- to 8-year-olds decide whether a knowledgeable person or a wealthy person is the best helper for someone who experiences an injury or unfair rule.

Age-related changes in moral reasoning suggest that children use an increasing number of situational cues to evaluate negative events. By 6 years of age, children focus on issues of fairness, in addition to welfare, to evaluate negative events (e.g., Nucci et al., 2017). In addition, 8- and 10-year-olds are better able than 6-year-olds to recognize the moral implications of unfamiliar, negative events that require additional social knowledge beyond children's direct experience (e.g., embezzlement versus stealing, Davidson et al., 1983). In fact, children's severity judgments of events and obligation judgments for witnesses to intervene are influenced by whether harm is psychological or physical (e.g., Heck et al., 2021). Therefore, the current study examined negative events that involved psychological harm (i.e., an unfair rule that resulted in discrimination) or physical harm (i.e., an injury).

Preschoolers' early familiarity with physical harm might promote the view that anyone is competent enough to render aid in situations that affect physical welfare (e.g., injury events). Children's evaluations of the perpetrators and victims of physical harm have been the primary focus in previous research, which demonstrates that physical harm is both salient and well understood by children before the age of 5 (see Smetana et al., 2013). Therefore, 5- to 8-year-olds might perceive that people are generally obligated to help in response to issues of physical injury, when the focus is on bystanders (e.g., Nucci & Turiel, 2009). In contrast, psychological harm involving issues of discrimination and fairness involve broader social concepts (Helwig & Prencipe, 1999). For example, children reason about personal rights or civil liberties as an important issue with moral implications (Helwig & Turiel, 2016). In one particularly relevant study that illustrates the complexity of children's interpretation of psychological harm in this context (Helwig & Jasiobedzka), 6- to 10-year-olds were told that a governmental authority composed of older adults created a law prohibiting younger adults from using seats on buses (among other examples). Across ages, children indicated this law was "bad" and that governmental regulation in this circumstance was less acceptable relative to contexts where a law may result in greater social benefit. With age, children increasingly justified their reasoning that this was an unjust law with reference to the connection between discrimination, fairness, and equality.

Although children consider issues of justice and fairness to be moral issues (Smetana et al., 2013), the potential for psychological harm to result from these issues may depend on context. In some circumstances, discrimination may be interpreted as an issue of fairness when the goal is to obtain access to goods or services while adverse effects for the individual who experiences discrimination may be interpreted as psychological harm (Helwig, 1995). In addition, children often need to coordinate information about behavior, mental states, and the outcomes of the event, with consideration of social or moral needs, personal choice, or some combination of these domains to evaluate socially appropriate sacrifices of personal rights (e.g., Helwig, 1997; Helwig & Turiel, 2016). In turn, children's judgments about appropriate solutions for these violations might require an evaluation of the characteristics of potential helpers. To what extent do children think certain characteristics make someone particularly obligated or responsible for rendering aid in response to witnessing a negative event with physical versus psychological implications?

This question has received little attention despite evidence that the type of harm or help as well as the personal circumstances of the transgressor or helper influence children's reasoning about acceptability, punishment, and justifications for behavior across middle childhood (e.g., Kahn, 1992; Laupa, 1994; Nucci & Turiel, 2009). Indeed, children recognize displays of both prosocial and antisocial behavior as cues to social status characteristics (Gülgöz & Gelman, 2017; Terrizzi et al., 2020). Therefore, it is important to examine children's reasoning about specific connections between these characteristics and behavior. In the current study, knowledge and wealth are of particular interest because children may draw on both their understanding of these characteristics as qualifications for offering help as well as their impressions of knowledgeable and wealthy people to form expectations about helping in negative event contexts.

1. Children's understanding of knowledge versus wealth

Beginning in the preschool period, children understand what it means to be knowledgeable across a variety of learning-related contexts (see Marble & Boseovski, 2020). In moral reasoning contexts, young children recognize cues to wealth and demonstrate some understanding of resources, but do not understand some aspects of wealth until middle childhood (Berti & Bombi, 1981; Shutts et al., 2016). These differences in understanding suggest that children may prioritize knowledge over wealth when they are asked to judge the utility of each characteristic in the context of providing help for a negative event.

With regard to knowledge, children identify a range of cues by the preschool period (e.g., expertise, Lutz & Keil, 2002; perceptual access, Robinson et al., 2014). Moreover, 4- and 5-year-olds direct their questions to people who demonstrate relevant rather than irrelevant knowledge (e.g., Aguiar et al., 2012), which suggests that young children recognize meaningful differences in knowledge. Children's understanding of knowledge deepens across middle childhood as children identify connections between how knowledge is acquired and used. For example, 8- to 11-year-olds—but not 5- to 7-year-olds—expect a learner to acquire more knowledge from an expert than from other pedagogical strategies (e.g., Lockhart et al., 2021). In addition, children increasingly prioritize learning from someone who demonstrates knowledge over someone who exhibits other potent social cues (e.g., group membership; Boseovski et al., 2016). Children's prioritization of knowledge relative to other cues across these contexts may influence their perceptions of the helpfulness of knowledgeable individuals in response to negative events. In addition, children's early understanding that those with knowledge are qualified to make or enforce rules (e.g., Laupa, 1991) may influence children's expectations for knowledgeable people to problem-solve issues that involve rules, such as unfairness.

Children also demonstrate early cognitive abilities that support their understanding of concepts related to wealth, such as resources

and fairness. The possession of resources (i.e., wealth), may be particularly salient to children as a source of helping behavior because children are familiar with acts of donation and sharing. For example, knowledge of the cardinal principle predicts preschoolers' fair sharing of toys and children's use of advanced sharing strategies (Chernyak et al., 2016). However, children's understanding of specific wealth concepts (e.g., money) undergoes relatively protracted development compared to their understanding of knowledge. Cognitive abilities related to numerical and symbolic reasoning about money emerge around the transition from early to middle childhood (Berti & Bombi, 1981). For example, 7- and 8-year-olds understand that money is used in specific amounts to obtain desired quantities of goods or services (see Leiser, 1983). In contrast, 5- and 6-year-olds view the exchange of money for goods as a social script and may interpret it as a ritual disconnected from economics (Furth, 1980).

This possibility for reasoning about wealth in relation to social norms might promote reasoning about donation or other prosocial, resource-related behavior, regardless of children's direct understanding of wealth. In this way, children might expect a wealthy individual to use their resources to help others. In one example in which the number of resources differed across children, 4- and 8-year-olds who engaged in more moral reasoning about a less fortunate peer were more likely to donate their own stickers to that peer than children who engaged in less moral reasoning (Ongley et al., 2014). By middle childhood, children understand ownership transfer (e.g., gift-giving; Nancekivell et al., 2013). Taken together, these findings suggest that with age, children may view a variety of resource-related strategies as a prosocial effort by a wealthy individual. Another possibility is that children's impressions of wealthy people and understanding of social status influence children's expectations for how wealthy people respond to negative events more than children's understanding of resources.

2. Children's impressions of wealthy and knowledgeable people

Children's impressions of knowledgeable and wealthy people may be associated with children's exposure to social group dynamics related to these characteristics, particularly for wealthy individuals (e.g., socioeconomic status or social class). Children as young as 3 recognize control over resources as characteristic of higher status between two people (e.g., differences in who is "in charge," Gülgöz & Gelman, 2017). By age 8, children reason that wealth may be used as a basis for establishing relationships in peer group contexts (e.g., Burkholder et al., 2021) and older children reason that wealth is associated with observed inequalities in access to community resources (e.g., Elenbaas & Killen, 2017). This connection to relationships between people may inform how children reason about whether a wealthy person is obligated to help another person with unknown status because of their access to resources or is simply powerful enough to do so. It is unclear how children conceptualize knowledge in the context of social status or whether they recognize knowledge as a cue to social status consistently across contexts. However, knowledge may be implied in some dimensions of social status that young children recognize as valuable. For example, 3- and 4-year-olds leverage cues to prestige (e.g., others' selective attention to the individual) to learn about new objects, which suggests that children associate status with the accuracy or reliability of someone who serves as a source of information (Chudek et al., 2012). In addition, other cues that children associate with social status such as decision-making power and setting norms may be associated with knowledge attributes in some settings (Enright et al., 2020; Gülgöz & Gelman, 2017). In the context of providing help to someone who has experienced a negative event, knowledge may be viewed as an important characteristic for creating solutions in response to the problem at hand.

In the absence of explicit or salient group issues, children's awareness of these potential connections between knowledge, wealth, and social status may influence children's trait attributions and expectations for prosocial behavior. Children make inferences about traits based on behavior and form expectations about behavior based on perceived moral obligations related to social group identity (e.g., Chalik & Rhodes, 2020). Children form positive impressions of both knowledgeable and wealthy people during early childhood, but these impressions differ across middle childhood (e.g., Heyman & Dweck, 1998; Mistry et al., 2021). With regard to wealth, 4- to 6-year-olds indicate that rich people are "nicer" than those who are not rich (Li et al., 2014). Children are more likely to perceive a rich person than a poor person to be competent, regardless of children's own socioeconomic status (Sigelman, 2012) and may be inclined to view wealthy people as particularly hard-working or "in charge" of others (e.g., Hussak & Cimpian, 2015). These perceptions could promote the impression that wealthy individuals excel at problem-solving in a way that young children understand (i.e., knowledge) and further bias children in favor of wealthy "helpers." These impressions of wealthy people undergo a notable shift by middle to late childhood such that children use negative stereotypes about rich people (Mistry et al., 2015). For example, 8- to 14-year-olds make attributions such as "selfish" and "entitled" for rich people (Elenbaas & Killen, 2019). Despite these negative attributions, children maintain that wealthy people will contribute resources to those with less (e.g., Ahl & Dunham, 2019, Study 3). Therefore, children may predict that a wealthy person will help someone who experiences a negative event, regardless of perceptions of their character.

In contrast to wealth, children maintain positive views of knowledgeable people. Children associate knowledge with other positive characteristics (e.g., prosocial behavior, Cain et al., 1997) and 5- to 8-year-olds perceive some overlap between being knowledgeable and being a "good person" (e.g., Heyman et al., 1992). Therefore, children may believe that a knowledgeable person is both competent to resolve a negative event and "nice" enough to do so. In one study that provides indirect evidence that children have positive expectations for knowledgeable people, Kindergarten, second grade, and fourth grade students were presented with a scientific or moral dilemma and were asked which traits were necessary for a potential advisor to resolve the dilemma (Danovitch & Keil, 2007, Study 3). Across ages, children were particularly likely to endorse positive, social traits as necessary qualities for a knowledgeable advisor. This finding provides evidence that children make positive trait attributions for knowledgeable people and in turn children may expect knowledgeable to be helpful with negative events that involve a variety of issues.

In the current study, 5- to 8-year-olds evaluated whether a knowledgeable bystander or a wealthy bystander would be better able to help someone in need across two contexts (i.e., physical injury; unfair rule). Children were asked who should be consulted for help (i.e., assistance) and who should be "in charge" of dispatching that assistance (i.e., supervision) to examine whether children differentiate

between levels of response. The primary prediction was that 7- to 8-year-olds would endorse the knowledgeable bystander for both judgments based on age-related improvements in children's understanding of knowledge and its connection to abstract reasoning and problem-solving. Five- to 6-year-olds were expected to endorse the knowledgeable bystander to provide assistance and to prefer the wealthy bystander for supervision based on their perceptions of wealthy people as socially superior (Shutts et al., 2016). Given the age-related differences in children's moral reasoning about physical versus psychological harm, 5- to 6-year-olds were expected to focus on negative outcomes (e.g., Nelson, 1980) and endorse lower levels of obligation for both bystanders in the civil liberties compared to the physical injury context. Seven- to 8-year-olds were expected to tailor these judgments (i.e., judgments of high obligation/severity for the knowledgeable bystander and low obligation/severity for the wealthy bystander).

3. Method

3.1. Participants

The final sample included 64 5- to 8-year-olds (34 girls, $M = 84.70$ months, $SD = 14.00$ months) who participated in testing between June 2020 and September 2021. Among these children, 32 were 5- and 6-year-olds (18 girls) and 32 were 7-and 8-year-olds (16 girls). Forty-seven participants from the final sample were contacted from a preexisting database of volunteer families who reside near a medium-sized city in the southeastern United States. These families had previously indicated interest in child development research and were recruited from local daycares, preschools, and community events. The remaining 17 participants were recruited by word of mouth and from sharing flyers about the study and resided throughout the southeast, mid-Atlantic, and Midwest regions of the United States. Data from an additional six participants were unusable due to Internet issues (n = 3), experimenter error (n = 1), family member interference (n = 1), and refusal to respond to questions (n = 1).

Demographic information and information about participants' usage of video chat programs was requested from but not disclosed by all caregivers. Fifty-six caregivers identified their children as: 71.4% White, 10.7% Black or African American, and 10.7% Asian; 7.1% selected more than one racial identity or identified as "other." Caregivers identified 5.5% of these participants as Hispanic or Latinx. With regard to caregiver education (n = 54), 87.1% of these households included at least one caregiver with a bachelor's degree or higher. Fifty caregivers disclosed annual household income and reported the following ranges: 1.6% $15–25,000, 7.8% $40–60,000, 9.4% $60–90,000, 23.4% $90–120,000, 37.5% "more than $120,000;" the remaining 20.3% chose not to report on household income. All 50 caregivers who provided information about participants' video chat experience reported experience with at least one platform (e.g., FaceTime, Zoom).

In accordance with institutional review board policies, consent was obtained from legal guardians either electronically (n = 55) or verbally (n = 9); 7- and 8-year-olds were provided with a written assent form (electronically or verbally) with the opportunity to ask the experimenter questions prior to their participation.

4. Materials

Images from two online stock image databases were manipulated in Adobe Illustrator to create the stimuli for this study. Each completed scene was exported to PowerPoint format and screen-shared with participants during the testing session.

5. Design

This study used a mixed design with age in months as a continuous predictor and story type as a within-subjects variable (2: civil liberties violation, physical injury). A priori power for generalized estimating equations (GEE) was not conducted (see Nancekivell et al., 2020). However, a simulation study was consulted that had examined sample size requirements and power for the Wald z-test from GEE for a similar design focused on main effects (i.e., 2 levels of a within-subjects variable, Tang, 2020). That simulation indicated that a sample size of 59 was sufficient to detect an effect with an odds-ratio of 2 at around 80% power and that a sample size of 70 was sufficient to detect an effect with an odds-ratio of 1.10 at around 80% power (Tang, 2020, Table 5). Previous research on children's evaluations of wealth cues and expertise was also consulted (Boseovski et al., 2017; Shutts et al., 2016). Due to the nature of the present design, which includes only one between groups comparison for additional analyses, a sample size of 64 5- to 8-year-olds was selected.

6. Procedure

Three experimenters (all female) were trained to conduct testing sessions. Each participant engaged in a one-on-one virtual session with one experimenter that lasted about 15 minutes. The session began when the experimenter asked the participant to describe a cartoon on the screen that was unrelated to the study. This warmup ensured that audio and video worked for both the participant and the experimenter and allowed the opportunity for troubleshooting technology as needed. Then, the experimenter told the participant that she would share some stories and ask a few questions about the people in the stories, but that there were no right or wrong answers to the questions.

Next, the experimenter introduced two adult bystanders with their corresponding images, one at a time, and described them as wealthy or knowledgeable (see Appendix A). These introductions were followed by two forced-choice comprehension checks to ensure that children differentiated between the wealthy bystander and the knowledgeable bystander (e.g., "Which one has a lot of money?",

"Which one knows about a lot of things?"). All participants passed the comprehension checks except one participant (7-year-old) required one repetition of this information to pass the checks.

Then, participants heard two stories about a target character who experienced a morally salient event (see Appendix A). In one story, the target character experienced a civil liberties violation (i.e., a discriminatory rule at the post office) and in the other story, a different target character experienced a physical injury (i.e., fell and hurt their knee). The same two bystanders were described as witnessing each of these events. As the experimenter described each story, she transitioned from the image containing the target character, to an image depicting the two bystanders present at the scene to witness the negative event. In the civil liberties event, the image highlighted a posted set of rules during the transition between PowerPoint images (text obscured so that children could not read it on their own). In the physical injury event, the target character was depicted as "falling" using the transition between PowerPoint images (i.e., the character is standing before the transition and has fallen on their side after the transition with a mark on their knee). The order of bystander introductions and the presentation order of these stories were counterbalanced across participants. The character designated as the wealthy versus knowledgeable bystander was also counterbalanced across participants.

Participants responded to several questions in a fixed block order following each story. An image containing the two bystanders was presented for questions where the answer choices were one of these two people (i.e., bystander endorsements). The scene of the negative event was presented, with an illuminated pointer over the bystander about whom the question was intended, for questions where children rated the bystanders as individuals (i.e., behavioral evaluations). For each of the measures described below, forced-choice answer options were presented in a randomized order. The bystander endorsements and obligation judgments were followed with an open-ended prompt to allow participants the opportunity to justify their responses. The behavioral predictions allowed for children to respond first in an open-ended manner, followed by the forced-choice options described below. Two experimenters (the first author and an undergraduate research assistant) each coded 100% of these qualitative responses independently. Initial Cohen's kappa coefficients for qualitative response coding ranged from moderate to strong reliability (range K =.60 to.90; McHugh, 2012); disagreements were resolved through discussion (final K = 1.00).

The primary interest was whether participants would reference knowledge and wealth specifically as qualifications to provide help or make additional inferences about these two characteristics (e.g., inferences about social status or traits) based on children's tendency hold favorable views about knowledgeable and wealthy people in other contexts (see Marble & Boseovski, 2020; Mistry et al., 2021). Given the differences in type of harm across the vignettes and previously documented age-related differences in children's reasoning about similar issues (e.g., Helwig & Jasiobedzka, 2001), a category to classify responses that highlighted the event itself was also included. See Table 1 for the rubric and sample statements.

6.1. Bystander endorsements

These measures consisted of two forced-choice questions: "Which one should [Target] ask for help?" (assistance endorsement) and "Which one should be in charge to help [Target]?" (supervision endorsement). Participants received a score of 0 if they selected the wealthy bystander and a score of 1 if they selected the knowledgeable bystander. Participants were asked to justify each of these endorsements (Why?").

The presentation order of these endorsements was fixed for the first 32 participants because the assistance endorsement was the primary item of interest. After this initial data collection, a preliminary analysis of qualitative data indicated that some of the 5- and 6-year-olds may have engaged in response alternation. Therefore, children were asked the supervision judgment before the assistance judgment question for the remaining 32 participants (there were no differences between these groups of participants; see Results).

Table 1
Rubric for Coding Bystander Endorsement and Obligation Justifications with Description and Sample Responses.

Code	Description and sample responses
Knowledge	Ability of the bystander to resolve a situation because they know what to do, how something works, or how to get additional assistance. Includes comparative statements (bystander X knows more than bystander Y). "Because [Knowledgeable Bystander] might know a lot about post offices and how to fix the rule."
Wealth	Financial ability for the bystander to pay for a service or to fix a problem; includes comparative statements (bystander X has more money to help than bystander Y). "Just in case they need to buy something, [Wealthy Bystander] can buy it."
Morality	General morals such as labeling a rule as unfair or discriminatory; indicating that it would be wrong to ignore/neglect physical injury. "Because it's urgent to help people in need."
Trait /evaluative	Trait labels such as "nice" and "mean" to describe the bystander or the bystander's behavior, or evaluative statements about "rich people" or "smart people." "Because she's [Knowledgeable Bystander] smart and I think she likes to help people…"
Status/power	Bystander can direct or demand that other people follow their instructions or requests, including themes of authority or that other people are obligated to respect or follow the bystander. "Because [Knowledgeable Bystander] the boss."
Other	Statements that are off topic (see sample); includes no response and "I don't know." "It doesn't really matter after, just that Jade's okay. But because I've fallen a lot and I know it hurts and it sends a shock of pain through your body and it takes it long time to heal."

6.2. Behavioral predictions

Participants answered an open-ended behavioral prediction for each bystander (e.g., "What do you think Mia/Hannah will do next in this story?"). This question was followed by a forced-choice question that asked children to select between a "buying" strategy and a "knowledge" strategy to help the target resolve their situation (physical injury: "Would Mia/Hannah buy Jade Band-Aids from the store or know how to check Jade's leg for other injuries?"; civil liberties: "Would Mia/Hannah buy Abby a stamp for her letter or know who to talk with to change the rule?"). This question was not administered to participants who stated one of these two behaviors spontaneously.

6.3. Behavioral evaluations

Participants responded to two additional forced-choice questions to evaluate the potential behavior of each bystander separately. Participants were asked for each bystander: "How much does [Bystander] *have* to help Jade?" Participants received a score of 0 if they indicated that "it doesn't matter if she helps" and a score of 1 if they indicated that "she should definitely help" for this obligation judgment. Participants were asked to justify this obligation judgment (Why?"). Then, participants were also asked for each bystander: "How bad would it be if [Bystander] did *not* help Jade?" (severity judgment). Participants received a score of 0 if they indicated that it would be "a little bad" and a score of 1 if they indicated that it would be "very bad."

The order in which participants were asked about the wealthy versus the knowledgeable bystander for both the behavioral predictions and evaluations was counterbalanced.

6.4. Trait attribution

At the end of the session, participants were asked whether they thought each bystander was nice, mean, or "in the middle" (always presented as the third answer choice). Participants who selected the "nice" or "mean" option were asked about the degree of "niceness/meanness" (e.g., "Is Hannah very nice or a little nice?"). Participants were given a score of 0 if they rated a bystander as "very mean," 1 for "a little mean," 2 for "in the middle," 3 for "a little nice," and 4 for "very nice." The presentation order of bystanders was counterbalanced across participants.

7. Results

Chi-square tests of independence were conducted to compare the demographic composition of participants based on recruitment (i.e., existing database versus other); these two groups did not differ demographically ($ps > .20$). A one-way analysis of variance was used to examine potential differences between the participants who received the assistance endorsement question before the supervision endorsement and vice versa (responses collapsed across stories, range: 0–2) for each main measure, using the question order as a between-subjects factor. Participants' responses did not differ based on question order ($ps > .10$). All remaining analyses were collapsed across recruitment source and bystander endorsement order.

Several of the measures for this study involved binary outcomes and therefore the data were analyzed using GEE (Zeger et al., 1988) with a logistic regression model in SPSS. The number of cases per participant and the specific predictors are described for each of the relevant measures below (age in months was always standardized). The significant versus non-significant effects reported below did not change when three-way interaction terms were included where possible (i.e., behavioral predictions, obligation judgments, and severity judgments) and these interactions were not significant for any measure ($ps > .30$); only the two-way interaction terms were retained in the analyses reported below.

7.1. Trait attribution

Children's endorsements of either the wealthy bystander (0) or the knowledgeable bystander (1) in each story (i.e., "Which one should [Target] ask for help?" and "Which one should be in charge to help [Target]?" in response to both a civil liberties violation and physical injury) were included in these GEE analyses, resulting in two cases for each participant. Age in months, story type, and the

Table 2
Bystander Endorsement Justifications by Endorsement Item and Story Type.

	Assistance				Supervision			
	Civil		Physical		Civil		Physical	
Code	*n*	%	*n*	%	n	%	*n*	%
Knowledge	31	48.4	30	46.9	28	43.8	35	54.7
Wealth	9	14.1	13	20.3	8	12.5	12	18.8
Morality	1	1.6	0	0.0	2	3.1	1	1.6
Trait/Evaluative	6	9.4	2	3.1	8	12.5	3	4.7
Status/power	2	3.1	0	0.0	3	4.7	2	3.1
Other	15	23.4	19	29.7	15	23.4	11	17.2
Total	64	100	64	100	64	100	64	100

interaction term of these two variables were entered as predictors for each analysis. There was no significant main effect of age or story type, nor a significant interaction between these variables for either endorsement item (*p*s > .12).

A separate *t*-test against chance performance (.5 out of 1) was conducted for each endorsement item to examine whether children endorsed one or the other bystander systematically. Across ages, children endorsed the knowledgeable bystander as the person who should help the target in both stories (assistance endorsement): civil liberties $M = .77$, $SD = .43$, $t(63) = 4.98$, $p < .001$, $d = .43$; physical injury $M = .66$, $SD = .48$, $t(63) = 2.61$, $p = .005$, $d = .48$, and systematically endorsed the knowledgeable bystander as the person who should be in charge in both stories (supervision endorsement): civil liberties $M = .70$, $SD = .46$, $t(63) = 3.53$, $p < .001$, $d = .46$; physical injury $M = .67$, $SD = .47$, $t(63) = 2.91$, $p = .005$, $d = .47$.

7.2. Bystander endorsement justifications

Example justifications are presented in Table 1. Frequency data by story type and justification category are presented in Table 2. Overall, the most frequent justification participants used to support their bystander selection for both endorsement items referred to knowledge (e.g., "She would know a lot of good reasons why that rule isn't fair…" or "Because [Knowledgeable] knows more about a lot of stuff than [Wealthy].").

Separate chi-square tests for each endorsement item indicated that these justifications did not differ across age groups for either judgment (*p*s > .10; Holm-corrected alpha level for age =.025). There was a marginal difference by story type for the assistance endorsement ($p = .06$) and this difference was significant for the supervision endorsement, χ^2 (25, N = 64) = 95.38, $p < .001$ (Holm-corrected alpha level for story =.05). Although the overall frequency of references to traits was low, children referred to traits more in their responses for the civil liberties story than the physical injury story (12.5% vs. 4.7%). Children referred to wealth more in their responses for the physical injury story than the civil liberties story (18.8% vs. 12.5%).

7.3. Behavioral predictions

Children made a prediction for each bystander separately. The number of participants who stated either the "buying" or "knowledge" strategy spontaneously was low and varied in number across story and bystander (range: 5–18 participants; see Table S1). Children's selection of a knowledge-based strategy or a buying-based strategy in each story and for each bystander in response to the forced-choice question (physical injury: "Would Mia/Hannah buy Jade Band-Aids from the store or know how to check Jade's leg for other injuries?"; civil liberties: "Would Mia/Hannah buy Abby a stamp for her letter or know who to talk with to change the rule?") were included in these GEE analyses, resulting in four cases for each participant. Age in months, story type, bystander type, and each two-way interaction term were entered as predictors.

This analysis revealed two significant two-way interactions. See Fig. 1a and b. There was a significant interaction between age in months and bystander type, $\beta = .55$, Wald $\chi^2 = 7.04$, $p = .008$ (OR = 1.73, 95% CI [1.16, 2.61]). With age, children made more target predictions for the knowledgeable bystander than the wealthy bystander (Fig. 1a). Paired samples *t*-tests were used to probe this interaction, which revealed only a marginal effect for 7- to 8-year-olds in the direction of more target predictions for the knowledgeable bystander ($M = 1.59$, $SD = 0.67$) than the wealthy bystander ($M = 1.38$, $SD = 0.70$), $t(31) = 1.56$, $p = .06$, d = .28. Five- to 6-year-olds' target predictions did not differ significantly by bystander type: knowledgeable $M = 1.38$, $SD = 0.75$, wealthy $M = 1.50$, $SD = 0.62$, $t(31) = -0.94$, $p = .18$, d = .17.

There was also a significant interaction between bystander type and story type, $\beta = 1.30$, Wald $\chi^2 = 6.34$, $p = .012$ (OR = 3.67, 95% CI [1.33, 10.02]). Due to the categorical nature of.

Note: Error bars reflect standard error. Panel (a): Age is presented categorically to demonstrate the source of the interaction and predictions are collapsed across vignette.

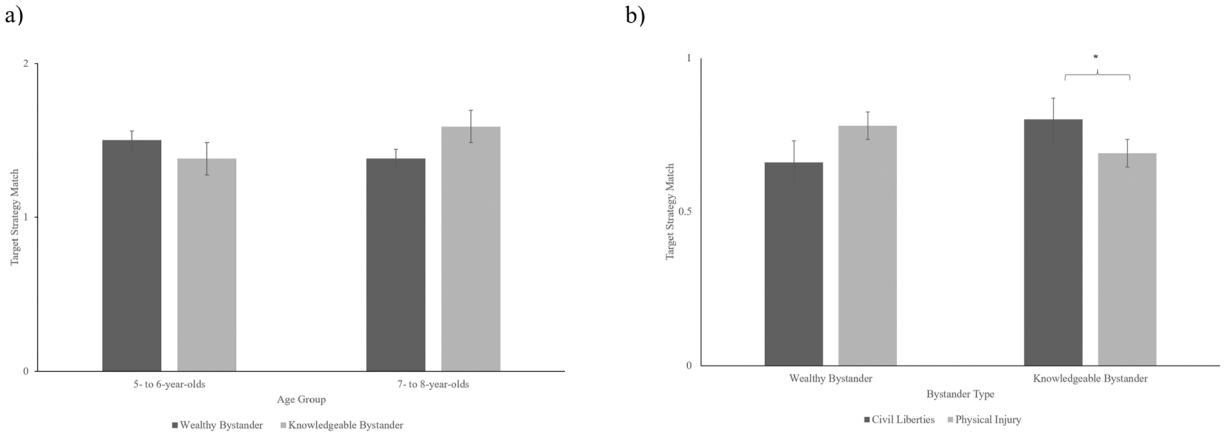

Fig. 1. Mean Target Strategy Match for Children's Behavioral Predictions by a) Age Group and Bystander, and b) Bystander and Story Type.

these variables, a chi-square test was used to probe this interaction. This analysis revealed that children's predictions differed by story type for the knowledgeable bystander, χ^2 (1, N = 64) = 6.97, p = .008: as a group, children were more likely to make the target prediction (i.e., knowledge-based strategy) for the knowledgeable individual in the civil liberties story than in the physical injury story (Fig. 1b). Children's predictions did not differ by story type for the wealthy bystander, χ^2 (1, N = 64) = 0.57, p = .45. The GEE analyses did not reveal an age by story type interaction nor any additional significant main effects or interactions (story type p = .06; all other $ps > .12$).

In an additional analysis to examine whether children's predictions for each bystander were systematic by age in each context as predicted, *t*-tests against chance performance (score of.5) were conducted. Five- and 6-year-olds systematically predicted a knowledge-based strategy for the knowledgeable bystander but only in the civil liberties domain, M = .75, SD = .44, $t(31)$ = 3.22, p = .003, d = .44; they made unsystematic predictions for this bystander in the physical injury domain, M = .63, SD = .49, $t(31)$ = 1.44, p = .16. Five- to 6-year-olds systematically predicted a buying-based strategy for the wealthy bystander but only in the physical injury domain, M = .84, SD = .37, $t(31)$ = 5.27, $p < .001$, d = .37; they made unsystematic predictions for the wealthy bystander in the civil liberties domain, M = .66, SD = .48, $t(31)$ = 1.83, p = .08.

Seven- and 8-year-olds systematically predicted that a knowledgeable bystander would use a knowledge-based strategy across both domains: civil liberties M = .84, SD = .37, $t(31)$ = 5.27, $p < .001$, d = .37; physical injury M = .75, SD = .44, $t(31)$ = 3.22, p = .003, d = .44. These children made systematic predictions for the wealthy bystander only in the physical injury domain: M = .72, SD = .46, $t(31)$ = 2.71, p = .011, d = .48; they made unsystematic predictions for the wealthy bystander in the civil liberties domain: M = .66, SD = .48, $t(31)$ = 1.83, p = .08.

7.4. Behavioral evaluations

Children made an obligation judgment ("How much does [Bystander] *have* to help Jade?") and a severity judgment ("How bad would it be if [Bystander] did *not* help Jade?") for each bystander separately. Children chose between two forced-choice responses for these judgments (0 = doesn't matter/a little bad, 1 = definitely should/very bad). These responses for each bystander and each story were included, resulting in four cases per participant for each GEE reported below. Age in months, story domain, bystander type, and each two-way interaction term were entered as predictors in each analysis.

For the obligation judgments, this analysis revealed a significant effect of bystander type: children were more likely to indicate that the knowledgeable bystander should help than the wealthy bystander, β = 1.98, Wald χ^2 = 7.51, p = .006 (OR = 7.24, 95% CI [1.76, 29.81]). There were no additional significant predictors or interaction terms ($ps > .22$). Therefore, these obligation judgments were

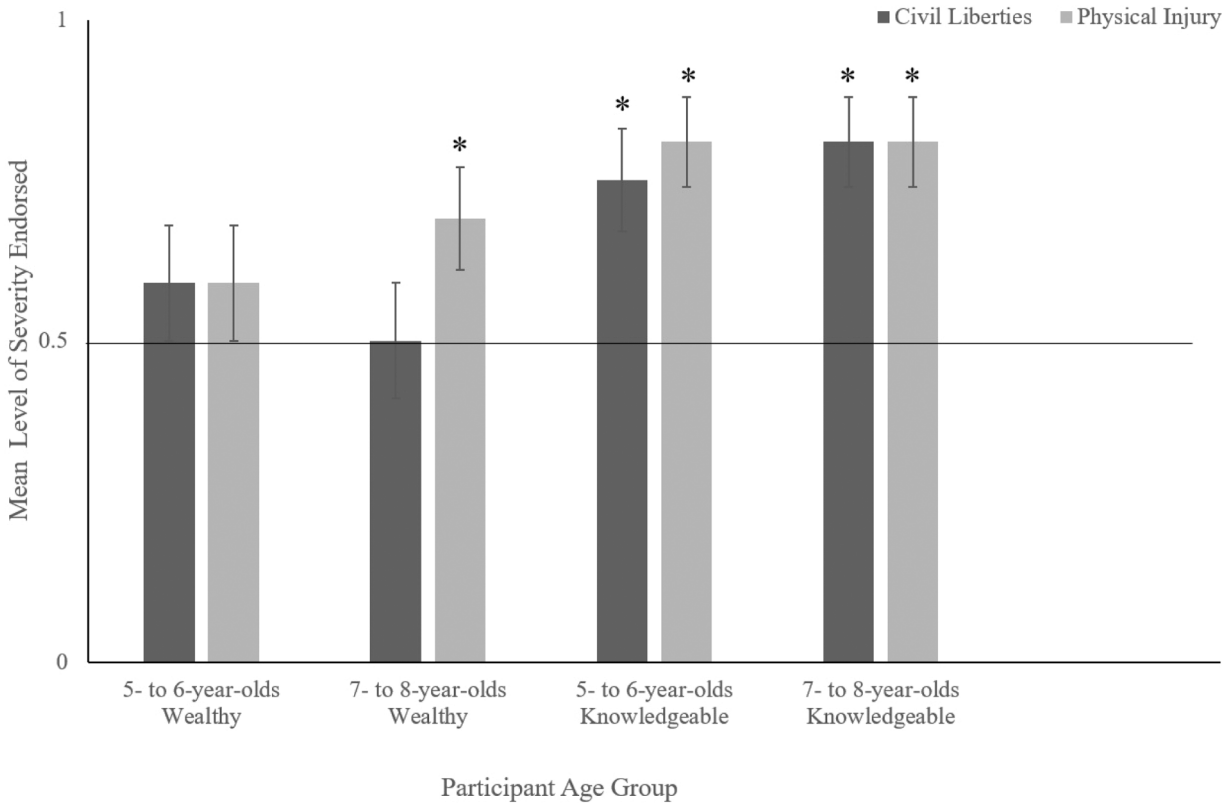

Fig. 2. Mean Level of Severity Endorsed (for Failure to Act) by Age Group, Bystander, and Story Type.

collapsed across context to examine whether both 5- to 6-year-olds and 7- to 8-year-olds were systematic in their obligation judgments for both bystanders. *T*-tests against chance performance (score of 1) indicated that all children systematically indicated that both bystanders should "definitely" help: 5- to 6-year-olds knowledgeable $M = 1.78$, $SD = 0.55$, $t(31) = 8.00$, $p < .001$, d = 0.55 and wealthy $M = 1.38$, $SD = 0.75$, $t(31) = 2.82$, $p = .008$, d = .75; 7- to 8-year-olds knowledgeable $M = 1.94$, $SD = 0.25$, $t(31) = 21.56$, $p < .001$, d = .25 and wealthy $M = 1.41$, $SD = 0.76$, $t(31) = 3.04$, $p = .005$, d = .76.

For the severity judgments, this analysis revealed a significant effect of bystander type: children were more likely to indicate that it would be "very bad" if the knowledgeable bystander did not help than if the wealthy bystander did not help, $\beta = 0.90$, Wald $\chi^2 = 5.89$, $p = .02$(OR = 2.46, 95% CI [1.19, 5.10]). There were no additional significant predictors or interaction terms (age by story type interaction $p = .07$, all other $ps > .37$). *T*-tests against chance performance (score of.5) were used to examine whether children's severity judgments for each bystander were systematic by age in each context. See Fig. 2. Across ages, children systematically indicated that it would be "really bad" if the knowledgeable bystander did not help the target across contexts: 5- to 6-year-olds civil liberties, $M = .75$, $SD = .44$, $t(31) = 3.22$, $p = .003$, d = .44, physical injury $M = .81$, $SD = .40$, $t(31) = 4.46$, $p < .001$, d = .40; 7- to 8-year-olds civil liberties $M = .81$, $SD = .40$, $t(31) = 4.46$, $p < .001$, d = .40, physical injury $M = .81$, $SD = .40$, $t(31) = 4.46$, $p < .001$, d = .40. Only 7- to 8-year-olds systematically indicated that it would be "really bad" if the wealthy bystander did not help the target, and only in the physical injury story, $M = .69$, $SD = .47$, $t(31) = 2.25$, $p = .03$, d = .47; civil liberties $M = .50$, $SD = .50$, $t(31) = 0.00$, $p = 1.00$. Five- to 6-year-olds did not provide systematic severity judgments in either context: civil liberties and physical injury both $M = .59$, $SD = .50$, $t(31) = 1.06$, $p = .30$.

7.5. Obligation judgment justifications

The coding scheme used to code these justifications is in Table 1. Frequency data by story type and justification category are presented in Table 3. Separate chi-square analyses for each domain revealed that children's obligation justifications for each bystander differed within each domain, civil liberties χ^2 (1, N = 64) = 41.41, $p = .003$; physical injury χ^2 (1, N = 64) = 31.46, $p < .001$ (Holm-corrected alpha level remained.05). With regard to the knowledgeable bystander, children referred to this person's knowledge most frequently as the reason that he or she was obligated to help the target, followed by references to moral principles (e.g., "it's the right thing to do"), and "other." Few participants referred to traits or status (see Table 2).

In contrast, children often referred to wealth in their obligation justifications for the wealthy bystander, but these references were a mixture of positive and negative (e.g., positive: "because she might have enough money to get a lawyer and go to court;" negative: "she's very wealthy and she might not want to help buy the post things or change the rule"). This category.

Note: Error bars reflect standard error. Asterisks indicate significance relative to chance performance (score of.5). Age is presented categorically, consistent with predictions about children's attention to negative outcomes.

was followed by "other" as the next most frequent justification, knowledge, and moral principles. A small number of children referred to traits and status (see Table 2). Children's justifications did not differ by age (knowledgeable $ps > .41$, wealthy $ps > .43$).

7.6. Trait attributions

Overall, children across ages provided neutral- to- nice trait attributions for both bystanders. A paired samples *t*-test was conducted for the attribution of each bystander within each age group to examine whether attributions differed by bystander type. Five- to 6-year-olds' attributions for the wealthy ($M = 2.72$, $SD = 1.25$) compared to the knowledgeable bystander ($M = 3.19$, $SD = .97$) did not differ significantly, $t(31) = -1.85$, $p = .07$. In contrast, 7- to 8-year-olds' attributions for the knowledgeable bystander ($M = 3.69$, $SD = .69$) were significantly more positive than their attributions for the wealthy bystander ($M = 2.81$, $SD = 1.12$), $t(31) = -4.28$, $p < .001$, d = .76.

8. Discussion

These findings indicate that children relied on others' knowledge relative to wealth. Five- to 8-year-olds endorsed a knowledgeable bystander over a wealthy bystander to provide and supervise assistance for someone in need, regardless of context. Children's trait attributions suggest that children held neutral to positive impressions of both bystanders, but children were more likely to judge that

Table 3
Obligation Judgment Justifications by Bystander and Story Type.

	Knowledgeable				Wealthy			
	Civil		Physical		Civil		Physical	
Code	*n*	%	*n*	%	*n*	%	*n*	%
Knowledge	27	42.2	22	34.4	8	12.5	9	14.1
Wealth	0	0.0	0	0.0	18	28.1	18	28.1
Morality	16	25.0	17	26.6	13	20.3	17	26.6
Trait/Evaluative	4	6.3	7	10.9	7	10.9	0	0.0
Status/power	1	1.5	0	0.0	2	3.1	0	0.0
Other	16	25.0	17	26.6	16	25.0	20	31.3
Total	64	100	64	100	64	100	64	100

the knowledgeable bystander "should" help and that it would be "bad" if this bystander did not offer help. Although the expected age-related differences did not emerge for these bystander endorsements and evaluations, children increasingly made predictions for each bystander that aligned with that individual's resource (knowledge or wealth) with age, particularly for the knowledgeable bystander. Overall, this direct comparison of knowledge versus wealth highlights that ongoing development in children's understanding of wealth may have increased the salience of knowledge as a potential resource.

Children's preference for knowledge in these negative event contexts mirrors their judgments in certain social learning situations (e.g., Boseovski et al., 2016) and suggests that knowledge is a potent cue across distinct contexts. Children's familiarity with learning from knowledgeable people (Kruglanski et al., 2005) may have been sufficient to motivate endorsement of the knowledgeable bystander to help someone in need. Indeed, parents reported high education levels in this sample. However, children referenced knowledge frequently in their obligation justifications and identified target strategies for a knowledgeable bystander better with age, which suggests that knowledge was particularly salient in this context. In fact, children may have disregarded wealth and compared bystanders based on knowledge because it is more familiar and easier to understand relative to wealth.

Consistent with this interpretation, qualitative data reflect a tendency for children to indicate that the knowledgeable bystander was "smarter" than the wealthy bystander and therefore reason that it "did not matter" if the wealthy bystander helped. Although introductory descriptions for each bystander may have highlighted differences in competence, the wealthy bystander was not described as incompetent. The absence of age-related change on the supervision endorsement might also be explained by a focus on the relative levels of knowledge between these bystanders. Children in this age range perceive wealthy individuals to be competent (e.g., Sigelman, 2012) and knowledge may have been more salient than any favorable wealth biases (e.g., Enright et al., 2020) in their reasoning about both endorsements. Indeed, children rarely referenced traits or other reasons why they thought the knowledgeable bystander "should" help (i.e., obligation judgment). A small number of children referred to the social status of the bystanders or indicated the potential for a wealthy bystander to use their resources strategically (e.g., bribery), which may suggest that these concepts are less well understood or only salient in specific contexts not captured in the current study.

However, age-related differences in children's translation of knowledge to specific helping behaviors suggest that 5- and 6-year-olds based their behavioral predictions on "familiar" social responses to problems, regardless of whether they viewed the knowledgeable bystander as the most competent helper. Partially consistent with predictions, 7- to 8-year-olds identified the target knowledge-based strategy for the knowledgeable bystander whereas 5- and 6-year-olds were less likely to do so. Many 5- to 6-year-olds predicted that both bystanders would make use of Band-Aids in the physical injury story and children referred to bandages in their justifications, which may reflect children's own injury experiences or beliefs that this strategy was the "better" one. In the civil liberties context, 5- to 6-year-olds selected the strategy that could have been interpreted as a socially competent response. Indeed, programs about bullying prevention and intervention suggest interventions such as seeking help from an authority figure (e.g., Perren & Alsaker, 2006).

Given that 4-year-olds readily identify strategies used by experts like doctors (e.g., fixing a broken leg, Lutz & Keil, 2002), it is somewhat surprising that 5- and 6-year-olds' behavioral predictions for the knowledgeable bystander did not reflect a knowledge-based strategy more frequently. The description of this bystander as generally knowledgeable rather than the use of a label to denote specific expertise may have prevented children from making connections between the knowledge-based strategy and the knowledgeable bystander. This finding suggests that there is a meaningful difference between children's ability to identify knowledge and reason about how to use knowledge to achieve a goal across contexts. Taken together with the overall preference for a knowledgeable rather than a wealthy helper on the endorsement items, young children's tendency to view wealthy people as competent or "smart" may be context-specific and depend on who else is present as a comparison point.

Despite potential connections between competence and status, children may have disregarded a wealthy bystander as a helper because the context did not elicit reasoning about status. Children referred to status least often to describe the wealthy bystander's helpfulness. It is possible that possessions and resources are most salient as cues to social status when children evaluate competition for those resources or inequality whereas intergroup dynamics were not explicit in the current study. In addition, children who referred to wealth could not elaborate on a specific use for it, which likely indicates that children across ages struggled to identify how wealth could resolve problems, particularly in a civil liberties context. Given that 4- to 6-year-olds fail to recognize corruption-related concepts (e.g., Reyes-Jaquez & Koenig, 2021) and reasoning about donation may require higher level moral reasoning (e.g., Ongley et al., 2014), it is perhaps unsurprising that these themes emerged infrequently and that children struggled with wealth-related behavioral predictions across ages. Children who referenced complex uses for wealth (e.g., bribery) focused on its positive outcomes (e.g., target's ability to mail a letter).

In contrast to the prediction that 5- to 6-year-olds would focus on event outcomes to reason about obligation, children generally indicated that both bystanders "should definitely help" the target. About 25% of these children referenced moral principles to justify their obligation judgments. These findings suggest that children interpreted the negative events as morally salient. In fact, 7- to 8-year-olds systematically indicated that it would be "really bad" if either bystander did not help the target in the physical injury story due to its urgency. Given this focus on welfare, it is somewhat surprising that children did not use moral principles more frequently in their evaluations of potential helpers. However, children tend to view behavior that would require "giving" to be less obligatory than acts that simply require someone to refrain from a negative behavior (Kahn, 1992).

The extent to which children interpreted bystanders' reactions to these events as a moral imperative remains unclear from these findings, but it is unlikely that children simply dismissed the wealthy bystander as a "bad" person. Children provided neutral to positive trait attributions for both bystanders, consistent with a strengthening tendency to view others positively during middle childhood (Boseovski, 2010). It is worth noting that only 7- to 8-year-olds made more positive attributions for the knowledgeable than the wealthy bystander, perhaps due to age-related increases in children's awareness of negative stereotypes about rich people (e.g.,

Elenbaas & Killen, 2019). Given that children tend to make associations between knowledge, trustworthiness, and "good" character, one speculative interpretation of these trait attributions is that they influenced children's obligation and severity judgments, reflecting heightened "moral expectations" for the knowledgeable bystander (see Marble & Boseovski, 2020). In other morally relevant contexts, children believe that people in positions of authority (i.e., high status) are "in charge" and have knowledge (e.g., Laupa, 1991) whereas children are more sensitive to relationships and reciprocity when they consider whether someone should contribute resources to help (e.g., Lenz & Paulus, 2021). Although adults recognize both knowledge and wealth as cues to prestige (e.g., Henrich & Gil-White, 2001), developmental research has not fully explored how these status related impressions fit in with children's impressions of knowledgeable people.

8.1. Limitations and future directions

One potential limitation of the present study is that the vignettes about a physical injury and a violation of personal rights represented very specific contexts. These issues involved adult characters and took place in contexts that might be less relevant for children (e.g., the post office). Although children demonstrate an ability to reason about age-related discrimination as an issue related to personal rights and fairness (Helwig & Jasiobedzka, 2001), it is also possible that the civil liberties scenario was interpreted as an age-related restriction, with which children may themselves experience (see Helwig, 1995), rather than an issue of civil liberties. Children's reasoning about knowledge and wealth in this study should be interpreted in light of these considerations and future research will be needed to address the extent to which knowledge and wealth (among other attributes) are relevant across a broader range of contexts.

However, the qualitative data in this study suggest that children understood both vignettes to represent meaningful issues and were able to justify why they thought a particular bystander should help overall. The proportion of children who were not able to justify their responses (e.g., "I don't know") was in line with prior work in similar areas of social cognitive research (e.g., Elenbaas & Killen, 2017; Gülgöz & Gelman, 2017), but may reflect that some children did not find knowledge or wealth to be meaningful in the current contexts. Given that children's reasoning about social and moral issues, including prosocial responses to negative events, is context-dependent and multi-faceted (Dahl, 2020; Helwig, 1997; Helwig et al., 2001; Nucci & Turiel, 2009), the results from this study expand on previous research regarding how characteristics of victims, transgressors, and bystanders influence children's moral judgments of negative events and expectations for helping behavior in those settings (e.g., Kahn, 1992; Terrizzi et al., 2020). Nonetheless, it will be important for future research to include additional ways to capture children's reasoning using open-ended measures to clarify children's social and moral interpretations of the behavior of wealthy and knowledgeable people in these contexts.

Another potential limitation of this study is that children were from relatively high socioeconomic status households with well-educated parents. Given that children associate group identities with status (Shutts, 2015) and recognize their own financial status (Hazelbaker et al., 2018), future research should consider how children's own experiences influence their perceptions of overlap between knowledge and wealth. In addition, the obligation and severity judgments do not provide concrete evidence that children perceived differences in moral obligation between these bystanders. Although qualitative data suggest that some children engaged in moral reasoning, future research should include additional measures that could address these potential perceived differences directly. Children expect less helping behavior in some high-costs scenarios (Kahn, 1992), but may not prioritize personal cost if a person's resources, characteristics, or social role is perceived to entail moral obligations (e.g., doctors take a Hippocratic oath). Future research should consider how these differences in setting conditions intersect with these characteristics to influence children's evaluations of knowledge alongside other cues, including status and power (see Marble & Boseovski, 2020). This work would clarify the extent to which children associate knowledge with status, given that developmental status research uses measures that address decision-making power and evaluations of skills (see Enright et al., 2020). Although the findings from the current study do not explicitly indicate that children perceive overlap in characteristics such as knowledge and wealth, it is likely that this association becomes more salient with age (e.g., Sigelman, 2013) and may be important when children evaluate high-status individuals across prosocial versus intergroup contexts.

9. Conclusion

Overall, children relied on knowledge over wealth to resolve morally salient issues, which provides insight into the foundation upon which children build trust in knowledgeable people. Children's understanding of knowledge compared to wealth along with the salience of these characteristics influenced their reasoning about knowledgeable and wealthy people as potential helpers in novel negative event contexts. These findings suggest that early familiarity with knowledge may promote trust in knowledgeable people across contexts, and not only for assistance to learn new information. In turn, this appreciation of knowledge might reinforce positive impressions of knowledgeable people. Taken together, these findings inform how children's judgments of others' characteristics and resources influence their decision-making about how to respond to harmful events. These findings suggest new connections between children's perceptions of knowledge, wealth, and morality that move the field of social learning forward.

Data Availability

Data will be made available on request.

Acknowledgements

We are grateful to the families from the community and from Children Helping Science, who supported this research. The authors also thank M. Faith Latham and Ashleigh McCall for their assistance with the study.

Appendix A

Example story content with sample images (female participant).Introduction This is Mia. Mia has a lot of money. She has more money than most other people, but she only knows about some things. Mia can buy new clothes and she takes a lot of trips, but Mia doesn't read very much.

This is Hannah. Hannah knows about a lot of things. She knows more than most other people, but she only has some money. Hannah can teach herself new things and she reads a lot of books, but Hannah doesn't buy very many things.

Physical injury vignette.

This is Jade, another person. She is at the park to walk around by herself today, but while she is looking around at the trees and squirrels, she falls down and hurts her knee. Hannah and Mia are both at the park and they both see Jade fall down. They both see that Jade is hurt and needs help.

Civil liberties vignette.

This is Abby, another person. She is at the post office to mail a letter, but she sees a sign with a new rule that says people her age are not allowed to mail letters. Hannah and Mia are both at the post office and they both know this rule is not fair. They both see that Abby needs help to mail her letter.

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