CHILD DEVELOPMENT

Child Development, July/August 2021, Volume 92, Number 4, Pages 1254–1273

Robin Hood or Matthew? Children's Reasoning About Redistributive Justice in the Context of Economic Inequalities

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How should one respond to ubiquitous economic inequalities? The legend Robin Hood suggests to take away from the wealthy to benefit the poor, whereas another strategy holds the opposite (Matthew effect). Here, 3- to 8-year-old children (N = 140) witnessed protagonists performing redistributions (e.g., Robin Hood, Matthew) of necessary and luxury resources between a wealthy and a poor child. Results showed that, with age, children increasingly approved of Robin Hood and increasingly disapproved of Matthew. In addition, reasoning about others' welfare mediated the effect of age on children's evaluation of Robin Hood, but only for necessary resources. This suggests that children regard restorative justice actions as a strategy to address social inequalities when it increases the welfare of disadvantaged agents.

The unequal distribution of resources, that is, wealth and poverty, is ubiquitous characteristics of human societies. This asymmetry in resource possessions constitutes a key factor in structuring societies and greatly impacts individuals' opportunities and welfare. Differential degrees of wealth and poverty are especially important when it comes to necessary resources, as they determine whether or not individuals are able to live outside the dangers of grave physical and psychological harm (Sen, 1983). The question of how to deal with such social and economic inequalities is crucial for politicians, activists, and researchers worldwide.

One way to address resource inequalities is embodied by the popular legend hero Robin Hood who takes from the rich and gives to the poor. Although he engages in stealing and robbery, many adults regard his mission to establish fair and just resource distributions positively. Interestingly, there is also a contrary approach known as the Matthew effect, named after a verse from the biblical book of Matthew: "Whoever has will be given more, and they will have an abundance. Whoever does not have, even what they have will be taken from them" (Matthew 13:12—New International Version). This would imply an increase in resource inequalities by further advantaging rich over poor individuals. This study examined the development of 3- to 8-year-old children's appreciation of redistributive actions (Robin Hood, Matthew) in the face of a pre-existing inequality. We investigated how children responded (in terms of judgment, reasoning, attributed judgment, attributed emotions, and punishment) to taking resources away from a rich child to give them to a poor child (or vice versa) and additionally manipulated the type of resource at stake—either necessary (must have) or luxury (nice to have) resources.

Our primary theoretical rationale for choosing Robin Hood over other forms of redistribution (e.g., asking for resources, taxation) was to present children with a scenario in which two central moral norms that are main pillars of contemporary moral reasoning (i.e., ownership and fairness norms) are clearly in conflict with one another. Given the lack of research on the development of normative conflict between ownership and fairness considerations, we aimed to capitalize on how children evaluate a moral dilemma involving these two norms. Furthermore, this moral dilemma is of paramount societal

We thank all kindergarten and elementary school teachers for their support in conducting the study and all children who participated in this study. We also thank Tim, Theresa, Rebecca, and Lenya Essler for supporting the data collection and contributing invaluable ideas throughout the process. In addition, we want to thank Moritz Heene for his generous advice concerning the data analysis. Finally, we thank Maria Mammen for helpful comments on earlier versions of the manuscript. This study was supported by a scholarship of the Claussen-Simon-Stiftung to SE.

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0009-3920/2021/9204-0003
DOI: 10.1111/cdev.13482

interest, as it inspires reflection on adequate and inadequate ways to respond to economic inequalities, a fact that is also evidenced by the timeless popularity of the Robin Hood character. The economic inequalities thereby refer to differences between individuals in the amount of material possessions, that is, disparities in resource possessions. From a theoretical point of view, we aimed at investigating the coordination of these two norms within the moral domain. This is far less studied than between-domain coordination. Domains hereby refer to the distinction of the moral domain (involving fairness, justice, rights), the societal/conventional domain (involving regulations and customs of social groups, institutions, society), and the personal domain (involving matters of individual choice and autonomy; Turiel, 1983). Thus, the study aimed at advancing our knowledge of the within-domain coordination of two central moral norms. Moreover, from a developmental point of view, we investigated developmental changes in children's coordination of different moral norms.

In this study, we define the term "norm/normative" as referring to moral obligations involving justice, rights, and welfare in the interaction with others (Smetana, 2013; Turiel, 1983). Consequently, we also define ownership norms as morally relevant obligations. This relates well to previous research that has shown that the violation of ownership norms is related to considerations about justice and rights (Rossano, Rakoczy, & Tomasello, 2011; Vaish, Missana, & Tomasello, 2011).

This study follows research on children's developing normative considerations of equity and others' welfare in the context of resource allocation decisions (e.g., Chai & He, 2017; Cooley & Killen, 2015; Damon, 1977; Elenbaas, Rizzo, Cooley, & Killen, 2016; Paulus, 2014; Rizzo & Killen, 2016; Shaw & Olson, 2012; Ulber, Hamann, & Tomasello, 2015). This line of research has provided valuable insights into what children view as fair in the context of resource distribution. One key finding is the equality-to-equity shift over the preschool years. That is, while younger preschoolers prefer equal distributions of resources irrespective of context, older preschoolers take into account welfare norms and use equitable allocations as a means to benefit disadvantaged recipients, even if that means not allocating equally (e.g., Rizzo & Killen, 2016; Schmidt, Svetlova, Johe, & Tomasello, 2016; Smith & Warneken, 2016). In one study (Wörle & Paulus, 2018), older (5- to 6-year-old) but not younger (3- to 4-year-old) preschoolers affirmed a third party's equitable distribution (allocating more resources to a poor recipient) and actively protested against inequitable distributions (allocating more resources to a rich recipient). In addition, previous work has revealed that with age children increasingly consider others' welfare in their resource distributions (Dunn, Cutting, & Demetriou, 2000; Elenbaas & Killen, 2016a; Rizzo, Elenbaas, Cooley, & Killen, 2016). Younger preschoolers of about 3 years of age do not seem to have such a strong consideration for the well-being of the recipients in resource allocation tasks. Interestingly, some studies have even shown that they favor advantaged over disadvantaged recipients in their moral responding, for example, in their resource allocations (Essler, Lepach, Petermann, & Paulus, 2020; Kenward, Hellmer, Söderström Winter, & Eriksson, 2015; Li, Spitzer, & Olson, 2014). Moreover, 6- to 8-year-olds but not 3- to 5-year-olds have been shown to allocate luxury (nice to have) but not necessary (needed to avoid harm) resources more meritoriously and referenced others' welfare only in their justifications for the allocations of necessary resources (Rizzo et al., 2016). In a similar vein, children over 6 years have been found to appreciate the value of resources in addition to numerical properties. That is, they did not only allocate equally in a numerical sense but also considered that some resources are of higher quality than others (Sheskin et al., 2016). Taken together, these findings point to developmental changes in children's reliance on equity and others' welfare in their moral actions and reasoning, and their sensitivity to the types of resources that are being distributed.

Previous research, however, has largely focused on how children distribute or evaluate distributions of windfall resources, that is, resources introduced by the experimenter for children to distribute (appearing out of the blue). In addition, past work has mainly relied on luxury resources (e.g., stickers, balloons, toys), that is, nice to have resources, which have a rather limited impact on individuals' welfare. However, in human life, sociomoral considerations often occur in response to already existing inequalities and are particularly pressing when they relate to an unequal distribution of necessary resources. People mostly do not have windfall resources to rectify or modify inequalities. In such situations, as exemplified by Robin Hood, the redistribution of resources is a controversial possibility (e.g., Hirshberg, 2000).

Only a few studies have addressed children's responses to existing inequalities (e.g., Dys, Peplak, Colasante, & Malti, 2019; Elenbaas & Killen, 2016a, 2016b; Rizzo, Elenbaas, & Vanderbilt, 2020; Rizzo & Killen, 2016). One study showed that preschoolers

expect an agent to decrease a resource disparity through the allocation of windfall resources if the agent evaluates the resource disparity negatively, but increase the resource disparity, if the agent evaluates the resource disparity positively (Elenbaas & Killen, 2016b). Another study found that 8- but not 4-year-olds reported more negative moral emotions after the hypothetical exclusion of a needy child compared to a less needy child. Children seemed to increasingly differentiate their responses to existing inequalities based on the degree to which others' welfare was compromised (Dys et al., 2019). These findings suggest that negative evaluations of existing inequalities could lead children to modify them by means of windfall resources, especially when the welfare of the protagonists is at stake. However, it remains unclear whether this tendency is strong enough for children to also endorse resource redistributions.

Thus, it remains an open question whether and to what extent children consider the redistribution of resources as an acceptable strategy. In particular, are there developmental differences across early childhood? Moreover, do children regard redistributions of resources as more justified when necessary resources are concerned? The existence of childhood heroes such as Robin Hood suggests that this might be the case. Investigating the above questions is of particular importance as it can inform our understanding of how children's weighing of fairness and welfare concerns regarding an economic inequality changes across development. Thus, it would show whether children view inequalities of luxuries as more justified than inequalities of necessities and therefore speak to theoretical accounts claiming others' welfare to be a primary concern in children's fairness considerations. These questions have not been addressed by previous research and constitute the focus of this study.

Ownership and Resource Redistribution

Notably, redistributing resources is not merely a motor act, but implies a violation of property rights. That is, the act of redistributing resources entails taking away resources from an agent and allocating them differently. Even if the goal of such a redistribution is to further equity and welfare, the redistribution itself constitutes a violation of ownership norms.

Past research has provided important insights into children's normative understanding of ownership and property rights (Nancekivell, Vondervoort, & Friedman, 2013; Neary & Friedman, 2014; Pesowski, Kanngiesser, & Friedman, 2019; Riedl, Jensen, Call, & Tomasello, 2015; Rossano et al., 2011; Vaish et al., 2011). These studies show that starting at age 3, children understand the concept of ownership, judge the violation of ownership norms as wrong, and punish third parties when they violate ownership norms. Thus, ownership norms can be seen as a moral concern for young children.

Children's normative stance toward ownership seems to develop between 2 and 3 years of age. That is, while 2-year-olds only protested when a puppet took their own instead of a third party's property away, 3-year-olds recognized that property rights are agent-neutral (Rossano et al., 2011). More specifically, they did not only protest when their own property was taken away, but also sometimes when the puppet took a third party's property away. In a different study, 3-year-olds intervened when a puppet destroyed the artwork of another absent puppet and thus violated the absent puppet's property rights. Children protested against the action and behaved especially prosocially toward the harmed puppet upon its return (Vaish et al., 2011). Further work demonstrated that 3- and 5-year-old children intervened in a first and third party scenario when property rights were violated through the taking away of an object. Three-year-olds did not discriminate between different acts of harm (theft, redistribution by a third party not benefitting from its action), but responded negatively to them. In contrast, 5-year-olds partly differentiated the act of harm in their punishment and punished acts of theft (Riedl et al., 2015). These findings point to a strong normative understanding of ownership and property violations in 3-year-old children, which seems to become more nuanced over the preschool years. Importantly, they suggest that, as far as redistributions of resources are concerned, children's ownership norms might come into conflict with norms of equity and others' welfare. This study is one of the first to directly investigate the development of children's resolution of this normative conflict within a context of inequality.

Surprisingly, little developmental research has tried to address children's evaluations of redistributive justice acts in the context of a resource inequality. In one study with 10- to 11-year-old females, children viewed third-party transfers as more fair when they either increased equality or benefitted the disadvantaged (Brickman & Bryan, 1975). However, the initial inequality in this study seemed unfair as all protagonists worked equal amounts but then received different rewards by chance. Thus, redistributions would simply counteract an

unfair distribution mechanism and could be justified based on merit considerations. In addition, ownership structures were not fully established yet as the majority of the rewards were not clearly characterized as belonging to the protagonists. Lastly, there was no mention of a potential effect of the inequality on the protagonists' welfare. This study aimed to expand this research by controlling for merit concerns, more clearly establishing ownership structures, and introducing others' welfare by means of necessary and luxury resources.

From a theoretical perspective, there are several considerations relevant to this study. First, it would be theoretically paramount to gain insights into developmental changes in how children resolve the conflict between equity norms and property rights. More specifically, this study speaks to accounts stating that children's multiple moral considerations become more coordinated across childhood (Piaget, 1932; Rutland & Killen, 2017; Smetana, 2013; Turiel, 2008) as compared to accounts stressing children's primary reliance on a single norm or rule (e.g., Kohlberg, 1971). The coordination of moral concerns is particularly relevant in situations in which others' well-being is at stake (Dahl, Gingo, Uttich, & Turiel, 2018). Younger children seem to mainly consider others' welfare in their resource sharing when external cues (e.g., emotional signals) enhance their perception of another individual being in need (Svetlova, Nichols, & Brownell, 2010). It is not until later in the preschool years that children rely on equity as a normative obligation toward disadvantaged recipients and prioritize it over other norms such as equality (Huppert et al., 2019; Wörle & Paulus, 2018). This study aims to further explore children's considerations of equity in resource redistributions, which is related to notions of others' welfare, when such redistributions compromise others' property, which is related to children's sense of justice and ownership. Thus, this study focuses on the development of children's coordination of different normative entitlements within the moral domain.

Second, from a developmental perspective, we hypothesized that with increasing age children would increasingly approve of Robin Hood redistributions by judging them more positively, attributing more OK judgments to the protagonist, and judging the protagonist as less deserving of punishment (Hypothesis 1). That is, we expected older but not younger children to assign more weight to considerations of others' welfare as opposed to concerns with violating ownership norms. As younger preschoolers do not strongly consider others' welfare yet but seem to have a clear understanding of ownership norms, they should differentiate little between different redistributions and mainly rely on ownership norms in their judgments. Thus, there should only be minimal conflict between fairness and ownership norms in younger children. However, as welfare and fairness norms have been found to become more prominent with age while ownership norms seem to change to a lesser extent, older children should experience a normative conflict between ownership and fairness considerations. Such a conflict should be especially pronounced in the case of Robin Hood redistributions in which the welfare of the poor character is at stake. This should be different in a situation in which the redistribution of resources would not be motivated by others' welfare. That is, an increase in children's representations of welfare norms between 3 and 8 years (e.g., Malti et al., 2016) should lead to an increase in the flexible coordination of ownership and fairness concerns, depending on how others' welfare is threatened. We thus hypothesized that older children would prioritize fairness norms over ownership norms in their judgments of and assignment of deserved punishment to the protagonist in the Robin Hood context, but not in the Matthew context (Hypothesis 2).

Third, others' welfare is not only a numeric concept in retributive justice considerations, but it hinges on the quality of the resource in question (Sheskin et al., 2016). That is, necessary items are paramount in guaranteeing a basic level of well-being and serve to fulfill essential human needs such as food, health, or shelter. On the contrary, luxury items can be conceptualized as resources of lesser impact on one's well-being. Thus, from a theoretical perspective, redistributive justice actions might be justified to a greater extent when they aim to uphold a basic supply of necessary items to prevent grave harm. We thus predicted that, with age, children should judge redistributions of necessary resources more negatively and more deserving of punishment than redistributions of luxury resources, because, according to children's reasoning, necessary resources are significantly associated with others' well-being and thus should not be removed (Hypothesis 3). For the redistribution of resources from a rich to a poor other (Robin Hood), however, we expected a more positive evaluation (more positive judgment, more positive attributed emotions and judgments, less attributed deserved punishment) in the context of necessary resources, because they increase the poor recipient's welfare to a greater extent than luxury resources (Hypothesis 4).

Fourth, previous studies reported a trend that younger preschool children allocate more resources

to rich than poor others (e.g., Paulus, 2014; Rizzo & Killen, 2016) resembling the classical Matthew effect (e.g., Stanovich, 2009). It has been suggested that young preschool children might ascribe normative meaning to an existing inequality (Essler et al., 2020). We therefore tested the hypothesis whether especially younger preschool children approve of redistributions increasing the previous resource disparity in their judgments of the protagonist (e.g., taking from a poor character and giving to a rich character; Hypothesis 5).

The Current Study

This study aimed at investigating age-related differences in 3- to 8-year-old children's responses to scenarios where ownership norms were in conflict with welfare and equity norms. That is, we presented children with an initial resource inequality, a poor character owning a few resources and a rich character owning many resources. To establish ownership, we used verbal testimony, placed the resources into the respective character's room, and emphasized that the characters were the first to possess the resources (cf. Blake, Ganea, & Harris, 2012; Friedman & Neary, 2008; Nancekivell et al., 2013). Children then witnessed four redistributions of resources by a third party: (1) Robin Hood: the third party takes away resources from the rich and gives them to the poor, (2) Matthew: the third party takes away resources from the poor and gives them to the rich, (3) the third party takes away resources from the rich and keeps them for themselves, and (4) the third party takes away resources from the poor and keeps them for themselves. By including the control trials (3) and (4) we wanted to assess whether children's responses in (1) and (2) were based on the redistribution of resources between the poor and the rich child and not just on taking away from rich or poor others per se (e.g., Blake & McAuliffe, 2011). In addition, we used necessary (needed to avoid harm and ensure well-being) and luxury (nice to have) resources (Essler et al., 2020; Meidenbauer, Cowell, Killen, & Decety, 2018; Rizzo & Killen, 2016; Rizzo et al., 2016). Thus, children witnessed each redistribution twice, once with necessary and once with luxury resources (within-subjects). After each presentation, children judged how OK they found the redistribution (to assess the acceptability of each redistribution), reasoned for it (to assess which normative considerations children based their judgment on), judged how OK the protagonist found the redistribution, judged how the protagonist felt after the redistribution, and rated the deserved punishment for the protagonist (to assess how seriously children viewed any norm violations).

Method

Participants

The final sample consisted of 140 three- to eight-year-old children (57 females, M_{age} = 73.21 months, SD_{age} = 19.73 months, age range = 39–104 months). There were no differences in ethnicity. The majority of the sample was of middle socioeconomic status and all participants spoke German. Seven additional participants were excluded from the sample because they answered the final memory check questions incorrectly. Data collection took place from March through June 2019. Participants were recruited from day-care centers and elementary schools located in urban areas in Germany. First, day-care centers and elementary schools were invited to participate in the study. Institutions were selected based on their urban location, rural institutions were excluded. Upon agreement, the respective teachers handed out a description of the study alongside a consent form to the parents who, if interested, signed and returned the form. At the beginning of the data collection, the experimenter collected the forms and asked the respective children individually if they were willing to take part in the study. The study was positively reviewed by the local ethics committee.

Power Analysis

To estimate the required sample size we used G*Power (Faul, Erdfelder, Buchner, & Lang, 2009) to conduct a statistical power analysis with α = .05 and power = .80. Comparable previous studies on restorative justice in preschoolers (Riedl et al., 2015), and on children's fairness considerations in the context of a pre-existing inequality (Paulus, 2014; Rizzo & Killen, 2016) have mostly yielded medium effect sizes. In addition, our pilot study (N_{pilot} = 33) pointed to an effect of small to medium size. Thus, we assumed a conservative small to medium-sized effect for the power analysis. For a multiple linear regression, these input values resulted in a projected sample size of N = 101. Consequently, we aimed for a sample of at least N = 100–120.

Design

The study followed a 2 (resource type) × 4 (trial type) within-subjects design. Resource type

consisted of necessary and luxury resources. Trial type consisted of four redistributions: protagonist takes two resources away from the rich and keeps them for himself, the protagonist takes two resources away from the poor and keeps them for himself, the protagonist takes two resources away from the rich and gives them to the poor (Robin Hood), the protagonist takes two resources away from the poor and gives them to the rich (Matthew). Thus, each participant witnessed eight redistributions of the initial resource possessions. After each redistribution, participants responded on four dependent measures, which were presented in a fixed order. Children indicated their own judgment, the attributed judgment, the attributed emotional state, and the deserved punishment of the protagonist. The eight redistributions were presented in two blocks with one block containing the four alterations (trials) with necessary resources and the other block containing the four alterations (trials) with luxury resources. The order of the blocks was counterbalanced between participants of the same age in years and gender. Moreover, we counterbalanced the order of the four redistributions within the two blocks.

Materials and Procedure

Familiarization Phase

Training on Likert-type scale. The study took place in a quiet room at the respective day-care centers and schools. Children were asked if they wanted to play a short game. Each child was tested individually. The session lasted about 20 min. At the beginning, participants were introduced to the 4-point Likert-type scale, which consisted of visual and verbal markers. The visual markers were faces with varying smiles and frowns, the verbal markers were placed underneath the faces (1 = *not OK at all*, 2 = *not so OK*, 3 = *a little OK*, 4 = *very OK*). The experimenter told the children that they could show how OK or not OK they found something to be by pointing at the respective faces and practiced the use of the scale with the participants by means of two test items ("How OK do you find it if an older child hits a younger child?", "How OK do you find it if a mother comforts her crying child?").

Introduction of resource types. Then, the experimenter told participants a story about a rich child and a poor child (gender matched) and introduced both of these children with photographs (assignment of names to photographs counterbalanced between participants). Participants heard that both children were of their age and that they came from the land of colors far away. Following, the difference between necessary resources (called *Notis*) and luxury (called *Luxis*) resources was explained (resources illustrated by cardboard-cutouts). As pilot testing revealed inconsistent judgments regarding which natural resources are considered necessary and which are considered luxury, we followed previous research and introduced novel resources (Essler et al., 2020; Rizzo et al., 2016). The experimenter showed children two boxes, one overfull with necessary resources and one containing only two necessary resource items:

> <Name of the rich child> and <name of the poor child> desperately need Notis. If they have many Notis [pointing to the full box], they can eat many Notis [play-acting]. Then they are healthy and happy [play-acting, attaching a happy face to the box full with Notis to show their impact on the well-being]. If they have few Notis [pointing to the box with few = 2 Notis] or even no Notis at all, they cannot eat a lot [play-acting]. Then they get sick, have a tummy ache, and are hurting a lot [play-acting, attaching a sad face to the box with 2 Notis to show their impact on the well-being].

Subsequently, the experimenter showed children two boxes with luxury resources, one overfull with luxury resources and one containing only two luxury resources:

> <Name of the rich child> and <name of the poor child> like Luxis. If they have many Luxis [pointing to the full box], they can play with them [play-acting]. Then they are happy [play-acting, attaching a happy face to the box full with Luxis to show their impact on the well-being]. If they have few Luxis [pointing to the box with few = 2 Notis] or even no Luxis at all, they can play something else, like hide-and-seek or tag [play-acting]. Then they are still happy [play-acting, attaching a happy face to the box with 2 Luxis to show their impact on well-being].

To ensure children understood the different resource types, the experimenter asked them two memory questions. They were repeated up to two times, if necessary, alongside the story. All participants passed the comprehension check questions in the end.

Differential wealth of the characters. Next, the experimenter explained that the rich child came from a city called blue-town, where all children are

very rich and have beautiful rooms to live in and many toys. This was demonstrated by showing a cardboard-standup of the rich child's room and hanging the photograph of the rich child into the room (cf. Horwitz, Shutts, & Olson, 2014). The experimenter explained that the room contained a nice bed, a big wardrobe with a lot of clothes and even some toys in it, and shelves full of toys. Then the experimenter said that because the rich child is rich, s/he also possesses many Notis or Luxis (depending on whether the necessary or the luxury block was first) and placed the box full with Notis/Luxis right in front of his/her room. By pointing to the happy photograph of the rich child hanging in the room, the experimenter repeated that because s/he has many Notis/Luxis s/he is very happy. The rationale for presenting the rich child as simultaneously high in socioeconomic status (SES) background and resource-rich and the poor child as simultaneously low in SES background and resource-poor was threefold. First, SES usually corresponds to children's actual possessions (e.g., children from high SES families have generally more possessions than children from low SES families). Thus, we kept our design coherent with children's experiences of connections between SES and resource possessions to avoid confusion. Second, to investigate Robin Hood redistributions, we wanted to ensure that the differing SES of the characters evidenced by the furniture in their rooms portrayed the characters as rich/poor throughout. This made the contrast between the characters more salient. That is, as there has been little previous research on the Robin Hood effect, we added SES to depict an aggravated inequality. This ensured that we would not miss a potential effect due to a poor/rich description that was too weak or potentially not linked to real-world inequalities (as we used fictional resources). Third, to better illustrate the economic inequality with real-world objects (as the resources were already fictional), we used the different rooms of the characters. This ensured that also younger children could follow the story, get a clear idea of who is rich/poor, and it also situated the redistributions in a real-world context.

Subsequently, the experimenter explained that the poor child came from a city called green-city, where all children are very poor and have old rooms to live in and very few, broken toys. Then children saw the cardboard-standup room of the poor child, which was placed next to the room of the rich child with some space in between. It contained an old mattress, one broken toy, and a basket with old clothes in it. The experimenter went on to explain that because the poor child is poor, s/he possesses only two Notis/Luxis and placed the respective resource box right in front of his/her room. By pointing to the happy (in the case of few luxury resources) or sad (in the case of two necessary resources) photograph of the poor child hanging in the room, the impact of his/her resource possessions on his/her well-being was repeated. To play-act each of the subsequent eight redistributions, the experimenter used eight different protagonists (gender matched), who each possessed a box with a medium amount of the respective resource (necessary/luxury). Thus, the protagonists were introduced as neither rich nor poor in all the eight redistributions.

To rule out that children attributed the differential wealth of the characters to different amounts of effort or merit (Baumard, Mascaro, & Chevallier, 2012), both children were presented with equal amounts of effort (equally hard-working): "Both, (name of the rich character) and (name of the poor character) work equal amounts and equally hard." Thus, the disparity in resource possessions was unrelated to the children's behavior. To make sure children understood the differential wealth of the characters, they were asked two memory questions, which were repeated if necessary. Ultimately, all participants answered correctly.

Testing Phase

Test trials. The experimental test consisted of two main blocks. Each block consisted of the same four redistributions (trial types), and only differed in the kind of resource (necessary vs. luxury) the two characters and the protagonist currently possessed. The four redistributions were as follows: (a) Robin Hood ("Look, (name of protagonist) goes into the rich child's room, takes two Notis/Luxis away from him/her and gives them to the poor child [laying the two Notis/Luxis into the poor child's box]"), (b) Matthew ("Look, (name of protagonist) goes into the poor child's room, takes two Notis/Luxis away from him/her and gives them to the rich child [laying the two Notis/Luxis into the rich child's box]"), (c) taking away from the rich and keeping for oneself ("Look, (name of protagonist) goes into rich child's room, takes two Notis/Luxis away from him/her and keeps them for himself/herself [laying the two Notis/Luxis in front of the protagonist's closed box to keep them visible]"), (d) taking away from the poor and keeping for oneself ("Look, (name of protagonist) goes into the poor child's room, takes two Notis/Luxis away

from him/her and keeps them for himself/herself [laying the two Notis/Luxis in front of the protagonist's closed box to keep them visible]"). Pilot testing as well as previous studies (Rossano et al., 2011) revealed that from 3 years of age, children understand that taking away objects that belong to someone else without asking constitutes a violation of property rights. Based on research showing that numeric cognition constitutes an important factor in children's (re)distributions (Chernyak, Harris, & Cordes, 2019), we used equal amounts of resources in each redistribution. That is, we wanted to rule out children's possible inferences that one redistribution (e.g., if the protagonist took 10 resources away from the rich character) is qualitatively different (e.g., a more serious violation of ownership norms) from another redistribution (e.g., if the protagonist took two resources away from the poor character).

Dependent measures. Following each redistribution, children were asked to respond on different dependent measures.

Judgments. Children were asked to judge how OK they find what the protagonist has just done on a 4-point Likert-type scale: e.g., "How OK do you find it that (name) has taken two Notis away from Tom and given them to Ole?"

Reasoning. Subsequently, participants were asked to justify their answer: "Why do you think it was (. . .) OK?" Children's reasoning was content-coded into four categories, which were created inductively by analyzing children's responses: Normative (referencing the violation of norms; what one may or may not do; what is OK and not OK; justifications referring to norms of ownership, fairness, and/or welfare; e.g., "because it is not OK to steal"; "it's not OK, because those belong to the rich character"), resource possessions (referencing the property situation of the characters and/or the relations between the possessions in terms of describing the perceptually available information without referencing OK/not-OK judgments, normative considerations or other evaluative statements; e.g., "because she has many and she has few"; "because he has more than the other one"), others' welfare (referencing the well-being of the characters by describing the welfare of the characters (e.g., pain, hunger, joy, sadness) without referring to normative aspects; e.g., "because he has given him food so that he is not so much in pain"; "because then he will be sad"), and other (statements unrelated to the story or general statements; e.g., "because it is only then"). Coders determined for every statement whether it fit each of the categories fully (= 1), partially (= 0.5), or not at all (= 0). Thus, a given response could be coded into more than one category. The inter-rater reliability based on 25% of the interviews (n = 34, 13 children did not provide a reason for their allocation) was Cohen's weighted κ = .81.

Attributed judgments. Next, participants were asked to judge how the protagonist himself/herself evaluates his/her action on a 4-point Likert-type scale: "How OK does (name) find what s/he has done?"

Attributed emotions. Then, children were asked to indicate the emotional state of the protagonist after the redistribution on a 5-point (to include the possibility of a neutral emotion as the scale midpoint) Likert-type scale (1 = *very negative*, 2 = *a little negative*, 3 = *neutral*, 4 = *a little positive*, 5 = *very positive*): "How does (name) feel now?"

Deserved punishment. Lastly, participants were asked whether the protagonist should be punished (1 = *not at all*, 2 = *a little bit*, 3 = *a lot*): "Should (name) get in no trouble, a little bit of trouble, or a lot of trouble for his/her behavior?"

At the end of the interview, the experimenter asked children the four memory questions that had been asked before the blocks. Children, who were unable to answer (n = 7), were excluded from the final sample. Finally, the experimenter thanked the children for their participation and took them back to their classrooms.

Data Analysis

Preliminary analyses revealed no effect of gender, so it was dropped from the main analysis. As all the dependent measures used Likert-type scales and thus led to ordinal response variables, cumulative link models were specified with the clmm-function of the ordinal-package in R to test our predictions (Christensen, 2019). Repeated measures factors (resource type, trial type) were specified as random effects nested within participants. The majority of our analyses followed a confirmatory approach and tested the theoretically deduced hypotheses described above. In some parts of the reasoning analysis, we conducted tests without prespecified hypotheses and thus explicitly state these analyses as exploratory.

Results

Descriptives

Table 1 presents descriptive statistics for all measures. Figure 1 shows exemplary histograms for the judgment measure in the Robin Hood and the

Table 1
Descriptives of the Main Variables

	M (necessary/luxury)	*SD* (necessary/luxury)
Taking from the rich		
Judgment	1.79/1.94	0.96/1.05
Reasoning: Normative	0.56/0.53	0.46/0.46
Reasoning: Resource possessions	0.30/0.37	0.45/0.47
Reasoning: Others' welfare	0.24/0.21	0.39/0.38
Judgment (attribution)	3.28/3.31	0.99/1.01
Emotion (attribution)	3.72/3.60	1.46/1.49
Punishment	2.41/2.30	0.64/0.67
Taking from the poor		
Judgment	1.25/1.41	0.69/0.85
Reasoning: Normative	0.36/0.42	0.45/0.46
Reasoning: Resource possessions	0.56/0.50	0.49/0.50
Reasoning: Others' welfare	0.39/0.29	0.46/0.43
Judgment (attribution)	3.11/3.13	1.14/1.13
Emotion (attribution)	3.51/3.73	1.58/1.49
Punishment	2.74/2.63	0.57/0.59
Robin Hood		
Judgment	2.75/2.75	1.15/1.20
Reasoning: Normative	0.38/0.34	0.45/0.45
Reasoning: Resource possessions	0.48/0.53	0.49/0.50
Reasoning: Others' welfare	0.39/0.23	0.47/0.40
Judgment (attribution)	3.31/3.34	0.91/0.89
Emotion (attribution)	3.86/3.91	1.36/1.25
Punishment	1.98/1.96	0.75/0.73
Matthew		
Judgment	1.34/1.47	0.78/0.89
Reasoning: Normative	0.28/0.29	0.42/0.43
Reasoning: Resource possessions	0.63/0.53	0.47/0.50
Reasoning: Others' welfare	0.36/0.32	0.45/0.44
Judgment (attribution)	3.07/3.18	1.06/1.00
Emotion (attribution)	3.57/3.35	1.41/1.46
Punishment	2.69/2.57	0.57/0.64

Matthew trial by resource type. These first results suggest that children judged the Robin Hood trial as more OK compared to the Matthew and the taking away from the poor trials. However, a substantial number of the children judged the Robin Hood trial as not OK as evident in the histograms.

Cumulative Link Models: Data Analytic Plan

To test for main effects and the interactive effects of age, resource type, and trial type on children's responses, we specified cumulative link models for each dependent measure except reasoning, which was analyzed separately (see below). Age, resource type, and trial type (taking from rich, taking from poor, Robin Hood, Matthew) served as predictors, with resource type and trial type as random effects nested within participants. Based on the significant effects of the trial types, we further analyzed the effects of age and resource type in each trial type separately. We specified cumulative link models for each trial type with age and resource type as predictors as well as resource type as random effect nested within participants. All *p*-values from the analyses of the separate trial types were Bonferroni-corrected (e.g., there are four judgment models because of the four trial types, hence the *p*-values were adjusted for testing multiple models).

We report the results for each dependent measure separately in the following order: judgments, attributed judgments, attributed emotions, deserved punishment, and reasoning. Analyses of the trial types (taking from rich, taking from poor, Robin Hood, Matthew) are reported within each dependent measure.

Judgments

For the judgment measure ($R^2 = .30$, $p < .001$, all reported R^2-values are Cox and Snell pseudo values resulting from the comparison of the fitted model against the null model), age emerged as a significant predictor, $b = -0.086$, $SE = .01$, $z = -7.02$, $p < .001$. This indicated that with age, children judged the redistributions in general as less OK. In addition, significant interactions were found between age and trial type, $b = 0.029$, $SE = .004$, $z = 8.12$, $p < .001$, as well as resource type and trial type, $b = 0.302$, $SE = .13$, $z = 2.27$, $p = .023$. This means that the effects of age and resource type differed across the four redistributions (see Figure 2). Thus, Hypothesis 3 was disconfirmed concerning the judgment measure. There was no difference in the relationship between age and judgments of necessary and luxury redistributions.

Control trial: Taking away from the rich. There were no significant effects of age and resource type on children's judgments (*p*s > .54), indicating that children's judgments in the taking away from the rich trial were unaffected by their age and the type of resource.

Control trial: Taking away from the poor. Regarding judgments ($R^2 = .07$, $p < .001$), only age emerged as significant predictor, $b = -0.038$, $SE = .01$, $z = -3.80$, $p_{adj} < .001$. As age

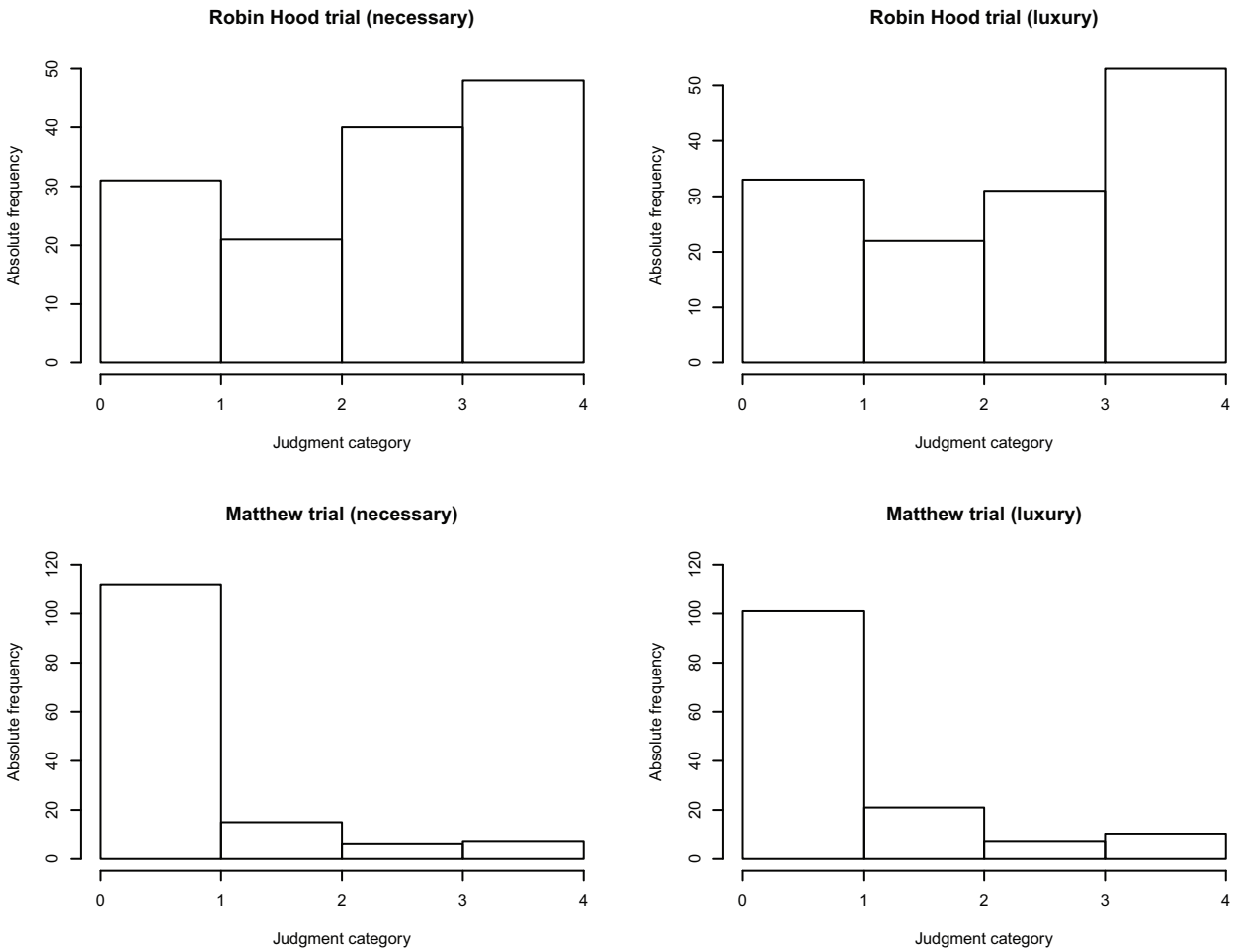

Figure 1. Histograms of absolute frequencies for the judgment measure of Robin Hood and Matthew trials by resource type. Likert scale for judgments ranged from 1 = *not OK at all*, 2 = *not quite OK*, 3 = *a little OK*, 4 = *completely OK*.

increased, children judged it as significantly less OK to take resources away from the poor. No effect of resource type on attributed judgment was found.

Robin Hood. Regarding judgments ($R^2 = .03$, $p = .025$), only age was a significant predictor, $b = 0.031$, $SE = .01$, $z = 2.68$, $p_{adj} = .029$, indicating that with increasing age, children judged the actions of the Robin Hood protagonist as more OK. Thus, Hypothesis 1 was confirmed concerning the judgment measure. Hypothesis 4 was not confirmed by the judgment measure as there were no differences in children's judgments of necessary and luxury resources.

Matthew. Only age ($R^2 = .09$, $p < .001$) emerged as a significant predictor, $b = -0.047$, $SE = .01$, $z = -4.28$, $p_{adj} < .001$, revealing that with age children judged the actions of the Matthew protagonist as significantly less OK.

Differentiation between four trial types at age 3. To further determine whether our youngest age groups, that is, 3-year-olds, differentiated between the four trial types in the judgment measure, we centered the age variable so that a value of 0 indicated exactly 3 years. Subsequently, we specified linear mixed models for each trial type of the judgment measure with resource type and age as predictors and resource type as a random effect nested within participants. The intercepts of these models indicated children's judgment at 3 years as predicted by the models. To test the hypothesis of differentiation between trial types and in order to assess whether 3-year-olds approve of redistributions furthering the previous disparity, we conducted a one-way analysis of variance on trial type (containing the four intercepts). Results revealed no significant effect of trial type, $F(3,556) = 1.7571$, $p = .15$, $\eta = .01$, suggesting that at age 3, children did not make any difference in their level of judgment concerning the four trial types. Thus, Hypothesis 5 was disconfirmed. Younger children did not judge redistributions

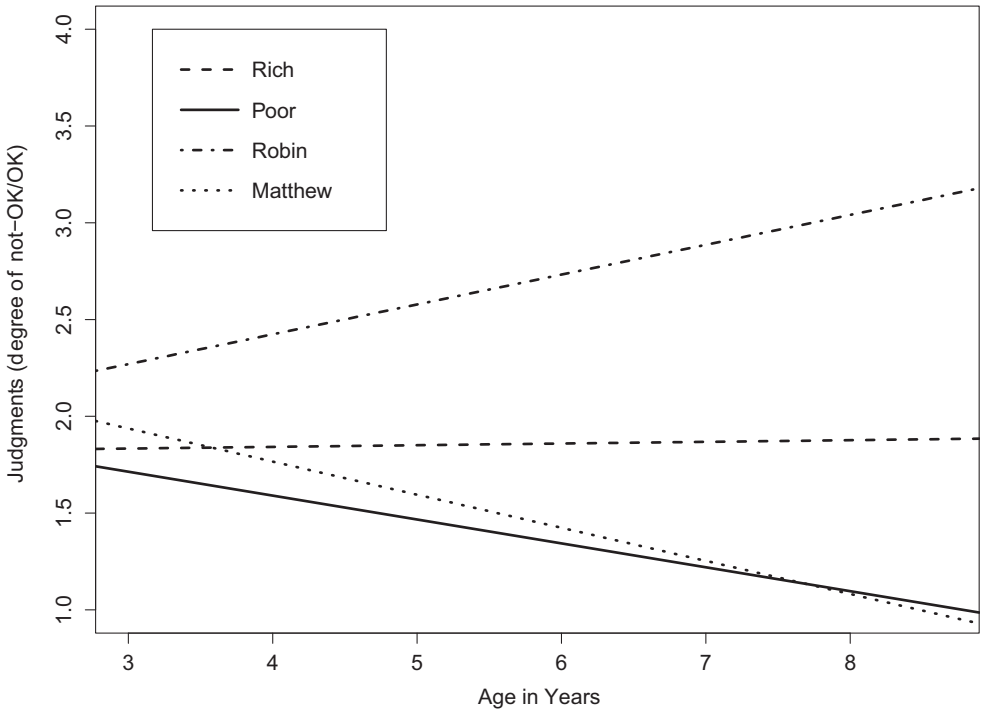

Figure 2. Regression lines regressing children's judgment (4-point Likert-type scale) of the four resource redistributions on children's age.

increasing the resource disparity more positively than other redistributions.

Attributed Judgments

Regarding the judgment attributed to the protagonist ($R^2 = .03$, $p < .001$), only a significant interaction between age and trial type was found, $b = 0.01$, $SE = .003$, $z = 2.54$, $p = .011$, indicating that the effect of age depended on the trial type.

Control trial: Taking away from the rich. No significant effects of age and resource type on children's attributed judgments emerged (ps > .24), indicating that children's attributed judgments in the taking away from the rich trial were not related to their age and the type of resource.

Control trial: Taking away from the poor. No effects of age or resource type on attributed judgments were found.

Robin Hood. With age, children attributed increasing OK judgments to the protagonist ($R^2 = .03$, $p = .015$), $b = 0.026$, $SE = .01$, $z = 2.75$, $p_{adj} = .024$. Therefore, Hypothesis 1 was confirmed. Hypothesis 4 was disconfirmed by the attributed judgments measure as there were no differences in children's attributed judgments between necessary and luxury resources.

Matthew. There was no effect of age and resource type on attributed judgments.

Attributed Emotions

Concerning the emotion attributed to the protagonist, no significant effects were found and thus this measure was dropped from the analyses of the four trial types.

Deserved Punishment

Regarding the punishment measure ($R^2 = .23$, $p < .001$), age emerged as significant predictor, $b = 0.062$, $SE = .01$, $z = 4.94$, $p < .001$, meaning that, with age, children thought the protagonist should generally get into more trouble. Moreover, there were three significant interaction effects, namely the interactions between age and resource type, $b = 0.017$, $SE = .01$, $z = 2.37$, $p = .018$; age and trial type, $b = -0.026$, $SE = .003$, $z = -7.39$, $p < .001$ (see Figure 3); and resource type and trial type, $b = -0.286$, $SE = .13$, $z = -2.22$, $p = .027$. Importantly, the interaction between age and resource type indicated—across all trial types—a stronger positive relationship between age and punishment in the case of necessary resources than of luxury.

Thus, Hypothesis 3 was confirmed by the deserved punishment measure.

Control trial: Taking away from the rich. There were no significant effects of age and resource type on children's judgments of deserved punishment (*p*s > .20). Thus, children's judgments of deserved punishment were not related to their age and the type of resource.

Control trial: Taking away from the poor. Regarding punishment (R^2 = .07, p < .001), age showed to be the only significant predictor, b = 0.036, SE = .01, z = 3.49, p_{adj} = .002, meaning that as age increased the deserved punishment for a protagonist taking resources from the poor increased as well.

Robin Hood. Only age (R^2 = .05, p = .001) emerged as significant predictor, b = −0.046, SE = .01, z = −3.70, p_{adj} < .001, indicating that with increasing age, children's judgments of the amount of deserved punishment for the protagonist decreased. Thus, Hypothesis 1 was confirmed in relation to the deserved punishment measure. However, Hypothesis 4 was disconfirmed as children did not differ in their judgment of deserved punishment between necessary and luxury resources.

Matthew. There was no effect of age and resource type on deserved punishment. Thus, Hypothesis 2 was partly confirmed. Older children judged the Robin Hood protagonist more positively and less deserving of punishment with age and did not judge the Matthew protagonist as more deserving of punishment with age. However, they also judged the Matthew protagonist more negatively with age.

Comparison between test (Robin Hood, Matthew) and control (rich, poor) trials for the judgment and deserved punishment measure. To compare whether the age effect differed between test and control trials, we conducted paired t-tests. Results showed that the age coefficient for the judgment of the Robin Hood trial (β = .031, SE = .011) was significantly larger than the age coefficient for the judgment of the rich trial (β = .006, SE = .008), $t(138)$ = 2.57, p = .011. Although going in the same direction, the age coefficient for the deserved punishment in the Robin Hood trial (β = −.048, SE = .014) was not significantly more negative than the age coefficient for the deserved punishment in the rich trial (β = −.023, SE = .014), $t(138)$ = 1.79, p = .076. There were no significant differences between the age effects in the Matthew and poor trials for the judgment and the deserved punishment measure, *p*s > .41.

Reasoning Analysis

To test the effects of age, resource type, and trial type on children's reasoning, we specified

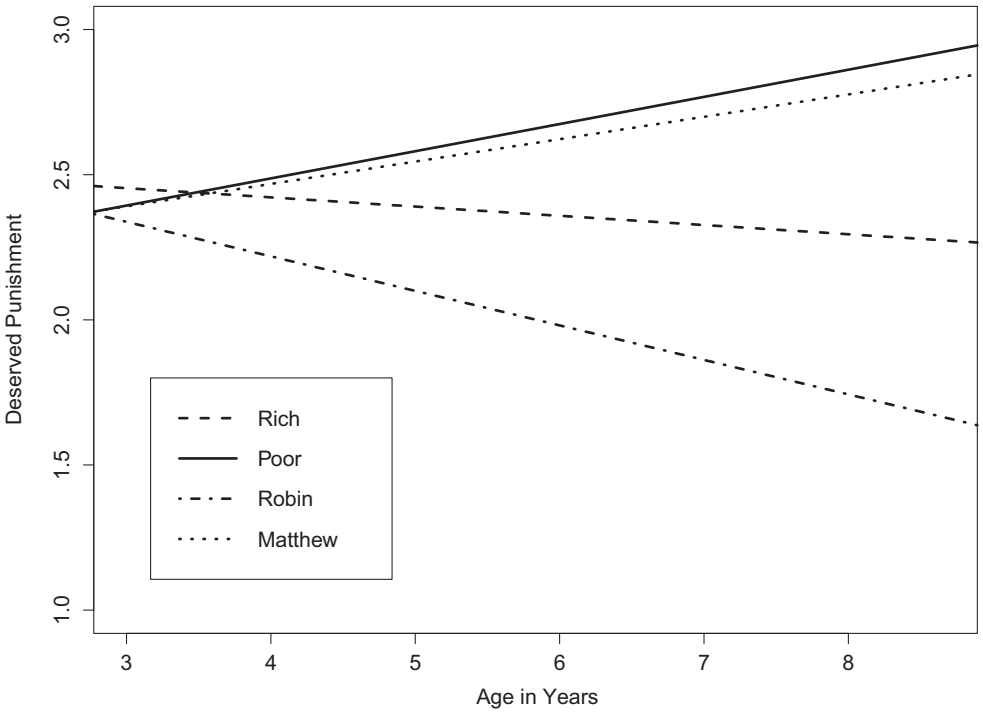

Figure 3. Regression lines regressing children's evaluations of deserved punishment (3-point scale) of the four resource redistributions on children's age.

cumulative link models for each reasoning category (normative, resource possessions, others' welfare). We specified age, resource type, and trial type as predictors, with resource type and trial type as random effects nested within participants. For the category "normative" ($R^2 = .02$, $p < .001$), only trial type emerged as significant predictor, $b = 0.260$, $SE = .07$, $z = 3.90$, $p < .001$. Follow-up, Bonferroni-corrected *t*-tests showed that children used the normative category significantly more often in the rich trial ($M = 0.55$, $SD = 0.46$), than in the poor ($M = 0.39$, $SD = 0.46$) or Robin Hood ($M = 0.36$, $SD = 0.45$) trial, and significantly more often in the poor or Robin Hood trial than in the Matthew trial ($M = 0.28$, $SD = 0.42$, all ps $< .03$, the only nonsignificant difference being between the poor and the Robin Hood trial).

For the category "resource possessions" ($R^2 = .03$, $p < .001$), trial type, $b = -0.238$, $SE = .07$, $z = -3.53$, $p < .001$, and age, $b = 0.033$, $SE = .01$, $z = 4.27$, $p < .001$, showed to be significant predictors. This indicated that, with age, children made increased use of the category "resource possessions." Bonferroni-corrected *t*-tests revealed that children reasoned significantly less about resource possessions in the rich trial ($M = 0.34$, $SD = 0.46$) than in the poor ($M = 0.53$, $SD = 0.49$), the Robin Hood ($M = 0.51$, $SD = 0.49$), and the Matthew ($M = 0.58$, $SD = 0.49$) trial (all ps $< .001$).

Hypothesis 3. For the category "others' welfare" ($R^2 = .03$, $p < .001$), age, $b = 0.027$, $SE = .01$, $z = 3.29$, $p < .001$, and resource type, $b = 0.561$, $SE = .15$, $z = 3.67$, $p < .001$, emerged as significant predictors. Thus, with age, children reasoned more about others' welfare in the case of necessary ($M = 0.35$, $SD = 0.45$) than luxury ($M = 0.26$, $SD = 0.41$) resources. This provides support for Hypothesis 3 regarding the reasoning measure in showing that necessary resources are associated with others' welfare to a greater extent than luxury resources in children's reasoning.

Exploratory Reasoning Analyses

Reasoning by Trial Type

To analyze the effects of age, resource type, and judgments on the three reasoning categories in more detail, we specified cumulative link models for each trial type with age, resource type, and judgment as predictors as well as resource type as a random effect nested within participants. All *p*-values from the analyses of the separate trial types were Bonferroni-corrected.

Rich trial. Concerning the normative reasoning in the rich trial ($R^2 = .16$, $p < .001$), judgment emerged as significant predictor, $b = -1.248$, $SE = .24$, $z = -5.24$, $p_{adj} < .001$. Thus, the more positively children judged taking away resources from the rich character, the less normative reasoning they used to justify their judgment. Regarding the reasoning about resource possessions in the rich trial ($R^2 = .25$, $p < .001$), age, $b = 0.035$, $SE = .01$, $z = 3.79$, $p_{adj} < .001$, and judgment, $b = 1.173$, $SE = .19$, $z = 6.17$, $p_{adj} < .001$, showed to be significant predictors. The older the children were and the more positively they judged the rich trial, the more they reasoned about the resources possessed by the characters. No significant effects of the three predictors were found in the poor trial.

Robin Hood. Concerning the normative reasoning in the Robin Hood trial ($R^2 = .19$, $p < .001$), age, $b = 0.030$, $SE = .01$, $z = 2.79$, $p_{adj} = .021$, and judgment, $b = -1.167$, $SE = .20$, $z = -5.99$, $p_{adj} < .001$, emerged as significant predictors. Thus, with increasing age, children reasoned more about normativity and the more positively children judged Robin Hood redistributions, the less they reasoned about normativity. Regarding the reasoning about resource possessions ($R^2 = .23$, $p < .001$), judgment was the only significant predictor, $b = 1.405$, $SE = .25$, $z = 5.56$, $p_{adj} < .001$. The more children judged Robin Hood redistributions as OK, the more they reasoned about the resource possessions of the characters. Concerning children's reasoning about others' welfare ($R^2 = .11$, $p < .001$), age, $b = 0.028$, $SE = .01$, $z = 3.20$, $p_{adj} = .006$, resource type, $b = 0.825$, $SE = .29$, $z = 2.82$, $p_{adj} = .020$, and judgment, $b = 0.362$, $SE = .14$, $z = 2.55$, $p_{adj} = .043$, all emerged as significant predictors. Thus, with age, children reasoned more about the welfare of the characters and also reasoned more about welfare in the case of necessary ($M = 0.39$, $SD = 0.47$) than of luxury ($M = 0.23$, $SD = 0.40$) resources. In addition, the more positively children evaluated Robin Hood redistributions, the more they reasoned about others' welfare.

Matthew. Regarding children's reasoning about resource possessions ($R^2 = .11$, $p < .001$) and others' welfare ($R^2 = .04$, $p = .016$) in the Matthew trial, the age emerged as only significant predictor, $b = 0.041$, $SE = .01$, $z = 3.57$, $p_{adj} = .001$ (resource possessions) and $b = 0.029$, $SE = .01$, $z = 2.73$, $p_{adj} = .025$ (welfare). Thus, with increasing age, children reasoned more about the characters' resource possessions and their welfare. No further effects of age, resource type, and judgment were found in the four trial types.

Exploratory Mediation Analysis

In order to test whether the positive relationship between age and the judgment as well as the punishment measure in the Robin Hood trial was mediated by children's reasoning about others' welfare, we conducted exploratory mediation analyses for both types of resources. Results for necessary resources indicated that after including reasoning about others' welfare as a mediator, the direct effect of age on children's judgments of Robin Hood redistributions was not significant anymore, $c = .00737$, $p = .196$, whereas the mediated effect of age through reasoning was significant, $ab = .00422$, $p = .002$, mediating a significant proportion of the total effect, that is 36%, $p = .032$. The same mediation pattern was found for the punishment measure of necessary resources ($c = -.00537$, $p = .128$; $ab = -.00250$, $p = .014$; proportion mediated = 32%, $p = .040$). Interestingly, there were no significant mediation effects for the judgment ($ab = .001124$, $p = .254$) and the punishment ($ab = -.000415$, $p = .430$) measure in the case of luxury resources.

Discussion

This study investigated how 3- to 8-year-old children evaluate Robin Hood (taking from a rich character to give to a poor character) and Matthew (taking from a poor character to give to a rich character) redistributions of necessary and luxury resources in the context of an existing inequality. To this end, children viewed protagonists perform Robin Hood and Matthew alterations of resources and subsequently judged the protagonist's action, provided a justification for their judgment, attributed judgment and emotions, and evaluated the deserved punishment. Results showed that with age, children increasingly approved of the Robin Hood redistribution and increasingly disapproved of the Matthew redistribution. In addition, children reasoned about others' welfare in the Robin Hood scenario, but more so in the case of necessary than of luxury resources. For necessary resources, reasoning about others' welfare mediated the relationship between age and judgment as well as deserved punishment regarding Robin Hood redistributions. These findings demonstrate developmental changes in how children resolve normative conflicts between ownership and fairness norms, and highlight the role of considerations of others' welfare in children's moral development.

The unequal distribution of social goods like income or wealth represents a crucial societal issue, leading to the differentiation between wealthy and poor individuals. More often than not, this disparity in resource possessions has devastating effects on the well-being of the disadvantaged individuals. How should one respond to this universal characteristic of human societies? Which responses are (normatively) justified? Following our results, children, with age, seem to become increasingly differentiated in their evaluations of different strategies to modify resource inequalities. Especially older children evidence a clear stance on the permissibility of different alterations of resource possessions. That is, they evaluate actions that mitigate resource disparities as positive and actions that aggravate disparities as negative, even if that means violating ownership norms. This suggests that in older children, fairness trumps ownership considerations. It reveals children's increasing sensitivity of issues of economic inequality and the need to address them. The inequalities in this study were of structural origin, that is, unrelated to the individuals' merit, effort, or other factors. This relates well to findings showing that if children rectify inequalities, they are more likely to rectify inequalities of structural than of individual origins (Rizzo et al., 2020). Future research could examine different causes for structural inequalities as a potential mediator of children's judgments of resource redistributions. From a theoretical point of view, our results speak to accounts proposing children's increasing ability to coordinate different and potentially conflicting normative demands and entitlements (e.g., Piaget, 1932; Rutland & Killen, 2017; Turiel, 2008), particularly in contexts in which others' well-being is at stake (Dahl et al., 2018). Taken together, this study is the first to show developmental changes in children's responses to actions of redistributive justice aimed at modifying resource inequalities. Most importantly, it reveals how children resolve normative conflict between ownership and fairness considerations in their moral responses.

Notably, in this study, we bring together redistributive justice considerations targeting resource inequalities and assess under which conditions children evaluate them as permissible, fair actions. Recent studies have investigated children's (normative) responses (e.g., welfare, equity, equality considerations) to social inequalities by means of resource allocation scenarios, resource allocation expectations, or emotional reactions to exclusions of advantaged or disadvantaged children (e.g., Dys et al., 2019; Elenbaas & Killen, 2016a, 2016b; Rizzo

& Killen, 2016; Rizzo et al., 2020). Another line of research has focused on first- and third-party restorative justice in children by resource alterations mostly unrelated to fairness considerations (Riedl et al., 2015). So far, no study has addressed how redistributive justice considerations relate to inequalities, which have not come into existence by taking away resources or violating property rights. This study combines both lines of research and extends them by showing that retributive justice can be conceptualized as an approach to address resource disparities. That is, our results suggest that even when children do not have resources at their own disposal to either share or allocate, they begin to apply considerations of fairness and redistributive justice to economic inequalities. Thus, the study shifts the focus from normative considerations on how to perpetuate or rectify an existing inequality through own possessions (e.g., windfall resources) to normative considerations on whether the existing inequality should be questioned or even altered. While this study shows that Robin Hood redistributions are acceptable to older children, it leaves open the question whether and under which circumstances they might be seen as a moral obligation. Children reasoned about normativity, the resource possessions, and others' welfare to rather similar extents in the case of Robin Hood. Assessing whether and how children moralize the redistribution of resources to achieve equity seems to be a possibility to consider in future research.

Is it children's ability to coordinate moral concerns in general that undergoes developmental changes or are children's priorities shifting with age? From a theoretical perspective, both explanations are conceivable. On the one hand, children's developing cognitive abilities (e.g., working memory, language, perspective taking) might lead to a greater capacity to represent, integrate, and thus coordinate different and conflicting moral considerations (Piaget, 1932). On the other hand, children's preferences and priorities regarding different moral norms might change over development in a way that some norms become more important while the weight of other norms remains the same or decreases. There are reasons to assume that both perspectives are relevant. On the one hand, studies demonstrated that across early and middle childhood, children increasingly consider others' needs in their resource allocation decisions (e.g., Malti et al., 2016; Wörle & Paulus, 2018) suggesting a change in priorities. On the other hand, our data also hint to an increase in children's ability to flexibly coordinate norms. Here, it is interesting to note that the 3-year-old children who have been found to endorse a norm of equality (Cooley & Killen, 2015; Olson & Spelke, 2008) did not differentiate between conditions even though taking from the rich would have created a more equal distribution. Moreover, with age children increasingly differentiated between necessary and luxury resources across all trial types. Thus, we assume that both processes—an increasing focus on others' welfare and an increase in the ability to coordinate conflicting moral considerations—contribute to the developmental changes observed in our study.

In addition, this study lends support to theoretical accounts stressing that while younger children primarily rely on a single norm in their moral decisions, older children integrate different and possibly conflicting norms, and engage in more coordinated moral decisions (Dahl & Killen, 2018; Helwig & Jasiobedzka, 2001; Smetana, 2013; Turiel, 2008; Wörle & Paulus, 2018). The fact that children considered multiple and conflicting concerns is well highlighted by the fact that all three reasoning categories were used to a notable extent in all redistributions. Our results suggest that there might be different normative trajectories of ownership and welfare norms, with ownership norms as the starting point and welfare norms becoming more relevant and increasingly coordinated with ownership norms as children grow older. That is, children's "normative glasses" become more nuanced with age. More specifically, younger children seem to almost exclusively focus on the violation of ownership norms when evaluating the various redistributions. This explains their tendency to evaluate redistributions overall negatively. Consistently, previous research has demonstrated the early presence of strong ownership norms in younger preschoolers (e.g., Nancekivell et al., 2013; Neary & Friedman, 2014; Riedl et al., 2015; Rossano et al., 2011; Vaish et al., 2011). However, as ownership norms are already well established in the early preschool age, they might not undergo major developmental changes in the years thereafter. This explains our finding that children across ages judge taking resources away from the rich negatively, as this redistribution does not involve welfare, but only ownership norms. In contrast, welfare and equity likely become more prominent as children's sense of justice and fairness develops (equality-equity shift) and as their understanding of how resource possessions affect well-being expands. This weighting of different norms depending on context speaks against stage-wise theories of moral development (e.g., Kohlberg, 1971) and the idea that children

merely internalize adult norms. Thus, this study points to a differentiated interaction of ownership as well as welfare and equity norms across development.

Our results suggest that ownership norms and welfare norms could follow different developmental trajectories across early childhood. This is theoretically relevant as it would show that there might be asynchronies in the development of different moral entitlements within the moral domain. Specifically, our findings point to the predominance of ownership norms over welfare norms early in the preschool years. How could this be explained? Previous studies have found ownership conflicts to be very prominent (e.g., Hay & Ross, 1982) and welfare conflicts less prominent between 1 and 3 years of life (Dahl, 2016). Thus, from a social interactionist perspective (Carpendale, Hammond, & Atwood, 2013; Paulus, in press), one might argue that young preschoolers have more experience with conflicts involving object possessions and thus are more advanced in their development of ownership norms. A second explanation aims at the differential complexity of ownership and welfare conflicts. Conflicts relating to object possessions always involve the object itself and the conflicting claims regarding its possession. Thus, ownership conflicts could be conceptualized as based on visual entities and thus requiring less cognitive resources in terms of internal representations. In contrast, welfare conflicts require children to interpret an involved party's compromised welfare through a number of cues such as emotional, verbal, and physiological signals. Thus, welfare conflicts might be cognitively more demanding in terms of internal representations as they require children to understand someone else's state of well-being instead of just the conflicting claims about relations between agents and objects. Third, ownership centers around conflicts involving the taking away of objects. As a consequence, the focus of ownership norms is largely on the (prohibition of) antisocial acts. In contrast, welfare norms focus on positive duties, that is, benefitting someone who is in need. Previous studies have suggested that norms pertaining to what one should not do (negative duties) might develop earlier than norms pertaining to what one ought to do (e.g., positive duties; Paulus, Wörle, & Christner, 2020). These interpretations would relate well to our findings indicating that welfare norms undergo greater development over the preschool years than ownership norms. However, our explanations are speculative in nature. Future research should examine these divergent trajectories of moral norms in more detail.

From a theoretical perspective, others' welfare represents a pivotal factor in considerations of redistributive justice in the context of existing inequalities. It might be the compromised and endangered welfare of the disadvantaged individuals that makes fairness considerations so pressing in contexts of economic inequalities. But is it really concerns for others' welfare that children rely on when judging the fairness of redistributions, especially in the case of necessary resources? In this study, children, with age, assigned more deserved punishment for redistributions of necessary resources than of luxury resources in general. In addition, children, with age, reasoned more about others' welfare only in Robin Hood redistributions and reasoned more about others' welfare in the case of necessary than luxury resources only in Robin Hood redistributions. This suggests that Robin Hood redistributions were indeed viewed more positively with age because they positively affected the well-being of the poor recipient, especially in the case of necessary resources. The results from our mediation analysis put forward this hypothesis. Others' welfare seems to be the deciding factor that mediates the effect of age on children's evaluations, but only in the case of necessary resources. In other words, children, with age, increasingly reason about others' welfare, which could explain why older children approve of Robin Hood redistributions to a greater extent. However, one should note that the mediation analysis was an exploratory analysis. Consequently, it generates a hypothesis that needs to be substantiated in future research. In addition, children demonstrate an understanding of the differential effects of different resource types that becomes more coherent as they grow older. One explanation for this developmental change might be children's growing daily experiences of economic inequalities and their broadening understanding of what causes severe impairments of individuals' well-being (Slaughter & Lyons, 2003), that is, the absence of necessary resources such as food or water. Taken together, others' welfare and more specifically different types of resources likely contribute to children's positive evaluations of Robin Hood redistributions.

Interestingly, younger children did not adjust their responses to different redistributions. Rather, 3-year-old children showed an overall pattern that ownership violation is negative. Thus, younger children seem to focus on the most salient aspect of the redistributions, that is, the taking away of

resources, and use this action as their evaluative anchor. This suggests that at this young age, children's considerations of fairness and justice likely rely on single norms that are applied generally and irrespective of contextual information. This finding relates to recent studies that demonstrated that young preschool children enforce a norm of equal sharing of windfall resources in the context of inequality (Wörle & Paulus, 2018) and do not rectify unequal resource distributions themselves (Chai & He, 2017; Schmidt et al., 2016). In the course of development, children become able to coordinate different perspectives and entitlements (Piaget, 1932; Smetana, 2013). Importantly, in contrast to young preschool children's own resource allocation strategies (Essler et al., 2020; Rizzo & Killen, 2016), we found no evidence for a Matthew effect. That is, our results speak against theoretical views that young children approve of redistributions furthering the previous disparity.

The significant differences between the Robin Hood and the taking away from the rich trials suggest that children clearly take note of the recipient benefitting from the redistributions. Thus, we can rule out the possibility that the evaluation of the Robin Hood trial was simply due to children's response to the taking away of resources. Rather, children considered the recipients' welfare, which was only positively affected in the Robin Hood trial but not in the case of the protagonist keeping resources for himself.

As equality has been shown to be a major concern in especially young children's moral considerations (e.g., Huppert et al., 2019), could it not be have been a factor in this study, as the Robin Hood and the taking away from the rich trial make the final distribution slightly more equal? This seems to be unlikely for at least two reasons. First, the significant differences between necessary and luxury resources indicate that the concern for others' welfare was an important factor in the Robin Hood condition. Had children mostly relied on equality, then there should not have been a difference for different resource types. Second, if especially younger children had mainly relied on a concern for equality in their responses, they should have favored the redistributions increasing equality over the redistributions that do not (Matthew, taking from the poor). As there is no significant difference between 3-year-olds' responses to the four redistributions, a focus on equality is unlikely. Overall, equality does not seem to have been a major concern for children's responses in this study.

Limitations and Conclusion

This study provided evidence on how children consider ownership and fairness concerns in the context of existing inequalities. However, it relied on a cross-sectional design, so longitudinal studies are warranted to substantiate the developmental changes suggested by our data. Moreover, we did not include information on the merit of the characters, which would be an important factor to consider in future research. That is, would Robin Hood redistributions also be justified in the case of a lazy poor character and a hard-working rich character? The fact that we did not explicitly collect SES data from our participants constitutes a limitation of this study as perceived and actual SES might have impacted children's judgments and reasoning (e.g., Ball, Smetana, Sturge-Apple, Suor, & Skibo, 2017; Elenbaas, 2019). Future research should examine the role children's SES plays in their evaluations of moral conflicts between ownership and fairness norms. Furthermore, children's increasing social experiences (Carpendale et al., 2013) and theory of mind understanding (Caputi, Lecce, Pagnin, & Banerjee, 2012) might constitute important factors contributing to children's appreciation of others' well-being and could be investigated in future research. Additionally, future research should examine different kinds of redistributions (e.g., requesting resources, offering resources, taxation) to help us gain a more coherent picture of children's responses to different strategies aiming at reducing resource inequalities. Moreover, future work could focus on assessing discrete attributed emotions (e.g., happy, guilty, sad) instead of a positive–negative scale. This would give us a more nuanced insight into which emotions children think the protagonists experienced after acting in a moral dilemma. Lastly, one limitation of our study design consists in the inclusion of character SES in addition to character resource possession (necessary and luxury resources). That is, the co-occurrence of SES and necessary as well as luxury resources does not allow for isolating the effect of resource type (necessary vs. luxury) in our study. In other words, SES constitutes an additional variable that could have impacted the results besides the effect of resource type. Specifically, children between 3 and 8 years of age have been shown to hold (negative) stereotypes about the wealthy (e.g., Ahl & Dunham, 2019). Thus, children's judgment of the Robin Hood protagonist could not only have been influenced by their growing concern for others' welfare (especially in the case of necessary resources) or fairness

norms, but also by their negative evaluation of the rich character per se. We have to leave it to future research to disentangle the effects of these variables.

In conclusion, this study offers valuable insights into developmental changes in children's evaluations of redistributive justice as a response to an existing inequality. Especially when the redistribution of necessary as opposed to luxury resources ameliorates the well-being of a poor recipient (Robin Hood), children, with age, evaluate the redistribution more positively. This indicates that addressing social and economic inequalities often requires the simultaneous consideration and weighing of different normative views. Our findings show that children understand that strategies increasing the gap between poor and rich individuals are largely inadequate ways to deal with inequalities. Most importantly, we found that Robin Hood redistributions as solutions to social and economic inequalities seem to find considerable resonance even amongst preschool children.

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