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REVIEW PAPER

Children's Developing Understanding of Merit in a Distributive Justice Context

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Abstract

Objectives Distributive justice is an important component of morality given that it directly reflects how individuals reason regarding fairness and others' welfare. Thus far, substantial research has attempted to understand how children make distribution decisions in resource allocation contexts, particularly when merit is salient (e.g., one deserves more resources than another). Despite the rich findings in this area, no systematic literature review has yielded a comprehensive discussion of children's understanding of merit in fairness decisions.

Method A systematic review of the pertinent literature was undertaken.

Results This article thoroughly synthesizes findings regarding merit-based distributive justice by revealing the roles of culture, resource type, and situation complexity, as well as children's use of underlying reasoning in their distributive decisions.

Conclusion The article discusses the findings and directions for future research.

Keywords Distributive justice · Morality · Merit · Fairness decisions

From everyday interactions, children reflect, abstract, and evaluate social exchanges and events that contribute to their general understanding of how individuals ought to act towards others (Smetana et al. 2014). These obligatory expectations about inter-individual treatment make up an essential component of morality (Killen and Rutland 2011). In particular, one central moral issue that concerns the treatment of others is *distributive justice*, which includes how and whether to fairly distribute resources (Smith and Warneken 2016; Vaish et al. 2009).

Allocation of resources is a critical concern not only for individuals but for the society we live in as this relates to the issue of fairness. Thus far, researchers from different disciplines including psychology, philosophy, and economics have strived to find answers on what is considered fair in the context of distributive justice (Fehr et al. 2008; Paulus and Moore 2015). For instance, whether or not to rectify societal inequalities has consistently been a controversial topic, along with the extent to which such inequality should be rectified (Damon 1977; Rizzo and Killen 2016; Turiel 1983). In this context, many questions persist, such as: "How is merit – an individual's work contribution – incorporated into the distributive framework?" and "How does societal policy and procedure support the value of merit to ensure fairness for everyone?" These questions are imperative given that the consequences of what society defines "distributive justice" fundamentally affect people's lives through the social system and structure.

In a developmental perspective, how children reason about fairness from a young age needs to be addressed in depth. In particular, whether children believe that hard-working person deserves more than others and how this changes overtime is one of the central areas to be examined in research on distributive justice. Overall, prior studies on children's fairness decisions have shown that children take *merit* into account when making distributive judgments, meaning that they divide resources based on the work contributions (Baumard et al. 2012; Schmidt et al. 2016). However, comprehensive investigations on this area of research have revealed that the category of merit is complex and can include diverse aspects of deservingness, such as *effort* and *productivity*, which may influence children's conceptions of fairness differently (Carson and Banuazizi

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2008; Kienbaum & Wilkening 2009). Further, children's understanding of merit may vary depending on multiple factors, such as one's own age, situations, and cultures (see Schäfer et al. 2015). Thereby, an in-depth examination is warranted to fully explore how children come to understand merit in their fairness thinking.

Despite the importance of children's merit-based distributions in moral development research, no review has fully synthesized prior related research in this area. Thus, the current review provides a systematic investigation of previous studies on children's understanding of merit along and suggests several directions for future research. The following five sections discuss: (1) developmental trajectory in children's understanding of merit; (2) meritorious decisions in morally complex situations; (3) meritorious decisions by resource type; (4) children's underlying reasoning in their distributive decisions; and (5) children's understanding of merit across cultures. The final section gives rise to two major directions for further study: the need to distinguish effort from outcome in conceptualizing merit, and the role of parental input on children's merit-based distributive justice decisions.

Developmental Trajectory in Children's Understanding of Merit

Much research work has paid attention to whether individuals develop sensitivity to *merit* as early as infancy. In fact, a number of studies have focused on 15- to 20-month-olds to answer the question of whether sense of fairness start to emerge early in life (Geraci and Surian 2011; Schmidt and Sommerville 2011; Sloane et al. 2012; Sommerville et al. 2013). For instance, a study by Surian and Franchin (2017) revealed that 20-month-olds looked longer when an experimenter distributed rewards equally to recipients whose deservingness varied (e.g., one was a helper and another was a hinderer) than when rewards were distributed equally to equally-deserving recipients, which implies that infants may perceive the two allocation situations differently. Another study by Sloane et al. (2012) particularly focused on infants' sensitivity to deservingness based on *work contribution* in their allocation expectations. Here, 21-month-olds were introduced to two scenarios: (1) Both individuals completed an assigned chore (e.g., put toys away); (2) Only one individual completed an assigned chore while the other continued to play with toys. When equal stickers were distributed to the two individuals in both scenarios, infants looked significantly longer at the second scenario in which different levels of work contribution were displayed than the first scenario of equal work contributions. Notably, findings remained the same whether or not the reward was mentioned before the chore was carried out ("if you put the toys away, you'll have a sticker"), implying that whether or not there was an explicit verbal contract in advance did not influence infants' differentiations of the two situations.

While these findings suggest that fairness thinking becomes functional early in ontogeny, further debates on infant research persist. Dahl (2014) has pointed out that findings based on infants' visual preference paradigm need to be interpreted with caution, especially when exploring the area of *morality*. Morality is defined as prescriptive norms concerning others' welfare, rights, fairness, and justice; thereby, one's moral judgments should reflect these criteria (Killen and Rutland 2011; Turiel 2015; Dahl and Killen 2018). However, ample evidence shows that infants do not yet have the capability to make judgments based on these moral criteria as infant data only document one's *preference* rather than one's evaluations of an act (Dahl and Freda 2017; Dahl and Kim 2014; Josephs and Rakoczy 2016; Nucci and Weber 1995). Further, the visual preference paradigm only shows infants' relative – but not absolute – decisions by implementing comparison between two or more agents (or situations), thereby failing to address whether infants prefer the agent as it is or they prefer it relative to the alternative (Dahl 2014; Dahl and Killen 2018). A great deal of prior literature on morality has asserted that moral judgments come from deciding whether an act is right or wrong by evaluating the act itself and not by comparing the act to an alternative, and such ability for moral judgment arises by the third or fourth year of life (Schmidt et al. 2012; Smetana and Braeges 1990). Thus, it is noteworthy that data from infants' visual preference paradigm does not directly reflect one's conception of fairness as shown in older children.

In contrast, studies involving young children from as early as age three have employed resource allocation contexts, in which children actively make decisions about allocating a number of resources. Ample evidence reveals that, despite young children's preference for egalitarianism (i.e., equal allocation) and self-interest (i.e., selfish allocation towards themselves), there is a clear sign of children's sensitivity to merit when they make fair distributive judgments (Hamann et al. 2014; Warneken et al. 2011).

For instance, a study by Kanngiesser and Warneken (2012) used a first-party context where the participants worked together with a puppet-partner to collect coins, and later were asked to divide the rewards between the two. In distributing rewards, 3-year-olds evidently took merit into account: children allocated fewer stickers to themselves when they contributed less than the puppet as compared to when they contributed more. Although children's allocation decisions reflected their self-interest, under which the children kept more than half of the stickers when they worked harder but chose to distribute rather equally when the

puppet worked harder, it remains noteworthy that the ability to consider merit was evident even at this young age. Such findings show that young children display the capability to make resource allocation decisions based on merit that incorporates *relative work* contribution, as demonstrated by the comparison of their own work to that of others.

Further, young children's ability to consider merit in their distributive justice decisions extended to a third-party context (Baumard et al. 2012; Kenward and Dahl 2011). In a recent study by Baumard et al. (2012), 3-year-olds were told about two protagonists, one of whom worked hard to bake cookies and the other of whom was lazy. When distributing three cookies as rewards, children preferred equal distribution, not giving the third cookie to anyone, indicating young children's limited ability to incorporate merit in their distributive decisions. However, children's meritorious decisions were revealed when prompted with a forced-choice question: when children were asked, "How would you give out one big cookie and one small cookie?", children gave the bigger cookie to the harder working protagonist, reflecting their sensitivity to merit. Findings highlight that children as young as age three possess the ability to acknowledge an individual's contribution in fairness decisions, but that this ability is concealed by their preference for egalitarianism.

Importantly, young children's use of merit was particularly salient when children engaged in *collaborations* with others, as revealed in multiple studies (Blake, McAuliffe and Warneken 2014; Hamann et al. 2014; Warneken et al. 2011). While meritocratic sharing (i.e., sharing rewards by taking merit into account) was found with 3- to 4-year-olds in a collaboration task, a similar sharing pattern was not found for a parallel work setup where there was no collaborative task (Hamann et al. 2014), or for a neutral windfall situation where children were merely given some resources instead of earning them. These findings imply that collaborative work facilitated children's attention to principles of fairness, particularly concerning one's own work contribution (Brownell and Carriger 1990).

Multiple studies delineated above reveal that during the preschool to early-school ages, children increasingly incorporate sophisticated fairness thinking in their consideration of merit (Kienbaum and Wilkening 2009; Rizzo et al. 2016; Schmidt et al. 2016). The section below discusses older children's sense of merit-based distributive justice by exploring contexts such as when other factors are embedded in merit, and when resource type varies.

Meritorious Decisions in Morally Complex Situations

As children get older, not only do they increasingly acknowledge merit in simple contexts, but children also develop the ability to integrate merit in *complex* situations. In particular, a number of studies have pointed out that from late childhood, children's considerations of merit are salient even when other moral principles (e.g., need) are embedded in merit.

For instance, a study by Kienbaum and Wilkening (2009) highlighted a significant developmental trend in children's increasing emphasis of merit over other factors. Here, children and adolescents of 6-, 9-, and 15-year-olds were introduced to recipients who varied in their effort in cleaning a schoolyard (e.g., collected small, medium, and large amounts of garbage) and their need for resources (e.g., having more, less, or the same amount of candy as compared to others). For different dyads encompassing varying levels of effort and need, children distributed candies in a way they thought was the fairest. Interestingly, the principles the children most valued at each developmental stage varied: 6-year-olds focused on recipient *need* and disregarded merit, but 9- and 15-year-olds integrated both *merit* and *need* in their allocation judgments, with this pattern becoming more noticeable with age. For example, adolescents judged that a high-effort person deserved greater reward than a low-effort person even though both had low need, whereas younger children did not distinguish between the two. These findings suggested that children start to put strong emphasis on merit from middle to late childhood even when there are other salient moral factors (e.g., need) that can potentially obfuscate their distributive decisions.

Similarly, Sigelman and Waitzman (1991) illuminated the developmental trajectories in a more complex situation where two other factors – need and age – varied and further contrasted to merit. This study departed from previous research in that it also manipulated the situations in which children made allocation decisions (e.g., voting or charity). Here, 5-, 9-, and 13-year-olds were presented with three characters: a productive person who made more artwork than the others ("merit"), a poor person who needed more in general than the others ("need"), and a person who was older than the others ("age"). Then, children were asked to allocate nine ballots in two distinct situational contexts: voting and charity. In the voting scenario, recipients had the privilege of voting for their favorite game per ballot they received; in the charity scenario, recipients earned money to buy things they needed per ballot they received. The findings revealed that unlike 5-year-olds, both 9- and 13-year-olds incorporated a legitimate set of principles and considered *merit* and *need* into their judgments (but disregarded *age*). Further, 9- and 13-year-olds, but not 5-year-olds, had the ability to tailor their distributive decisions to the situational context: children allocated more resources to the *meritorious* recipient in a "voting" context, while they allocated more resources to the *needy* recipient in the

"charity" context, while their younger counterparts preferred equal allocations across different situations.

In summary, prior studies have highlighted the developmental trend that it is not until early school age (e.g., 7 to 8 years and older) that children start to display flexibility in their distributive justice decisions. For kindergarteners, it is rather difficult to weigh different types of moral principles (e.g., merit, need) or to modify their thinking based on different circumstances (e.g., situational context). By contrast, as children enter middle to late childhood, they adopt a contextual perspective in their thinking of distributive justice and thus demonstrate the ability to consider which situational contexts most require meritorious distributive decisions.

Meritorious Decisions by Resource Type

Although research on children's sense of distributive justice is a thriving field, strikingly little attention has been paid to the *type* of resource allocated. Most previous studies have employed simple toy-like resources, such as stickers, candies, and small toys as the resources to allocate. This leaves us with a question concerning whether children's incorporation of merit would be extended when the types of resources are varied. That is, what if the resources to allocate are essential for everyone's welfare, such as water, unlike toys that are fun to have but not essential for living? Would the resource type change how children incorporate merit into their distributive decisions? These questions remain unanswered as most previous research heavily focused on using toy-like resources.

However, one exception was a recent study by Rizzo and Killen (2016) that illuminated how children's allocation decisions in the same situation can change depending on what resources are used, thereby revealing the role of resource type in children's merit-based distributions. In this study, children were introduced to two contrasting types of resources: (1) luxury resources (e.g., enjoyable goods, such as stickers) and (2) necessary resources (e.g., essential goods, such as medicine). In this study, two groups of children (3- to 5-year-olds and 6- to 8-year-olds) allocated resources to two characters whose *merit* varied (e.g., a character who applied great work contribution vs. a character who applied no work contribution). Here, a developmental pattern emerged regarding resource type. For luxury resources, children increasingly made merit-based allocations with age, such that older children allocated more resources to the character with greater work contribution compared to the younger children. Interestingly, however, the opposite pattern was found for necessary resources: older children allocated resources more *equally* in comparison to the younger children. Such findings reveal that 6- to 8-year-olds show the ability to consider that merit should receive less consideration when allocating necessary resources in order to maximize everyone's welfare, as opposed to their younger counterparts, 3- to 5-year-olds. This study emphasizes the notion that children's increasing consideration of merit with age may not be universal across contexts but can vary depending on the nature of resources allocated, and that a developmental trajectory is revealed within this context. Given the scarce research in this area, more research on the different types of resources and children's meritorious distributive decisions are warranted.

Children's Underlying Reasoning in their Distributive Decisions

As discussed in the earlier sections, children's meritocratic fairness norms become more evident in their thinking as children progress from early to late childhood (Almås et al. 2010; Damon 1977; Rizzo and Killen 2016). Along with examining children's fairness judgments, it is critical to document children's underlying *reasoning* in their judgments and further explore how children differently justify their fairness decisions with age (Damon 1977; Piaget 1932; Turiel 1983).

Piaget's (1932) foundational research set the stage for the research on the origins of morality in childhood. Based on his observations of and interviews with children covering a diverse range of moral dilemmas including division of resources, Piaget postulated that children go through a dramatic developmental trajectory. In particular, he asserted that young children justify moral issues primarily based on authority mandates, such as directions from parents, rules, and laws (e.g., "my mom says giving equally is fair and therefore equality is fair in all contexts"); however, with age, children come to a better understanding about fairness based on their own moral principles ("I think it is fair that a hardworking person deserves more than others") and not on authority mandates or other external sources.

Similar to Piaget (1932), Damon (1977) theorized that children progress through six developmental levels in their underlying reasonings of distributive judgment. Through interviews with children from age 4 to 10, he posed dilemmas in which limited resources had to be allocated to document children's conceptions on fairness. Within this approach, he revealed that in the primitive two levels (approximately age 4), children make allocation decisions based on self-interest (e.g., "I should have more because I want it more") or on external factors such as sex and race ("We should get more because we are boys"), demonstrating the assertion of choice rather than reasoning based on moral concerns. Then, children in the third level (approximately age 5) develop a notion of

equality and start to reason fairness strictly based on equal treatment. The next and fourth level of children (approximately age 6 to 7) gain a better understanding of specific moral principles such as merit and need, and acknowledge that one should receive resources accordingly. Lastly, in the final two levels, children learn that different individuals can have different and competing justifications for their claims. For instance, in the fifth level (age 7 to 8) children's considerations of one's needs is often prioritized over other factors, thus displaying a benevolent mode of behavior ("the poor peer should receive more reward than a hardworking peer, because he needs more"). In the final level (age 9 to 10), children fully consider all justice claims, such as need, equality, and merit, and try to coordinate these factors in their fair allocation decisions, as further supported from empirical studies described in the earlier section (see Sigelman and Waitzman 1991).

Recently, the social domain theory has emphasized the importance of documenting children's underlying reasonings in their moral judgments (Killen and Smetana 2015; Smetana et al. 2014; Turiel 1983). The social domain theorists have argued that although children make the same fairness decisions, such as prioritizing a hardworking person over a non-hardworking person, their underlying reasons can vary significantly (Nucci and Turiel 2009; Turiel 1983, 2006). For example, children who value conventional social knowledge may justify their decisions based on the norms of the society (e.g., "it is the group's tradition that we give more to the hardworking children"), whereas other children justify their decisions based on core moral principles such as fairness and justice (e.g., "hard work deserves more"). Likewise, age differences may arise in children's use of justifications; older children could justify their judgments primarily based on moral concerns while younger children are less likely to do so. In fact, a recent study by Noh et al. (2019) revealed how children's underlying reasonings in their distributive justice decisions vary with age; the result highlighted that while both older children (7- to 10-year-olds) and younger children (3- to 6-year-olds) made similar distributive decisions based on merit, older children put strong emphasis on moral concerns, such as arguing that intentional aspect should be acknowledged in fair allocations, significantly more than younger children.

These findings from recent empirical work have been in line with the traditional theoretical perspectives by Piaget (1932) and Damon (1977) in that children's understanding of fairness progresses dramatically with age. Both have highlighted that as children get older, they obtain better ability to reason about and integrate significant moral principles (e.g., intentional aspect) in their distributive decisions. It is noteworthy that not only children's fairness decision itself develops but also their underlying reasonings move through a substantial developmental trajectory.

Children's Understanding of Merit across Cultures

Despite considerable research on children's sense of merit-based distributive justice, documentations from non-Western countries and the comparison of different cultures on this topic remain severely limited (Carson and Banuazizi 2008; Paulus 2015). Further, even a few studies that focused on different cultural settings revealed contrasting findings on the role of culture in children's meritorious decisions.

First, a study by Schäfer et al. (2015) took a *culture-specific* approach and asserted that cultural context heavily influences children's concerns for merit in their distributive decisions. In this study, 4- to 11-year-olds from Haillom (a partially hunter-gatherer society in Africa with an egalitarian culture), Samburu (a gerontocratic pastoralist society in Africa), and Germany (modern Western society) were asked to distribute food rewards (e.g., cereal, fruit) after they played fishing games. In this game, children used magnetic fishing rods to fish out cube-shaped toys; however, experimenters manipulated magnetic rods so that children's levels of merit vary. Strikingly, children from different cultures displayed distinctive ideas concerning fairness norms as related to merit. The Sambura children preferred strict equal treatment regardless of merit levels, perhaps due to their limited experience in meritorious distribution in a gerontocratic pastoralist society. By contrast, the German children preferred to allocate resources precisely according to work contribution, and the Haillom children advocated both equal and balanced allocation similar to their society's egalitarian culture and history. The findings revealed that children's incorporation of merit in their distributive justice decisions may depend on diverse cultural factors, such as the norms in the society, the expectations of authority, and the past experiences with fairness decisions within the community.

On the other hand, a study by Liénard, Chevallier, Mascaro, Kiura and Baumard (2013) supported contrasting findings by emphasizing the similarities in children's meritorious thinking across cultures. In this study, 5-year-olds in a non-Western tribal society (the Turkana of Kenya) were invited to distribute cookies in a collaborative context where the participants worked together with another peer to attain a goal. When children had the opportunity to distribute the rewards after the collaboration, they evidently took merit into account: children distributed a bigger cookie to the more meritorious partner and the smaller cookie to the non-meritorious partner. The finding directly mirrored prior

work with children in a Western society (Baumard et al. 2012) where US children also distributed cookies based on the recipients' levels of merit in a similar baking activity. This approach suggested that children's concerns for merit in their fairness thinking emerge similarly across cultural settings, rather than distinctively based on each unique culture.

As revealed above, the role of culture in children's distributive justice remain contradictory and thus call for a greater focus on research initiatives in the cultural context. Further, there are high needs for research on culture that precisely focuses on specific aspects of culture (e.g., culture-specific parenting style) that may result in differences on children's fairness thinking. It is also noteworthy that future cross-cultural studies should be implemented while controlling for SES and other factors that can be highly intertwined with cultural settings (Skitka and Tetlock 1992), in order to unveil the distinct role of culture in children's conceptions of distributive justice.

Future Directions for Studying Children's Understanding of Merit in Distributive Justice Decisions

There remain a great many areas to be explored on children's consideration of merit in resource allocation contexts. In particular, an urgent need exists in two specific areas of study: (1) the distinction between effort and outcome in children's understanding of merit, and (2) the role of parental input on children's merit-based distributive decisions.

First, it is central to understand how children conceptualize merit when integrating this factor into their fairness decisions. Merit incorporates two major components: *effort* and *outcome* (Carson and Banuazizi 2008; Kienbaum and Wilkening 2009). In the prior literature, however, these two components were always entangled and displayed a positive relationship between effort and outcome in describing work contribution; thus, a meritorious person constantly had a high level of effort followed by a high level of outcome, while the non-meritorious person had a low level of effort followed by a low level of outcome (e.g., hardworking person had a good outcome; lazy person had a bad outcome) (Baumard et al. 2012; Rizzo et al. 2016). It is imperative to disentangle these two components of merit because little is known about whether children value merit because of effort, or because of good outcomes that result from effort. It could be that children make meritorious fairness decisions solely based on the intrinsic aspect of the act (i.e., effort) or solely based on the result of the act (i.e., outcome). Thus, whether the *hard work* itself or the *productivity* of the hard work drives children's merit-based fairness decisions is a question that remains to be addressed in this area of research.

Taking a step further, which aspect of merit children prioritize more when effort and outcome are in conflict needs investigation. In our everyday lives, we often observe that one can be hardworking but still not demonstrate good productivity, while another can be highly productive without effort due to luck or other external factors. For instance, children commonly experience the mismatch between effort and outcome when they engage in diverse school activities such as the plant growing task: a child can work very hard to grow plants, such as giving water every day, but still have no luck in growing them; in contrast, another child can get lucky (e.g., happen to have better seeds and soil) and effortlessly grow the plant. These situations prompt follow-up questions, such as, "To ensure fairness, what factors should be considered important when distributing rewards for the activity?" Thus, future studies are warranted to examine how children reason about these two competing components, and how their fairness thinking on this issue develops with age.

The classical theoretical approach (Piaget 1932; Kohlberg 1969) and its supporting empirical work (Helwig et al. 2001; Zelazo et al. 1996) have emphasized the outcome-to-intent developmental shift with age in children's moral thinking. Based on this approach, it is plausible that children first come to acknowledge positive outcomes (e.g., productivity) more than other factors and gradually come to focus primarily on the intentional aspects of work contribution (e.g., hard work) in their fairness thinking. In contrast, a set of prior research has emphasized children's capacity to incorporate intentions in their moral evaluations from a young age, by showing that even 3- to 4-year-olds evaluate an intended harm as morally worse than an accidental harm (Cushman et al. 2013; Killen et al. 2011; Pellizzoni et al. 2010). Based on this perspective, it may be that children show sensitivity to effort from early childhood. Therefore, future studies on how children conceptualize the two aspects of merit would capture this real – but understudied – aspect of the world, and further provide information on how children develop their notions of merit-based distributive justice.

Secondly, the role of parental input on children's sense of distributive justice should be explored in depth. This research direction is in line with the previous discussion on culture that more research on *diverse aspects of culture* in in urgent need when examining children's fairness thinking. Parents are one of the most influential figures who transmit culture to their children, which in turn play pivotal roles in children's socialization in the given society. For instance, parental factors such as discipline, attachment, and modeling have remarkable impacts on how children shape their thinking in a variety of areas including morality. Thereby,

how parents help or even hinder children build conceptions on fairness should be explored in depth in further research.

In fact, while substantial research has demonstrated parental impact on children's moral development in diverse contexts (Scirocco et al. 2018; Smith et al. 2017), not many studies address the area of *distributive justice*. Classical theorists along with empirical studies have suggested that social environment helps explain the individual differences in one's distributive justice thinking (Damon 1977; Enright, Bjerstedt, Enright, Levy, Lapsley, Buss and Zindler 1984; Piaget 1932), and that parents are one of the most prominent factors in this process (Marshall et al. 2001; Walker and Taylor 1991). A study by Doss et al. (1995) indicates that most often, it is parents who take charge in distributing resources to children within the family context, and thus, children are influenced by how their parents view and act based on distributive justice. For instance, a study by Marshall et al. (2001) revealed that effective maternal communication supported adolescents' (15- to 16-year-olds) ability to better reason about distributive justice, and that maternal justice practices influenced adolescents' considerations on how resources should be allocated. However, while studies reveal the importance of parental input on their *adolescent* children's distributive justice, strikingly scarce research has focused on *young children* of three to eight years of age. Thus, many questions persist such as, "Does parental input (e.g., parents' emphasis on fairness, parents' own moral practice) help promote young children's fairness thinking?" and "How does parental impact on children's meritorious thinking change with age?" and thus warrant future investigations.

Extending this area of research, the influence not only of positive parental input, but also of negative parental input that may conflict with children's own fairness principles remains to be examined. What if a parent holds a view that conflicts with the child's, such as a parent giving resources to someone who the child does not view as deserving resources? Will children respect the parental decision or speak against it? These questions serve to shed light on when children start to abide by their own moral principles in making fairness decisions. Prior studies based on the social domain perspective have emphasized that children as young as three years of age have the capability to reject adult messages that conflict with their own moral principles (Elenbaas and Killen 2016; Noh et al. 2017; Turiel 1983, 2006). For instance, children view transgressions to be harmful and unacceptable even when adults condone or even compliment such acts (Laupa and Tse 2005; Laupa, Turiel and Cowan 1995; Smetana et al. 1993; Wainryb et al. 2004). However, these studies particularly focused on prototypic transgressional situations such as physical harm (e.g., hitting) or psychological harm (e.g., hurting one's feelings), thereby leaving unanswered the question of whether children would do the same in the context of *distributive justice*. For instance, would children oppose unfair messages and practices from parents, such as parents rewarding more resources – money for college – to their son over their daughter mainly due to their gender differences? Future studies in this direction would help expand the relatively new research area on how children respond to parents' misleading input in the context of distributive justice.

To summarize, this systematic review has provided a thorough investigation into children's sense of merit in a distributive justice context, providing a means for researchers to reflect on past studies and to develop future research in the field. Notably, further studies are warranted to disentangle the two major components of merit, effort and outcome, and to examine the role of parental input on young children's fairness thinking to deepen the collective knowledge surrounding children's merit-based distributive justice.

Compliance with Ethical Standards

Conflict of Interest The author declares that she has no conflict of interest.

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References

Almås, I., Cappelen, A. W., Sørensen, E. Ø., & Tungodden, B. (2010). Fairness and the development of inequality acceptance. *Science*, *328*(5982), 1176–1178. https://doi.org/10.1126/science.1187300.

Baumard, N., Mascaro, O., & Chevallier, C. (2012). Preschoolers are able to take merit into account when distributing goods. *Developmental Psychology*, *48*, 492–498. https://doi.org/10.1037/a0026598.

Blake, P. R., McAuliffe, K., & Warneken, F. (2014). The developmental origins of fairness: the knowledge-behavior gap. *Trends in Cognitive Sciences, 18*(11) 559–561.

Brownell, C. A., & Carriger, M. (1990). Changes in cooperation and self—other differentiation during the second year. *Child Development*, *61*, 1164–1174. https://doi.org/10.2307/1130884.

Carson, A. S., & Banuazizi, A. (2008). "That's not fair": similarities and differences in distributive justice reasoning between American and Filipino children. *Journal of Cross-Cultural Psychology*, *39*, 493–514. https://doi.org/10.1177/0022022108318134.

Cushman, F., Sheketoff, R., Wharton, S., & Carey, S. (2013). The development of intent-based moral judgment. *Cognition*, *127*(1), 6–21. https://doi.org/10.1016/j.cognition.2012.11.008.

Dahl, A. (2014). Definitions and developmental processes in research on infant morality. *Human Development*, *57*, 241–249. https://doi.org/10.1159/000364919.

Dahl, A., and Freda, G. F. (2017). How young children come to view harming others as wrong: a developmental analysis. In J. A. Sommerville and J. Decety (Eds) *Social cognition: development across the life span* (pp. 151–184). New York, NY: Routledge.

Dahl, A. & Killen, M. (2018). A developmental perspective on the origins of morality in infancy and early childhood. *Frontiers in*

Psychology: Developmental Psychology, 20. https://doi.org/10.3389/fpsyg.2018.01736.

Dahl, A., & Kim, L. (2014). Why is it bad to make a mess? Preschoolers' conceptions of pragmatic norms. *Cognitive Development*, *32*, 12–22. https://doi.org/10.1016/j.cogdev.2014.05.004.

Damon, W. (1977). *The social world of the child.* San Francisco, CA: Jossey-Bass.

Doss, V. S., Marlowe, J., & Godwin, D. (1995). Middle-school children's sources and uses of money. *The Journal of Consumer Affairs*, *29*(1), 219–241. https://doi.org/10.1111/j.1745-6606.1995.tb00046.x.

Elenbaas, L., & Killen, M. (2016). Children rectify inequalities for disadvantaged groups. *Developmental Psychology*, *52*(8), 1318–1329. https://doi.org/10.1037/dev0000154.

Enright, R. D., Bjerstedt, A., Enright, W. F., Levy, V. M., Lapsley, D. K., Buss, R. R., & Zindler, M. (1984). Distributive justice development: cross-cultural, contextual, and longitudinal evaluations. *Child Development*, *55*, 1737–1751. https://doi.org/10.2307/1129921.

Fehr, E., Bernhard, H., & Rockenbach, B. (2008). Egalitarianism in young children. *Nature*, *454*, 1079–1083. https://doi.org/10.1038/nature07155.

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

Hamann, K., Bender, J., & Tomasello, M. (2014). Meritocratic sharing is based on collaboration in 3-year-olds. *Developmental Psychology*, *50*(1), 121–128. https://doi.org/10.1037/a0032965.

Helwig, C., Zelazo, P., & Wilson, M. (2001). Children's judgments of psychological harm in normal and noncanonical situations. *Child Development*, *72*, 66–81. https://doi.org/10.1111/1467-8624.00266.

Josephs, M., & Rakoczy, H. (2016). Young children think you can opt out of social-conventional but not moral practices. *Cognitive Development*, *39*, 197–204. https://doi.org/10.1016/j.cogdev.2016.07.002.

Kanngiesser, P., & Warneken, F. (2012). Young children consider merit when sharing resources with others. *Plos ONE*, *7*(8). https://doi.org/10.1371/journal.pone.0043979.

Kenward, B., & Dahl, M. (2011). Preschoolers distribute scarce resources according to the moral valence of recipients' previous actions. *Developmental Psychology*, *47*(4), 1054–1064. https://doi.org/10.1037/a0023869.

Kienbaum, J., & Wilkening, F. (2009). Children's and adolescents' intuitive judgements about distributive justice: Integrating need, effort, and luck. *European Journal of Developmental Psychology*, *6*, 481–498. https://doi.org/10.1080/17405620701497299.

Killen, M., Mulvey, K. L., Richardson, C., Jampol, N., & Woodward, A. (2011). The accidental transgressor: morally-relevant theory of mind. *Cognition*, *119*(2), 197–215. https://doi.org/10.1016/j.cognition.2011.01.006.

Killen, M., & Rutland, A. (2011). *Children and social exclusion: Morality, prejudice, and group identity.* New York, NY: Wiley/Blackwell Publishers.

Killen, M., & Smetana, J. (2015). Origins and development of morality. In M. E. Lamb (Ed.), *Handbook of child psychology and developmental science*. 7th edn (Vol. III, pp. 701–749). NY: Wiley-Blackwell.

Kohlberg., L. (1969). *Stage and sequence: The cognitive-developmental approach to socialization.* Chicago, IL: Rand McNally.

Liénard, P., Chevallier, C., Mascaro, O., Kiura, P., & Baumard, N. (2013). Early understanding of merit in Turkana children. *Journal of Cognition and Culture*, *13*, 57–66. https://doi.org/10.1163/15685373-12342084.

Laupa, M., Turiel, E., & Cowan, P. A. (1995). Obedience to authority in children and adults. In Killen M. & Hart, D (Eds), *Morality in Every Day Life: Developmental Perspectives* (pp. 131–165). Cambridge, NY: Cambridge University Press.

Laupa, M. & Tse, P. (2005). Authority concepts among children and adolescents in the island of Macao. *Social Development*, *14*(4), 652–663.

Marshall, S., Adams, G. R., & Ryan, B. A. (2001). Distributive-justice reasoning in families with adolescents. *Journal of Family Issues*, *22*(1), 107–123. https://doi.org/10.1177/019251301022001005.

Noh, J., D'Esterre, A., & Killen, M. (2019). Effort or outcome? Children's meritorious decisions. *Journal of Experimental Child Psychology*, *178*, 1–14. https://doi.org/10.1016/j.jecp.2018.09.005.

Noh, J. Y., Elenbaas, L. M., Park, K. J., Chung, Y. S., & Killen, M. (2017). Opinion versus knowledge: the influence of testimony format on children's judgments in morally relevant contexts. *Early Education and Development*, *28*(2), 240–254. https://doi.org/10.1080/10409289.2016.1197013.

Nucci, L., & Turiel, E. (2009). Capturing the complexity of moral development and education. *Mind, brain, and education*, *3*, 151–159. https://doi.org/10.1111/j.1751-228X.2009.01065.x.

Nucci, L. P., & Weber, E. K. (1995). Social interactions in the home and the development of young children's conceptions of the personal. *Child Development*, *66*(5), 1438–1452. https://doi.org/10.2307/1131656.

Paulus, M., & Moore, C. (2014). The development of recipient-dependent sharing behavior and sharing expectations in preschool children. *Developmental Psychology, 50*(3), 914–921.

Paulus, M. (2015). Children's inequity aversion depends on culture: a cross-cultural comparison. *Journal of Experimental Child Psychology*, *132*, 240–246. https://doi.org/10.1016/j.jecp.2014.12.007.

Pellizzoni, S., Siegal, M., & Surian, L. (2010). The contact principle and utilitarian moral judgments in young children. *Developmental Science*, *13*(2), 265–270. https://doi.org/10.1111/j.1467-7687.2009.00851.x.

Piaget, J. (1932). *The moral judgment of the child*. New York: Free Press.

Rizzo, M. T., Elenbaas, L., Cooley, S., & Killen, M. (2016). Children's recognition of fairness and others' welfare in a resource allocation task: age related changes. *Developmental Psychology*, *52*(8), 1307–1317. https://doi.org/10.1037/dev0000134.

Rizzo, M. T., & Killen, M. (2016). Children's understanding of equity in the context of inequality. *British Journal of Developmental Psychology*, *34*(4), 569–581. https://doi.org/10.1111/bjdp.12150.

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

Schmidt, M. F. H., Rakoczy, H., & Tomasello, M. (2012). Young children enforce social norms selectively depending on the violator's group affiliation. *Cognition*, *124*(3), 325–333. https://doi.org/10.1016/j.cognition.2012.06.004.

Schmidt, M. F. H., Svetlova, M., Johe, J., & Tomasello, M. (2016). Children's developing understanding of legitimate reasons for allocating resources unequally. *Cognitive Development*, *37*, 42–52. https://doi.org/10.1016/j.cogdev.2015.11.001.

Schäfer, M., Haun, D. B. M., & Tomasello, M. (2015). Fair is not fair everywhere. *Psychological Science*, *26*(8), 1252–1260. https://doi.org/10.1177/0956797615586188.

Scirocco, A., Recchia, H. E., Wainryb, C., & Pasupathi, M. (2018). Conversations about children's transgressions against siblings and friends: maternal moral socialization strategies are sensitive to relationship context. *Social Development*, https://doi.org/10.1111/sode.12303.

Sigelman, C. K., & Waitzman, K. A. (1991). The development of distributive justice orientations: contextual influences on

children's resource allocations. *Child Development*, *62*, 1367 https://doi.org/10.2307/1130812.

Skitka, L. J., & Tetlock, P. E. (1992). Allocating scarce resources: a contingency model of distributive justice. *Journal of Experimental Social Psychology*, *28*(6), 491–522. https://doi.org/10.1016/0022-1031(92)90043-J.

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

Smetana, J. G., & Braeges, J. L. (1990). The development of toddler's moral and conventional judgments. *Merrill-Palmer Quarterly*, *36* (3), 329–346.

Smetana, J. G., Jambon, M., & Ball, C. (2014). The social domain approach to children's moral and social judgments. In M. Killen & J. G. Smetana (Eds), *Handbook of moral development*. 2nd ed (pp. 23–45). New York, NY: Psychology Press.

Smetana, J. G., Schlagman, N., & Adams, P. W. (1993). Preschool children's judgments about hypothetical and actual transgressions. *Child Development*, *64*, 202–214. https://doi.org/10.2307/1131446.

Smith, C. E., Noh, J. Y., Rizzo, M. T., & Harris, P. L. (2017). When and why parents prompt their children to apologize: The roles of transgression type and parenting style. *Journal of Family Studies*, *23*, 38–61. https://doi.org/10.1080/13229400.2016.1176588.

Smith, C. E., & Warneken, F. (2016). Children's reasoning about distributive and retributive justice across development. *Developmental Psychology*, *52*, 613–628. https://doi.org/10.1037/a0040069.

Sommerville, J. A., Schmidt, M. H., Yun, J., & Burns, M. (2013). The development of fairness expectations and prosocial behavior in the second year of life. *Infancy*, *18*, 40–66. https://doi.org/10.1111/j.1532-7078.2012.00129.x.

Surian, L., & Franchin, L. (2017). Infants reason about deserving agents: a test with distributive actions. *Cognitive Development*, *44*, 49–56. https://doi.org/10.1016/j.cogdev.2017.08.009.

Turiel, E. (1983). *The development of social knowledge: morality and convention.* Cambridge, England: Cambridge University Press.

Turiel E. (2015). Moral development. In R. M. Lerner (Ed.), *Handbook of Child Psychology and Developmental Science* (pp. 184–552). New York, NY: John Wiley & Sons, Inc.

Turiel, E. (2006). The development of morality. In N. Eisenberg, W. Damon, & R. M. Lerner (Eds), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development.* 6th edn (pp. 863–932). Hoboken, NJ: John Wiley & Sons Inc.

Vaish, A., Carpenter, M., & Tomasello, M. (2009). Sympathy through affective perspective taking and its relation to prosocial behavior in toddlers. *Developmental Psychology*, *45*, 534–543. https://doi.org/10.1037/a0014322.

Wainryb, C., Shaw, L. A., Langley, M., Cottam, K., & Lewis, R. (2004). Children's thinking about diversity of belief in the early school years: judgments of relativism, tolerance, and disagreeing persons. *Child Development*, *75*, 687–703. https://doi.org/10.1111/j.1467-8624.2004.00701.x.

Walker, L. J., & Taylor, J. H. (1991). Family interactions and the development of moral reasoning. *Child Development*, *62*(2), 264–283. https://doi.org/10.2307/1131002.

Warneken, F., Lohse, K., Melis, A., & Tomasello, M. (2011). Young children share the spoils after collaboration. *Psychological Science*, *22*, 267–273. https://doi.org/10.1177/0956797610395392.

Zelazo, P. D., Helwig, C. C., & Lau, A. (1996). Intention, act and outcome in behavioral prediction and moral judgment. *Child Development*, *67*, 2478–2492. https://doi.org/10.2307/1131635.