Children' s Distributive Fairness in Group Contexts

Authors: Jiang Danying, Yang Yunmei, Li Jing, Li Jing

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Abstract

In group contexts, children' s resource allocation decisions are influenced by group identity, group status, and group norms. When group factors conflict with equitable distribution, children may either adhere to principles of justice and fairness or exhibit bias toward group interests. All three group factors affect children' s distributive fairness; moreover, individual factors also shape their allocation decisions in group settings. Future research should devote greater attention to group factors by manipulating group information within allocation contexts and examining the interactions among these three group factors, thereby advancing our understanding of children' s distributive fairness in complex group situations. Additionally, individual factors influencing distributive fairness in group contexts represent important issues requiring systematic investigation and discussion in future studies.

Full Text

Preamble

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JIANG Danying, YANG Yunmei, LI Jing
(1 CAS Key Laboratory of Behavioral Science, Institute of Psychology, Chinese Academy of Sciences, Beijing 100101, China)
(2 Department of Psychology, University of Chinese Academy of Sciences, Beijing 100049, China)

Abstract: Children' s resource allocation decisions in group contexts are influenced by group identification, group status, and group norms. When confronted with conflicts between group factors and distributive fairness, children may either uphold justice or favor group interests. These three group factors each exert distinct influences on children' s allocation fairness, while individual factors also shape their decision-making in group settings. Future research should

pay greater attention to group factors by manipulating group information in allocation contexts and exploring interactions among the three group factors to better understand children' s distributive justice in complex group situations. Individual factors affecting allocation fairness in group contexts also warrant systematic investigation and discussion.

Keywords: group context; resource allocation; fairness; children

Distributive justice refers to the fair or moral distribution of resources (Hsu et al., 2008) and constitutes a crucial component of children' s moral development, forming the foundation for cooperative and sharing behaviors (Lobue et al., 2011). Previous research on children' s distributive justice has primarily examined age characteristics, allocation principles, task types, and levels of involvement (Gao et al., 2015; Wang & Su, 2011, 2013; Deutsch, 1975; Schmidt & Sommerville, 2011; Sloane et al., 2012). Fairness preferences in resource allocation emerge early in childhood (Schmidt & Sommerville, 2011; Sloane et al., 2012), and as children mature, they become increasingly sensitive to distributive fairness (Liu et al., 2015; Hamann et al., 2014; Schmidt & Sommerville, 2011; Sloane et al., 2012), incorporating factors such as numerical equality, recipients' contributions, and others' welfare into their allocation decisions (Hamann et al., 2014; Rizzo et al., 2016), thereby demonstrating more equitable distribution behaviors (Damon, 1975, 1980). Fair allocation rests on three principles: equality, equity, and need, corresponding to equal distribution, distribution according to contribution, and distribution according to need (Deutsch, 1975). Researchers have employed the Dictator Game, Ultimatum Game, and Third-Party Punishment paradigms to investigate the developmental trajectory of children' s understanding and application of these fairness principles across varying involvement levels (where children serve as observers or distributors, or allocate resources between themselves and others) (Gao et al., 2015; Wang & Su, 2011; Zhang & Zhang, 2014; Hamann et al., 2014; Rizzo et al., 2016).

As children age and undergo socialization, they gradually comprehend social rules, engage in more frequent and diverse group activities, and become increasingly influenced by sociocultural norms (Liu & Li, 2013; Zhu & Liu, 2005). Consequently, children' s resource allocation extends beyond individual interactions to become intimately connected with group contexts. On one hand, children employ fair distribution as a strategy to establish and maintain interpersonal relationships and ensure others receive equitable treatment (Corsaro, 2015; Elenbaas & Killen, 2016; Moore, 2009). On the other hand, their allocation decisions are also shaped by group factors. Group processes such as forming group identification, understanding group status, and comprehending group norms render allocation situations more complex (Moore, 2009; Rutland & Killen, 2017) and further influence children' s allocation decisions and behaviors (Cooley & Killen, 2015; Xie et al., 2017). The Social Reasoning Development Perspective (SRD) posits that when allocating resources, children simultaneously consider both fairness and group factors such as identity, status, and norms, weighing moral and group relational considerations before making decisions (Killen et al., 2018; Mul-

vey, 2016; Rutland & Killen, 2017; Rutland et al., 2010). Research on children' s distributive justice in individual contexts typically involves only individual information about distributors and recipients, such as contribution magnitude and involvement level, whereas studies in group contexts incorporate group-related information, including the group identity and status of distributors or recipients and the group norms of their respective groups. These group factors place children in more complex allocation situations, yielding more diverse and intriguing allocation decisions. Compared to individual contexts, group awareness provides children with a new perspective on resource allocation. Group contexts may either conflict with distributive fairness, causing children to deviate from fairness preferences and exhibit group bias, or prompt children to recognize intergroup inequality and attempt to rectify it (Elenbaas & Killen, 2016; Killen et al., 2018; Rutland & Killen, 2017; Xie et al., 2017). For instance, while 3- to 5-year-old children can apply the contribution principle to varying degrees (Wang & Su, 2013; Kanngiesser & Warneken, 2012), the inhibition of in-group favoritism does not emerge until ages 7–8 (Beelmann, 2011; Fehr et al., 2008), and this conflict between principles may elicit novel allocation decisions.

Specifically, in group contexts, group identity, status, and norms compel children to weigh fairness preferences against in-group favoritism, compensation for high- or low-status groups, and group norms, respectively. Naturally, children' s allocation fairness in group contexts is also constrained by individual factors, such as their understanding of fairness, expectations of reciprocity, theory of mind, inhibitory control, and family socioeconomic status.

2. The Influence of In-Group Favoritism on Children' s Distributive Justice

Children possess an innate adaptive bias that enables them to distinguish between in-group and out-group members and treat them differentially (Bloom, 2013). Once individuals identify with a social group, they exhibit favoritism toward their own group, known as in-group favoritism (Bernhard et al., 2006). Children demonstrate in-group favoritism when allocating resources across groups defined by social distance (e.g., friends vs. strangers), temporary situations (e.g., color preferences), and social structures (e.g., gender, race) (Bindra et al., 2020; Dunham et al., 2011; Elenbaas & Killen, 2016; Renno & Shutts, 2015; Yu et al., 2016). Infants already show some degree of in-group favoritism; for example, 11-month-olds prefer puppets in stories told by experimenters who share their preferences (Mahajan & Wynn, 2012). As they age, individuals not only display biased attitudes and behaviors toward their in-group but also desire their group' s development to enhance their self-esteem, thereby influencing their resource allocation decisions (Liu et al., 2019). The impact of in-group favoritism on children' s resource allocation varies across age, involvement level, and contribution magnitude.

2.1. Age Differences in the Influence of In-Group Favoritism

The influence of in-group favoritism on children's resource allocation shows clear age-related differences. Research indicates that 3- to 4-year-olds do not make significantly different allocation decisions between strangers and friends (Yu et al., 2016), whereas 4- to 5-year-olds tend to distribute resources fairly among friends (Moore, 2009; Paulus, 2014). By ages 5–6, children exhibit pronounced in-group favoritism (Yu et al., 2016), which peaks between ages 5 and 7 (Beelmann, 2011). Seven- to 8-year-olds can inhibit in-group favoritism to rectify unfair allocations that benefit them (Fehr et al., 2008), while 10- to 11-year-olds place greater emphasis on fairness, allocating resources equitably between in-group and out-group members and even distributing fewer resources to in-group members to correct existing unfairness (Elenbaas & Killen, 2016). When adults face conflicts between in-group favoritism and fairness norms, most make decisions consistent with fairness norms, even at personal cost (Jordan et al., 2014; McGuire, 2018), aligning with the choices of 10- to 11-year-olds and suggesting that children' s allocation decisions begin to approximate adult patterns at this stage.

However, Li et al. (2019) found that 9- to 12-year-olds still show some in-group favoritism. This discrepancy may stem from differences in task format. Li and colleagues compared children' s allocation decisions when directly providing allocation outcomes versus selecting allocation procedures, offering a novel perspective on children's resource allocation. They found that when asked to directly provide allocation outcomes, children considered social relationships over fairness, whereas when selecting allocation procedures, they prioritized fairness (Li et al., 2019). Notably, although 9- to 12-year-olds still exhibit in-group favoritism, they demonstrate greater fairness compared to 6- to 8-year-olds when allocating between friends and strangers (Li et al., 2019).

2.2. Variations in Influence by Level of Involvement

Children' s involvement in resource allocation tasks is distinguished by first-party and third-party contexts (Liang et al., 2015). In first-party contexts, children allocate resources between themselves and others, either as distributors allocating to in-group and out-group members or as recipients accepting or rejecting allocation proposals from in-group and out-group members. As distributors, children gradually develop in-group favoritism with age (Fehr et al., 2008; Paulus, 2014; Yu et al., 2016). As recipients, children accept fair proposals from both in-group and out-group members, reject unfair proposals from both, and punish both groups (McAuliffe & Dunham, 2017). Interestingly, 5- to 6-year-old girls punish out-group members' unfair allocations less severely than boys do (Wu & Gao, 2018), possibly reflecting differences in socialization processes (Rose & Rudolph, 2006). Boys engage in more competitive activities (Mcdonald et al., 2012), and intergroup conflict makes them less tolerant of out-group members receiving more resources, whereas girls participate in more empathetic, intimate interactions and adopt conflict-resolution strategies (Mcdonald et al.,

2012). This difference may underlie gender variations in punishing out-group selfishness, though further research is needed to verify this phenomenon and explore its underlying mechanisms.

In third-party contexts, where children are not personally affected by allocation outcomes, they either observe others' allocation processes or allocate resources among other peers (Liang et al., 2015). Because third-party contexts do not involve personal interests, children more readily make fair allocation decisions and are less influenced by in-group favoritism (Jing et al., 2016; Rochat et al., 2009). The degree of in-group favoritism in third-party contexts is affected by the quantity of resources to be allocated. When resources can be distributed equally, children make fair allocations; when equal distribution is impossible, they exhibit in-group favoritism, giving more to in-group members (Lee et al., 2018; Olson & Spelke, 2008; Renno & Shutts, 2015). This may occur because equal division eliminates the conflict between in-group favoritism and fairness, allowing direct equal distribution. However, in existing studies, the number of resources children allocate is small (two, three, four, or six items), and fair allocation when resources are divisible may result from sequential distribution strategies (Olson & Spelke, 2008). To test this hypothesis, researchers could observe and record children' s allocation processes or modify task formats, such as comparing allocation decisions when directly providing outcomes versus presenting allocation procedures, or increasing the number of allocable resources.

Conversely, some studies find that children are unaffected by in-group favoritism in first-party contexts but influenced in third-party contexts (Liu et al., 2019; Jordan et al., 2014; McAuliffe & Dunham, 2017). This may be because in first-party contexts, children prioritize self-interest over group relations, fearing recipients will reject their allocations and deprive them of resources, thus favoring fairness. In third-party contexts, children can weigh fairness principles against intergroup relations, thereby exhibiting in-group favoritism. To address these contradictory findings, future research should comprehensively consider factors such as child gender, resource quantity, allocation procedure, and involvement level, and inquire about children' s decision-making rationales to understand the psychological mechanisms underlying their choices between fairness preferences and in-group favoritism across different involvement levels.

2.3. Influence on Children' s Contribution-Based Resource Allocation

In market economies, contribution-based distribution (equity) constitutes the primary allocation mode (Zhang et al., 2014), making fairness based on the contribution principle a major research focus. In-group favoritism also affects this principle (Xiao et al., 2021). Six- to 10-year-olds consistently prioritize individual contributions when allocating resources, giving more to peers who contributed more (McAuliffe & Dunham, 2017), possibly because children at this stage begin applying the contribution principle while the influence of in-group favoritism wanes (Damon, 1975, 1980; Fehr et al., 2008; Gummerum et al., 2008). However, recent research suggests that contribution-based fair allocation

begins developing in early childhood (Zhang et al., 2014; Chevallier et al., 2015). Children may integrate information about individual contributions and group membership when making allocation decisions (Zhang, 2020). Among friends, strangers, and disliked peers, 7-year-olds allocate more resources to friends when they contributed more; when strangers contributed more than friends or disliked peers contributed more than strangers, 7-year-olds abandon the contribution principle and distribute equally (Zhang, 2020). Xiao et al. (2021) paired contribution magnitude with in-group/out-group status in four conditions and found that 6- to 8-year-olds consistently follow the contribution principle (Xiao et al., 2021), supporting previous findings and confirming the importance of fairness as a moral motive (McAuliffe & Dunham, 2017; Qiao & Jie, 2017; Rizzo et al., 2017; Rizzo et al., 2020; Rizzo & Killen, 2018). However, compared to other conditions, when the conflict between the contribution principle and in-group favoritism was strongest (i.e., high contribution—out-group, low contribution —in-group), children showed some in-group favoritism. This study provides a new paradigm for investigating the relationship between in-group favoritism and allocation fairness, which future research could extend to different allocation principles and contexts.

2.4. Other Factors Influencing Children' s In-Group Favoritism

Numerous factors moderate the impact of in-group favoritism on resource allocation. Intergroup relationships such as competition and cooperation shape this tendency. Competitive relationships intensify in-group favoritism (McGuire et al., 2018), especially when children' s own group is disadvantaged, leading them to allocate more resources to in-group members (Xiao et al., 2019). Resource value also matters, with children showing stronger in-group favoritism when distributing high-value resources (Liu et al., 2019).

Individual characteristics also affect in-group favoritism. Gender represents one significant factor: one perspective holds that males engage in more group activities, focus more on group relations, and exhibit stronger in-group favoritism (Fehr et al., 2008), while another argues that females' stronger empathy and greater investment in interpersonal relationships make them more susceptible to in-group favoritism (Nie et al., 2017; Lam et al., 2012; Lisi et al., 2008).

Theory of mind has also received attention. Theory of mind refers to the ability to attribute behaviors to mental states, including understanding others' desires, beliefs, intentions, and emotions (Flavell, 1999; Premack & Woodruff, 1978). It generally relates to children' s decisions to allocate resources to out-group members and helps inhibit in-group favoritism in such contexts (Chalik et al., 2014). In evaluation tasks, children who failed false-belief tasks considered it reasonable to allocate fewer resources to out-group members compared to those who passed (Mulvey et al., 2016). In allocation tasks, children with strong theory of mind share more with strangers (Wang & Su, 2013; Yu et al., 2016). When contribution magnitude conflicts with in-group favoritism, children with high theory of mind are less influenced by in-group bias and allocate more accord-

ing to the contribution principle (Xiao et al., 2021). Theory of mind may help children recognize that in-group and out-group members have different beliefs about the same allocation and evaluate out-group members' unfair treatment negatively. It also enables better understanding of strangers' intentions and needs, facilitating fairer allocations.

However, theory of mind does not predict resource allocation between children and in-group members (Paulus, 2014; Shaw & Olson, 2013; Yu et al., 2016). One explanation suggests that when allocating resources with in-group members, prior relationships and expectations of future reciprocity are primary considerations (Vonk et al., 2020). Alternatively, understanding out-group strangers' thoughts and needs may require higher theory of mind abilities (Paulus, 2014). Yu et al. (2016) propose a norm-based explanation: children's relationships with strangers are exchange relationships where they are not responsible for strangers' welfare and no equality norm exists. Children with high theory of mind may allocate fairly out of understanding for strangers' needs and emotions. In contrast, relationships with friends are communal relationships where children feel responsible for friends' welfare and often allocate according to equality norms and the need principle, requiring less theory of mind to achieve fairness (Yu et al., 2016).

Multiple-motive theory offers another explanation, suggesting that theory of mind helps children analyze different situations and weigh complex interests to make fair allocations. When allocation situations are simple, theory of mind has minimal impact; when complex, it plays a crucial role (Chen & Wu, 2017). Allocating resources with in-group members involves less intense motivational conflict and simpler situations, thus theory of mind has less influence. Future research could verify these explanations by using different paradigms for in-group and out-group allocation—for instance, using the Dictator Game (where distributors decide unilaterally) for in-group allocation and the Ultimatum Game (where recipients can reject offers) for out-group allocation. Manipulating recipients' power to accept or reject could reduce children's consideration of in-group members' mental states while highlighting their consideration of out-group members' mental states, thereby measuring allocation decisions when in-group/out-group factors conflict and assessing theory of mind's role.

Interestingly, research on children's long-term sharing patterns with in-group members shows that children with high theory of mind share more with in-group members over time (Vonk et al., 2020), contrasting with findings from one-shot tasks where high theory of mind children share less with in-group members (Cowell et al., 2015). Understanding why high theory of mind children prioritize in-group preferences over fairness norms in long-term tasks—whether due to relationship maintenance, higher expected returns, or sociocultural influences—has significant practical implications for guiding fair resource allocation in children and adults.

Overall, in-group favoritism represents a crucial factor influencing children's resource allocation in group contexts. Its impact peaks at ages 5–7 (Beelmann,

2011; Elenbaas & Killen, 2016; Fehr et al., 2008; Moore, 2009; Paulus, 2014; Yu et al., 2016). The degree of influence varies across involvement levels (Liu et al., 2019; Jing et al., 2016; Jordan et al., 2014; Lee et al., 2018; McAuliffe & Dunham, 2017; Olson & Spelke, 2008; Renno & Shutts, 2015; Rochat et al., 2009). When information about recipients' contributions is available, in-group favoritism' s influence diminishes (Xiao et al., 2021). Children' s gender, fairness understanding, and theory of mind also play significant roles. Additionally, isolated studies suggest that task format (direct allocation vs. procedure selection), intergroup relations (competition vs. cooperation), and resource value and quantity affect in-group favoritism' s impact (Liu et al., 2019; McGuire et al., 2018; Xiao et al., 2019), but these require further empirical support.

3. The Influence of Group Status on Children' s Resource Allocation

Since resource allocation often occurs between groups of different status, and even within groups members hold different positions, group status becomes an unavoidable influence. When group status differs, children primarily exhibit matching and compensation tendencies. Matching involves allocating more resources to high-status members to maintain existing inequality, while compensation involves giving more to low-status members to rectify inequality and achieve fairness (Lin & Liu, 2019).

3.1. Matching Tendency When Group Status Differs

Children across age groups show matching tendencies to maintain existing inequality when allocating between groups of different status (Elenbaas & Killen, 2016; Essler & Paulus, 2021; Kenward et al., 2015; Li et al., 2014; Olson et al., 2011; Paulus, 2014; Paulus, 2020; Rizzo & Killen, 2016). However, age differences exist: 3- to 5-year-olds allocate more to wealthier recipients (Essler et al., 2020), 6- to 8-year-olds emphasize equality and contribution principles, tending toward equal distribution (Charafeddine et al., 2016; Wörle & Paulus, 2018), and 10-year-olds attribute high status to "effort" and "contribution," viewing it as "just" and applying the contribution principle to maintain existing inequality (Sigelman, 2013).

Researchers have proposed several models to explain matching tendencies: the affective preference model (Olson et al., 2006; Horwitz et al., 2014), reciprocity-based strategic model (Ahl et al., 2019; Ahl & Dunham, 2019), numerical matching model (Chernyak et al., 2019; Essler et al., 2020; Paulus & Rosal-Grifoll, 2017), and normative model (Roberts et al., 2017; Roberts et al., 2018; Starmans et al., 2017). These models suggest that children' s matching behavior may stem from affective liking for high-status groups, expectations of greater reciprocity, desire for numerical consistency, or perception of inequality as normative. The affective preference and numerical matching models describe behavioral patterns, while the reciprocity and normative models speculate about underlying

motivations. Children' s preference for high-status groups and affective liking are well-documented (Olson et al., 2006; Horwitz et al., 2014), as are their expectations of higher returns (Ahl et al., 2019; Ahl & Dunham, 2019) and tendency to treat social inequality as normative (Roberts et al., 2017; Roberts et al., 2018; Starmans et al., 2017). However, matching existing quantities, like preferring high-status groups, is a behavioral manifestation rather than an underlying cause. Moreover, in relevant studies, children allocate more resources to individuals who are both high-status and currently resource-rich (Chernyak et al., 2019; Essler et al., 2020; Paulus & Rosal-Grifoll, 2017). Future research should clarify whether children match to maintain existing quantities or because they favor high-status groups by asking them to allocate between high-status but resource-poor and low-status but resource-rich individuals. Post-task inquiries about rationales could also illuminate motivations and test the reciprocity and normative models. Additionally, most studies involve socioeconomic status differences (rich vs. poor), with less attention to other sources of status differences, such as structural factors (nationality, race) or individual factors (academic performance, appearance, popularity). Future research should explore these variations and children' s allocation fairness within them.

System Justification Theory (SJT) offers a comprehensive explanation for matching tendencies, positing that children rationalize social inequality as fair and legitimate, thereby maintaining existing status hierarchies (Jost & Banaji, 1994). This mirrors adults' tendency to debate opportunity fairness while ignoring existing inequality (Elenbaas et al., 2020). Children' s normative model supports this theory, with evidence that 4-year-olds begin treating inequality as a social norm (Roberts et al., 2017; Roberts et al., 2018; Starmans et al., 2017). Future research should examine connections between the normative model and SJT, investigating when children begin viewing inequality like adults, what prompts them to rationalize inequality, and how their use of different allocation principles contributes to this process (Starmans et al., 2017).

3.2. Compensation Tendency When Group Status Differs

Children also exhibit compensation tendencies to rectify existing inequality when group status differs. Four- to 5-year-olds give more to those with fewer resources (Li et al., 2014; Paulus, 2014; Paulus & Leitherer, 2017), 6- to 8-year-olds consider both quantity and value when rectifying inequality (Shaw & Olson, 2013), 8-year-olds compensate subordinates (Charafeddine et al., 2016), and 10- to 11-year-olds evaluate intergroup inequality more negatively and rectify it when one group is disadvantaged (Elenbaas & Killen, 2016). Group factors prompt children to recognize intergroup inequality as unfair and motivate rectification (Killen et al., 2018; Rutland & Killen, 2017). Additionally, children' s own status affects their compensation behavior, with those from disadvantaged groups more likely to rectify inequality (Rizzo & Killen, 2020).

Researchers have proposed various explanations for this contrasting allocation pattern. First, children' s differing tendencies may relate to sociocultural con-

text, with children from collectivist cultures more inclined to allocate fairly to maintain group harmony (Chai & He, 2017). Second, the difference may stem from group specificity. For instance, compensation tendencies appear only when Black groups are disadvantaged, not when White groups are (Horwitz et al., 2014). Third, matching tendencies are most pronounced when status differences are economically based, possibly because children attribute economic differences to effort and apply the contribution principle (An et al., 2020; Rizzo et al., 2020; Rizzo & Killen, 2020). In contrast, inequality between Black and other groups stems from structural factors, and children may distinguish between causes of status differences when making allocation decisions. Rizzo and Killen (2020) confirmed that children make different moral evaluations of status differences arising from structural versus individual factors. Fourth, children gradually transition from matching to compensation between ages 3 and 8 (Lin & Liu, 2019; Charafeddine et al., 2016; Essler & Paulus, 2021; Rizzo & Killen, 2016). Rizzo and Killen (2016) found that when facing existing inequality, 3- to 4-year-olds consider post-allocation fairness but still match; 5- to 6-year-olds compensate but view both strategies as fair; and 7- to 8-year-olds consider matching less fair than compensation. This reflects the developmental progression from fairness cognition to fairness behavior, with children increasingly using fairness understanding to guide their actions (Liu et al., 2017). Surprisingly, although most adults value opportunity fairness, they often ignore inequality resulting from their group' s status (Elenbaas et al., 2020). This developmental trajectory warrants investigation into the critical conditions that prompt cognitive and behavioral changes in children and adults. Future cross-race and cross-cultural comparisons, as well as studies comparing children' s allocation decisions across status differences caused by different factors, could reveal the contexts and rationales underlying matching and compensation tendencies.

4. The Influence of Group Norms on Children' s Resource Allocation

Group norms are informal rules that constrain members' behavior, exerting powerful and stable influences despite rarely being documented or openly discussed (Hackman, 1976). Group norms include generic norms, which apply across large social groups (e.g., race, gender, nationality, religion) and specific groups (Abrams, Hogg & Marques, 2005; Abrams, Rutland & Cameron, 2003; Abrams, Rutland, Cameron & Marques, 2003), and group-specific norms, which apply only within particular subgroups (Rizzo et al., 2017). In group contexts, norms shape children' s allocation behaviors and their evaluations of allocation outcomes.

When evaluating others' allocation decisions, most 3- to 6-year-olds negatively evaluate peers who violate fairness norms, even when their group' s norm favors unfair allocation (giving more to one' s own group). However, some 3- to 6-year-olds like peers who support unfair group norms because they benefit the group (Cooley & Killen, 2015). With age, 5- to 6-year-olds recognize that individual

and group perspectives may differ (Cooley & Killen, 2015; Mulvey et al., 2014) and weigh multiple group norms when making allocation decisions. Research on group norms and resource allocation is limited, with previous work examining: generic norms like moral fairness (Fehr et al., 2008; Rakoczy et al., 2016) and social-conventional biases and stereotypes (Rhodes & Baron, 2019; Rizzo & Killen, 2018); group-specific norms like competition and cooperation (Wang et al., 2019; McGuire et al., 2017; McGuire et al., 2018); and children' s allocation decisions when different norms conflict (McGuire & Rutland, 2020; Rizzo & Killen, 2018).

4.1. The Influence of Group-Specific Norms on Children' s Allocation Decisions

Children follow fairness principles and view justice as an important moral norm (Rizzo & Killen, 2016; Schmidt et al., 2016). However, this moral norm is challenged when their group needs more resources. A recent study explored this conflict (McGuire & Rutland, 2020). Researchers manipulated goal contexts (prosocial, learning emphasizing moral norms, competition emphasizing group interests), group-specific norms (competitive, cooperative), and in-group/out-group conditions to examine allocation patterns in 9- to 11-year-olds and 14- to 16-year-olds. Results showed that in prosocial and competitive contexts, participants allocated more to in-group members regardless of whether their group held competitive or cooperative norms. In learning contexts, participants allocated fairly when their group held cooperative norms but favored in-group members when their group held competitive norms. This design forced participants to weigh moral norms (helping others, fairness), desire for victory (self-interest), in-group favoritism, and group norms before allocating. The scenario closely approximates real-world situations and could inform future task designs. Results align with prior research showing that competitive contexts reduce fairness preferences in early childhood (Pappert et al., 2017) and that competitive group norms lead children and adolescents (8–16 years) to favor in-group members (McGuire et al., 2017; McGuire et al., 2018). McGuire and Rutland (2020) expanded group context research from "whom to allocate to"and "what to allocate" to "why allocate," integrating moral norms, competitive/cooperative norms, and in-group favoritism within goal contexts, revealing developmental progression in how multiple factors jointly influence allocation decisions (Cooley & Killen, 2015; McGuire & Rutland, 2020; Moore, 2009; Rutland & Killen, 2017; Xie et al., 2017).

Notably, while previous research shows that competitive contexts and competitive group norms each intensify in-group favoritism (McGuire et al., 2017; McGuire et al., 2018; Pappert et al., 2017), this study found that when both conditions co-occurred, children did not show heightened in-group favoritism. Concern for reputation may explain this (McGuire & Rutland, 2020). Because children consider both personal and group reputation when allocating (Engelmann et al., 2018; Rapp et al., 2019), favoring in-group members to achieve

group victory may negatively impact reputation, leading children to inhibit in-group favoritism. Few previous studies have examined reputation concerns, yet group reputation and loyalty are factors children consider when moral and group norms conflict (Engelmann et al., 2018; Misch et al., 2018; Rapp et al., 2019). Future research should explore these factors to uncover the contextual conditions and related factors influencing how different group norms affect children' s resource allocation.

4.2. The Influence of Generic Group Norms on Children' s Allocation Decisions

Biases and stereotypes in social-conventional norms refer to specific expectations about group members (Ellemers, 2018), such as boys liking pirate stickers and girls liking butterfly stickers (Murray & Clare, 2017). Although not codified or explicit, these are informal, generic group norms that are tacitly understood among group members (Hou, 2013; Abrams, Hogg & Marques, 2005; Abrams, Rutland & Cameron, 2003; Abrams, Rutland, Cameron & Marques, 2003). These norms, often intertwined with complex sociohistorical factors, subtly influence how people observe, judge, and define others' thoughts and behaviors (Ellemers, 2018), affecting resource allocation decisions in children and adults (Breathett et al., 2020; Elenbaas & Killen, 2016; Ellemers, 2018; Paluck & Green, 2009; Ridgeway, 2013; Rizzo & Killen, 2018). For example, 4- to 7-year-olds give more resources to White individuals based on the stereotype that White people are wealthier (Mandalaywala et al., 2021). Although 6- to 10-year-olds strongly dislike unfairness, they accept gender-biased unfair allocations when resources have clear gender associations (Murray & Clare, 2017). Gender stereotypes held by 4- to 6-year-olds directly predict their allocation outcomes (Rizzo & Killen, 2018). Research on how group norms formed by structural factors and social traditions affect children' s allocation is limited in scope and quantity, and children' s allocation decisions when different categories of group norms conflict remain underexplored. Rizzo et al. (2017) examined the relationship between group norms and peer choice, using allocation fairness as one group norm. They set up moral (fair allocation) and social-conventional (class rules) norm contexts, asking 3- to 6-year-olds to choose between norm-following in-group peers and norm-violating out-group peers. In moral contexts, children ignored group identity and chose norm-following peers; in social-conventional contexts, their choices depended on their group' s existing norms. This study compared how different norm categories affect peer choice, showing that fairness as a moral norm was decisive, while class rules as social-conventional norms were constrained by group-specific norms. Future research could apply this paradigm to examine whether children's allocation patterns are similar and how they would respond if class rules were replaced by structural norms like stereotypes.

4.3. Theory of Mind and Children's Distributive Justice Under Group Norms

The influence of group norms on children' s resource allocation is constrained by theory of mind. Research shows that theory of mind helps children identify, differentiate, and resist group norms (Brown & Bigler, 2004; Brown & Bigler, 2005; Chalik et al., 2014; Mckown & Weinstein, 2003; Mulvey, Rizzo & Killen, 2016). Because children must weigh group and individual perspectives when deciding whether to challenge norms (Hitti et al., 2014; Nesdale & Lawson, 2011), theory of mind enables them to recognize that they, others, and their group may hold different views and that not all group members endorse established norms. This awareness allows children to resist group norms and allocate fairly (Mulvey, Rizzo & Killen, 2016; Rizzo & Killen, 2018). Children with high theory of mind are more likely to choose toys for peers that defy stereotypes (Mulvey, Rizzo & Killen, 2016) and, when gender stereotypes conflict with actual contributions, allocate based on contribution rather than stereotype (Rizzo & Killen, 2018).

Notably, Rizzo and Killen (2018) found no relationship between theory of mind and children' s stereotypes or between theory of mind and stereotype-based allocation. This may be because their design categorized stereotypes as consistent with, inconsistent with, or absent from general stereotypes, and most children (62%) made stereotype-consistent choices. Future research could use more nuanced scoring, such as rating the degree of stereotype consistency on a 1–5 scale among children who make stereotype-consistent choices, to reveal relationships between theory of mind, stereotypes, and stereotype-based allocation. This has implications for adult allocation patterns, as opportunities may still be allocated to men even when women outperform them in math, science, or driving. Since theory of mind is fully developed in adulthood, what causes adults to rely on stereotypes? Uncovering these mechanisms could inform interventions for children' s fairness. Additionally, children with identical theory of mind scores make different allocation decisions, suggesting that inhibitory control, working memory, and individual experience also matter (Wang et al., 2019), warranting further investigation.

In summary, group processes are essential to children' s socialization and profoundly affect peer interactions, especially resource allocation. Previous research has addressed how in-group favoritism, group status, and group norms individually influence children' s distributive justice, but studies on their interactions remain scarce. Moreover, while children consider others' needs, contributions, reputation, reciprocity, and involvement in individual contexts (Chen & Wu, 2017; Wang & Su, 2013; Zhang et al., 2014; Ahl et al., 2019; Ahl & Dunham, 2019; Engelmann et al., 2018; McGuire & Rutland, 2020; Rapp et al., 2019), these factors may also affect allocation in group contexts. Future research should examine interactions between these individual factors and group factors.

5. Future Research Directions

This review examined children' s resource allocation decisions in group contexts from the perspectives of group identity, status, and norms, and discussed individual factors including theory of mind. Synthesizing previous literature, we identified that in-group favoritism' s influence peaks at ages 5–7, examined the relationship between involvement level and in-group favoritism, and found that contribution information weakens in-group favoritism's impact. We summarized matching and compensation tendencies when group status is unequal, discussed relevant empirical research and theoretical mechanisms, and proposed explanations for these contradictory tendencies. Finally, we affirmed group norms' influence by reviewing research on generic and group-specific norms.

Distributive fairness has profound practical significance, underpinning lifelong social activities, positive relationships, social stability, and human cooperation. We hope future researchers will build on existing paradigms, incorporate interactions among group factors into experimental designs to enhance external validity, and thereby inform moral education on justice and reduce discrimination and inequality in adulthood. Additionally, this review did not extensively address children' s application of the three allocation principles in group contexts, a topic worthy of future exploration. For remaining controversies and unanswered questions, we propose the following directions.

5.1. A More Diverse and Comprehensive Focus on Multiple Factors in Group Contexts

Existing research on group contexts has extensively discussed in-group favoritism, covering developmental mechanisms, gender differences, task contexts, and allocation principles, providing a substantial theoretical foundation. However, research on group status is limited, mostly focusing on economically based status differences. Children' s allocation patterns among groups formed by social-historical factors (race, ethnicity, gender) or interest-based groups remain underexplored, with incomplete empirical evidence on age and gender characteristics and numerous untested theoretical speculations. Future studies should manipulate status inequality using diverse factors, such as individual abilities and contributions versus structural factors like regional differences and sociocultural contexts, to compare children' s allocation patterns across multiple sources of inequality.

When examining group norms' influence, researchers have devised various categories (social-conventional vs. moral norms, generic vs. specific norms), but content remains limited, with moral norms focusing primarily on fairness and specific norms concentrating on competition and cooperation. Future research should expand norm content to include real-world issues like "opportunity," "deception," and "examinations" (Ding et al., 2015; Elenbaas, 2019b) to enhance external validity and understand children' s decisions in complex, diverse normative contexts. Moreover, research on conflicts between generic and specific

norms has primarily pitted fairness against specific group norms, with little attention to conflicts involving stereotypes or social traditions. Since children develop stereotypes and understand conventional norms during preschool and increasingly use them in decision-making (Bigler & Liben, 2006; Haslanger, 2016), and can distinguish inequality caused by individual versus structural factors (Rizzo et al., 2020), future research should examine how these norms affect allocation and how children choose when they conflict with specific group norms. Understanding these patterns would advance knowledge of children' s moral development and adult allocation decisions, reducing social injustice caused by bias, stereotypes, and traditions.

The influences of in-group favoritism, group status, and group norms are not independent. For example, when White children aged 3–8 allocate stickers to White and Black targets, stronger racial category awareness predicts greater bias toward their own race (Gaither et al., 2020). In a cross-race study with 185 children aged 4–7 from various ethnicities, participants favored White targets, and those who stereotyped White individuals as wealthier showed greater allocation bias (Mandalaywala et al., 2021). These unfair decisions reflect both in-group favoritism and preferences for high-status groups influenced by stereotypes. Although some research has addressed conflicts between in-group favoritism and stereotypes (Rizzo & Killen, 2018), we know little about how these three factors interact and jointly affect allocation. Given the complexity, researchers should design sophisticated studies integrating multiple group factors to better approximate real-world situations and advance understanding of children' s allocation patterns.

5.2. Systematic Investigation of Individual Factors Affecting Children' s Distributive Justice in Group Contexts

Children's allocation decisions in group contexts are also influenced by individual factors including gender, fairness understanding, theory of mind, and inhibitory control, but existing research is insufficient to form comprehensive theories.

First, future research should examine children's fairness understanding and selection of allocation principles. As children's understanding of justice deepens with age, their evaluations of intergroup inequality and allocation decisions change, and in-group favoritism decreases (Lin & Liu, 2019; Xiao et al., 2021). Fairness understanding may help children recognize that equal distribution is not always just, prompting them to select appropriate principles. Research on why and how children choose principles in group contexts is limited, mostly focusing on equality. Only some studies have addressed the contribution principle (Xiao et al., 2021; McAuliffe & Dunham, 2017). Future work should investigate how children allocate resources of different values to in-group and out-group members, whether they follow the contribution principle when it conflicts with group norms, and when the need principle emerges in status-differentiated groups.

Second, although theory of mind' s role has received extensive attention, many

questions remain unresolved. While its relationship with in-group favoritism has been well-studied, research on its connections with group status and group norms is scarce. The few relevant studies on group norms and peer choice provide some clues. Since stereotypes and biases formed by group norms affect resource allocation in education and economics among adults (Buffington et al., 2016; Leslie et al., 2015; Macnell et al., 2014; Proudfoot et al., 2015; Yu et al., 2016), and psychologists have attempted various interventions to reduce prejudice (Paluck & Green, 2009), future research should clarify whether theory of mind helps children understand other groups' thoughts and needs, thereby improving allocation decisions when group norms or status conflict with fairness. If so, could enhancing theory of mind help children make fairer allocations? Previous research shows that intergroup contact affects allocation between groups of different wealth, with more contact predicting more resources allocated to low-wealth peers (Elenbaas, 2019a). Could this reflect improved understanding of others' perspectives? Future research using diverse theory of mind tasks could re-examine relationships between resource allocation and theory of mind across infancy, adolescence, and adulthood, identifying which aspects of theory of mind are most relevant to group-context allocation.

Third, theory of mind' s influence on allocation fairness in special populations warrants attention. Distributive fairness is crucial for prosocial behavior and social interaction, yet children with autism or ADHD show social deficits and theory of mind impairments (Holopainen et al., 2019; Jones et al., 2018) and exhibit less cooperation than typical children (Li & Zhu, 2014). Are their allocation fairness behaviors also impaired? How does their theory of mind deficit affect allocation fairness? If they show less fair allocation, could training interventions enhance their prosocial behavior? Since cognitive training (working memory training) can improve social deficits in these populations (Kofler et al., 2018; Weckstein et al., 2017), future research could explore training feasibility and transfer effects on allocation fairness.

Finally, other individual factors related to theory of mind, such as inhibitory control, working memory, and individual experience, also affect allocation fairness (Wang et al., 2019; Elenbaas, 2019a) and require further investigation in group contexts.

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English references are preserved exactly as in the original text.

Note: Figure translations are in progress. See original paper for figures.