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Original Article

Fairness versus favoritism in children☆

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Abstract

Children respond positively to individuals who favor them and also to individuals who are fair. The present studies examine the interaction between these two preferences by presenting children with two distributors who share resources with the child participant and another recipient. Children are asked whom they like better: the distributor who was unfair but favored the child participant or the distributor who was fair and showed no (or reduced) favoritism. In Study 1, we find that when fairness and favoritism are in conflict, children are split on whom they prefer. In Study 2, we find that placing children in a competitive context leads to a stronger preference for the distributor who favored the child participant. In Study 3, we examine whether children's preference for favoritism persists when both distributors gave the child the same number of rewards, but one distributor gave the child participant relatively more than the other recipient. In this situation, we find that children prefer the fair distributor. However, we again find that creating a competitive context reduces children's preference for the fair distributor. Finally we find that in a third-party context, children value fairness over generosity. Taken together, these results show how children balance competing concerns for fairness and favoritism.

Keywords: Reciprocity; Fairness; Inequity aversion; Alliances; Competition; Cognitive development

1. Introduction

Selecting social partners is a critical decision. One factor to consider is how each candidate partner has shared resources in the past. In particular, people tend to value at least two types of social partners—those who have preferentially shared with them in the past and those who have established themselves as fair. These values can be in conflict when favors from friends or family compromise equal opportunities for other people. Cronyism in companies (Brick, Palmon, & Wald, 2006) and favoritism within families (Sulloway, 1996) are examples of how generosity toward some people can conflict with fairness toward everyone. Research shows that young children exhibit favoritism by giving more resources to those who give resources to them (Fishbein & Kaminski, 1985; Libby & Garrett, 1974). At the same time, children also value fairness, and they prefer people who treat everyone equally—giving equal pay to those who do equal work (Damon, 1977; Sigelman & Waitzman, 1991). However, little is known about how children resolve conflicts between favoritism and fairness.

Well-established evolutionary principles can explain people's preference for favoritism. Functional theories of cooperation critically depend on discrimination and favoritism because, otherwise, selfish individuals accrue more resources at the expense of cooperators (Trivers, 1971). A key example is a reciprocity strategy such as the well-known tit-for-tat in which individuals cooperate discriminately only with other individuals who cooperate, allowing reciprocity to outcompete more selfish strategies (Axelrod, 1984). A similar logic is found in alliance building in which individuals prefer partners (friends) who have previously supported them in conflicts or who rank them highly (DeScioli & Kurzban, 2009b; DeScioli, Kurzban, Koch, & Liben-Nowell, 2011). Both reciprocity and alliance building are expected to cause individuals to prefer partners who show favoritism toward them. Several different evolutionary models show how favoritism can be evolutionarily stable (Panchanathan & Boyd, 2004; Trivers, 1971).

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Adults and children use reciprocity and alliances to guide their sharing and affiliation decisions. Adults seek out connections with individuals who have been kind or shown favoritism to them in previous interactions (Gurven, 2004; Rand, Arbesman, & Christakis, 2011). Children, too, use favoritism to guide their sharing decisions. By 3.5 years, children direct a third party to share more with someone who previously shared with the third party and to share more with their friends than others (Olson & Spelke, 2008). By age 6, children use favoritism to guide their own sharing —sharing more with those who have given them more resources (Fishbein & Kaminski, 1985; Libby & Garrett, 1974) and also sharing more with their friends (Birch & Billman, 1986; Moore, 2009). These results suggest that children and adults endorse favoritism—giving more based on reciprocity and alliances.

While adults and children clearly show favoritism toward others, they also respond negatively to unfairness based on the same practice of favoritism. Fairness requires everyone to be treated with impartiality. Adults respond negatively when someone distributes resources unequally, and they are willing to incur costs in order to reduce unfairness (Fehr & Schmidt, 1999). Young children and even infants are also concerned with fairness. Infants as young as 15 months differentiate between fair and unfair distributions (Geraci & Surian, 2011; Schmidt & Sommerville, 2011; Sloane, Baillargeon, & Premack, 2012). By the time they are 3 years old, children will distribute resources equally between two third parties (Olson & Spelke, 2008). By about age 4, children display negative emotional reactions to unfairness and will pay costs to reject unfair offers that would give them less than someone else (Blake & McAuliffe, 2011; LoBue, Nishida, Chiong, DeLoache, & Haidt, 2011). As children get older, they become willing to give resources to other people in order to reduce inequality (Blake & Rand, 2010; Fehr, Bernhard, & Rockenbach, 2008), though they will pay individuals unequally if one of them does more work (Damon, 1977; Hook & Cook, 1979). Additionally, recent research has revealed that 6- to 8-year-old children will even discard their own resource in the trash in order to avoid unfairness (Shaw & Olson, 2012).

Reciprocity (one form of favoritism) is aligned with fairness in two-person interactions, but these motives critically differ when there are three or more people (Shaw & Knobe, in press). As long as interactions are dyadic and repeated, reciprocity and fairness will be aligned because paying back someone's previous generosity will also maximize equality between oneself and the other person. This might be why reciprocity and fairness are often thought of as the same thing (Haidt & Joseph, 2008). However, once three or more people are involved in an interaction, reciprocity (as well as favoritism more broadly) and fairness make different prescriptions. Reciprocity demands that an individual pay back previous favoritism. Fairness directly contradicts this notion of preferential sharing—it requires people to prefer those who share equally between them and others, rather than those who share more with them than with others.

It is somewhat puzzling why children and adults would ever endorse fairness at the expense of favoritism given how beneficial favoritism can be. Not only does reciprocating favoritism from social partners ensure future cooperative interactions (Trivers, 1971), but sharing more with a privileged partner can also be an effective way to initiate new alliances. It is unclear why individuals would want to be fair rather than solidifying or initiating new alliances (see the General Discussion below).

The inherent tension between favoritism and fairness raises two related questions about children's developing social behavior. First, how do children make allocation decisions when favoritism and fairness conflict? Second, how do children judge other people's decisions about tradeoffs between favoritism and fairness? Here we investigate the second question by examining whether children prefer individuals who behave fairly or those who preferentially favor one individual over another. Favoritism and fairness make different prescriptions about who children should want to affiliate with. Favoritism implies that people will like those who share more with them than with others, whereas fairness implies that they will like those who share equally between themselves and others. Here we examine how these seemingly contradictory tendencies, preferential treatment *and* equal sharing, influence children's judgments about other people.

2. Study 1

Study 1 investigated whether children prefer a distributor who preferentially gives the child participant more than another child (favoritism) or one who gives equally to both the child participant and another child (fairness). We selected 6- to 8-year-old children because previous research has shown that, by this age range, children display adult-like patterns of fairness and favoritism (Libby & Garrett, 1974; Shaw & Olson, 2012), which made this an ideal age group to examine how these different factors influence children's preferences. In our experiments, children decided who they liked better of two distributors who they were told had made allocation decisions earlier that day, giving different numbers of toy erasers to two recipients. These distributors were represented by dolls so children could track who shared with whom.

Across three experimental conditions, we varied the distributors' allocations and whether the participant was one of the two recipients. One group of children was assigned to the Third-Party Fairness Condition in which they were asked if they liked a fair distributor or an unfair distributor who showed favoritism to one of two third-party recipients. In accordance with previous research on children's resource sharing (Lerner, 1974), we expected that children would prefer the equal distributor in this context. A second group of children was assigned to the Favoritism Condition. In this condition, both distributors gave unequally, each giving more to the child participant

than the other child recipient, but one distributor favored the child participant more. Here we predicted that children would prefer an individual who showed them more favoritism. We were particularly interested in this question: what happens when fairness and favoritism are put in conflict? To answer this question, a third group of children was assigned to the Fairness vs. Favoritism Condition in which they were asked who they liked better: a distributor who gave equally to the child participant and the other recipient or an unequal distributor who gave the child participant more resources. We predicted that children in this condition would choose the equal distributor less than those in the Third-Party Fairness Condition due to liking those who have given them more based on favoritism. Additionally, we predicted that children in the Fairness vs. Favoritism Condition would choose the distributor who showed favoritism less than those in the Favoritism Condition due to liking those who are fair.

2.1. Method

2.1.1. Participants

Participants were 72 children aged 6 to 8 years old: 24 in the Third-Party Fairness Condition (M=7 years, 5.5 months, S.D.=10 months; 16 females), 24 in the Favoritism Condition (M=7 years, 3 months, S.D.=11 months; 15 females), and 24 in the Fairness vs. Favoritism Condition (M=7 years, 3.5 months, S.D.=10.5 months; 12 females).

2.1.2. Procedure

Children first answered some unrelated questions so that they could be rewarded with erasers for "doing a good job." Participants were shown two distributors (see Fig. 1 in which the different payoffs across conditions are listed) and were asked which of the two distributors they liked better. We picked this dependent measure rather then looking at how children share resources with distributors in order to assess who children thought was a better partner. A similar method based on evaluating distributors was used by McCrink, Bloom, and Santos (2010) to examine children's understanding of generosity. This preference measure (who do you like better) may be more effective than examining children's resource sharing since children often feel compelled to share resources equally when they are given an equal number of resources to share with others (Hook & Cook, 1979; Olson & Spelke, 2008). The distributors gave out erasers, which were colorful and shaped like animals, sports balls, ice cream cones, etc., and have been used in previous research on children's concern with fairness (Shaw & Olson, 2012). These erasers are a desirable resource to children in this age group.

After answering the unrelated questions, children were assigned to one of the three conditions. In the Third-Party Fairness Condition, children were read the following:

> "Wow, you did such a good job answering those questions! We have one more question to ask you. Two boys named Mark and Dan did a great job answering questions earlier and

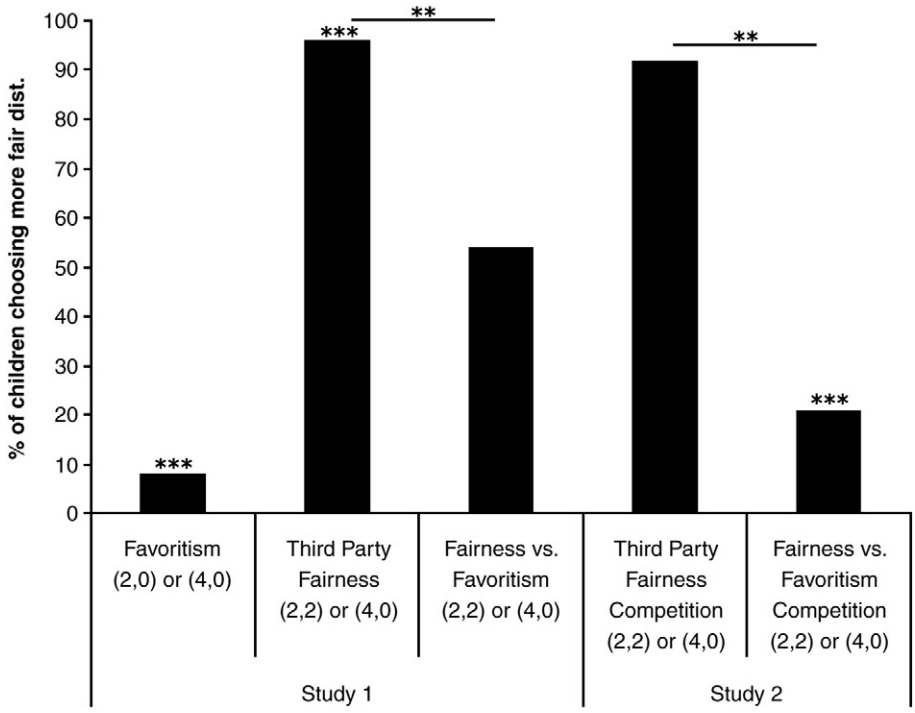

Fig. 1. The percentage of participants choosing the distributor who was fair (2, 2) in Studies 1 and 2. In the Favoritism Condition, we show the percent choosing the distributor who gave (2, 0). Below the conditions are the payoffs from the two distributors. The stars above the bars indicate that the result is different from chance (50%) with a binomial test, and the stars between bars indicate a difference between conditions based on a Yates-corrected χ^2 test. *p<.05; **p<.01; *** p<.001.

> we wanted to give them some erasers as a prize. Earlier today we asked two little boys named Brian and Paul to share erasers with Mark and Dan. Brian said he wanted to share two with Mark and two with Dan. Paul said he wanted to share four with Mark and none with Dan. Wow, that's great! They got some erasers."

The two distributors (Brian and Paul) were represented by two paper dolls. The order of the two distributors (Brian and Paul) was counterbalanced—for some children, Brian (the fair distributor) was presented first, and for others, he was presented second. Mark and Dan (the two nonpresent recipients) were represented by a square with an M on it and a square with a D on it written on two envelopes (i.e., two envelopes with M and D on each). When their names were mentioned, the experimenter pointed to the corresponding squares so the child would understand that the erasers placed there would go to Mark or Dan, respectively. The experimenter placed the erasers on the squares so that one envelope ended up with two erasers on the M and two erasers on the D, and the other envelope ended with four erasers on the M and zero on the D. Children were then asked, "Now who do you like better, Paul or Brian?"

The Favoritism Condition was similar except that the participant was one of the recipients and the payoffs were different:

> "Wow, you did such a good job answering those questions! So we want to give you some erasers as a prize. We also want to give some erasers to another little boy/girl named Kyle/Kelly [matched to child's sex] who also did a good job answering questions. You get to take these erasers home with you after. Earlier today we asked two little boys named Brian and Paul to share with you and Kyle/Kelly. Brian said he wanted to share two with you and zero with Kyle/Kelly. Paul said he wanted to share four with you and zero with Kyle/Kelly. Wow, that's great! You got six erasers."

Paul and Brian were again represented by paper dolls. The other recipient, Kyle/Kelly, was never present for the child's decision. The child participant's payoffs were represented by a black square, and Kyle's/Kelly's payoff was represented by a square with a K. These payoffs were represented on two identical envelopes each with a black square and a square with a K on it. The experimenter pointed to the corresponding squares when the experimenter said the child's name or Kyle's/Kelly's name. The experimenter placed the erasers in the squares so that one envelope ended up with two erasers on the black square (child participant's payoff) and zero eraser on the K (Kyle's/Kelly's payoff). The other envelope ended with four on the black square and zero on the K. When the experimenter said, "Wow, that's great!", the child participant's erasers were pushed forward to them. This was done to ensure that children understood that their decision about whom they liked would not affect their payoff. Children were then asked, "Now who do you like better, Paul or Brian?"

The Fairness vs. Favoritism Condition was the same as the Favoritism Condition except that Brian shared two with the child participant and two with Kyle/Kelly rather than sharing two with the child participant and zero with Kyle/Kelly. The other distributor, Paul, still gave four to the child participant and zero to Kyle/Kelly.

2.2. Results

A binomial test on the Third-Party Fairness Condition revealed that children liked the fair distributor (96%) more than a distributor who showed favoritism, $p<.001$. In agreement with previous research (Lerner, 1974), children appear to like those who share equally in a third-party context. A binomial test on the Favoritism Condition revealed that children also liked the person who showed them favoritism by giving them more (92%) as compared to someone who gave them less: $p<.001$. A binomial sign test on the Fairness vs. Favoritism Condition revealed that children showed no preference for the fair distributor (54%) over the one that showed them favoritism: $p=.838$. This result suggests that when children's concern with fairness conflicts with their affinity towards those who give them more, they are divided on what to do. Importantly, a Yates-corrected χ^2 test revealed that children liked the fair distributor less often in the Fairness vs. Favoritism Condition than in the Third-Party Fairness Condition: χ^2 (1, $N=48$)=9.00, $p=.003$. Additionally, a Yates-corrected χ^2 test revealed that children liked the distributor who favored them less often in the Fairness vs. Favoritism condition than in the Favoritism Condition: χ^2 (1, $N=48$)=9.70, $p=.002$ (Fig. 1). This suggests that children are less likely to favor someone who gives them more when the alternative is a fair distributor.

2.3. Discussion

These results demonstrate that children's liking of social partners is driven both by fairness and favoritism. In accordance with past research, children preferred a fair distributor to one who had shown favoritism when the children's own resources were not involved (Lerner, 1974). Children also preferred a distributor who gave them more to a distributor who gave them less. However, when children themselves received more resources because of unequal sharing, they were divided on what to do, presumably because they were influenced by both fairness and favoritism. That is, children showed reduced a preference for fairness because of favoritism and vice versa.

3. Study 2

In Study 2, we investigated the influence of competition on children's preferences for favoritism and fairness. Although fairness is often very valuable to people (Hook & Cook, 1979; Lerner, 1974), one context in which fairness appears to lose out to favoritism is in competition (Fershtman, Gneezy, & List, 2009). In situations such as warfare, video

games, and sports, people seek to gain more than others. Equality is fiercely avoided—and no one likes a tie. In order to investigate the influence of competition on children's evaluations, we presented children with a procedure similar to the Fairness vs. Favoritism Condition from Study 1, but here we told children that they were in a competition in which whomever received the most resources won. We predicted that in this Fairness vs. Favoritism Competition Condition, children would place a greater value on favoritism and so they would now pick the person who favored them rather than the fair distributor. This allowed us to investigate the role of competition in children's evaluations of resource distributors.

3.1. Method

3.1.1. Participants

Participants were 48 children aged 6 to 8 years old: 24 in the Third-Party Fairness Competition Condition (M=7 years, 6 months, S.D.=11 months; 12 females) and 24 in the Fairness vs. Favoritism Competition Condition (M=7 years, 0 months, S.D.=11 months; 15 females).

3.1.2. Procedure

The procedures for the Third-Party Fairness Competition Condition and the Fairness vs. Favoritism Competition Condition were the same as in the Third-Party Fairness Condition and the Fairness vs. Favoritism conditions in Study 1. The only difference was that children were told they were in a competition. In the Third-Party Fairness Competition Condition, after being told that the two third-party recipients would receive some erasers as a prize, children were told "But the erasers are part of a game. Whoever gets the most erasers wins. Do you think they want to win?" (All children answered yes to this question). Additionally, after saying, "Wow that's great! They got …", the experimenter added, "and Mark won". In the Fairness vs. Favoritism Competition Condition, after children were told that they could take the erasers home, they were told, "But the erasers are part of a game. Whoever gets the most erasers wins. Do you want to win?" (All children answered yes to this question). Additionally, after saying, "Wow that's great! You got…", the experimenter added, "and you won".

3.2. Results

A binomial sign test on the Third-Party Fairness Competition Condition revealed that children liked the fair distributor (88%) more than a distributor who showed favoritism: $p<.001$. In agreement with Study 1, children prefer those who share resources equally between third parties, and competition did not change this preference. A binomial sign test on the Fairness vs. Favoritism Competition Condition revealed that children preferred the distributor who showed them favoritism by giving them more (79%) as compared to the fair distributor: $p=.007$. Importantly, a Yates-corrected χ^2 test revealed that children choose the fair distributor less often in the Fairness vs. Favoritism Competition Condition than in the Third-Party Fairness Competition Condition: χ^2 (1, N=48)=21.62, $p<.001$ (Fig. 1). This result suggests that children are less likely to favor a fair distributor when one of the distributors favors them.

3.3. Discussion

We found that being placed in a competitive context made children prefer a distributor who favored them over a fair distributor. Children again clearly preferred the fair distributor to one who showed favoritism when resources were being distributed to third parties, even when children were told that the resources were part of a competition. However, when one distributor showed favoritism toward the participant in the context of a competition, children now preferred the distributor who favored them. It does not appear as though children were choosing the distributor who shared more with them because they thought doing so would increase their chance of winning the game they already played since children were informed that they had already won the competition before making their judgment. Instead, just being placed in a competitive context made children choose the distributor who favored them (see the meta-analysis after the results section of Study 3 for further discussion of the influence of competition). Additionally, this result militates against an explanation of Study 1 based on children simply being confused in the Fairness vs. Favoritism Condition. If children were simply confused by the setup, they should have responded at chance here also since the condition involved the same procedure; however, they now selected the person who favored them, suggesting that they were not simply confused in Study 1.

An interesting question left open from Studies 1 and 2 is whether children are swayed by favoritism in isolation (receiving relatively more than the other recipient from a distributor) or by the combination of favoritism and being given increased total benefits (receiving more resources overall from a distributor). In everyday interactions, these two factors are often intertwined—if someone favors an individual, they often give that individual more resources than he or she would give to someone else. However, in the laboratory, we can design situations that pull these two factors apart, examining the influence of favoritism when the amount of benefits given to the child participant by each distributor is held constant.

4. Study 3

In Study 1, we demonstrated that favoritism which included giving more overall resources to the child participant reduced children's tendency to value fairness. In Study 3, we extend these initial findings to ask whether favoritism alone (without providing more total benefits) would also decrease children's liking of the fair distributor. In the Benefits-Matched Condition, the fair distributor gave four resources each to the child participant and a nonpresent child (4, 4), while the distributor who favored the child participant again gave four resources to the child participant but gave zero to the other child (4, 0). In this condition, both

distributors gave the same amount of total resources to the child participant, allowing us to investigate how receiving *relatively* (rather than absolutely) more resources from a distributor influences whom children like.

Previous research indicates that even 5-year-old children show some sensitivity to relative contribution in terms of generosity—they think a poor puppet who shares relatively more of his resources is more generous than a rich puppet who shares absolutely more resources than the poor puppet, but relatively less of his resources (McCrink et al., 2010). Therefore, it is possible that children could track favoritism via relative distribution and use this to guide their preferences. However, since children strongly value fairness (Damon, 1977), we predicted that when children received the same number of resources in absolute terms from distributors, this would tip preferences in favor of fairness and children would now prefer the fair distributor over the one who showed them favoritism by giving them relatively more. We compared this condition to a replication of the Fairness vs. Favoritism Condition from Study 1.

While children may discount favoritism when overall benefits from distributors are equated, we again predicted that competition would increase the value placed on favoritism. Therefore, just as in Study 2, we examined how competition influenced whom children liked. In the Benefits-Matched Competition Condition, children were told that the erasers were part of a game in which whomever received the most erasers won. We predicted that competition would increase children's preference for favoritism, thus decreasing their liking of the fair distributor.

Finally, we wanted to examine if children have a preference for fair distributors over those who are more generous. Previous research has shown that children prefer to distribute resources equally even when doing so conflicts with generosity (Shaw & Olson, 2012). Therefore, it seemed plausible that children may sometimes like those who are fair over those who are generous. This condition was also important to ensure that children in our other conditions were valuing fairness rather than overall generosity (Charness & Rabin, 2002).

4.1. Method

4.1.1. Participants

Participants included 72 children aged 6 to 8 years old: 24 in the Fairness vs. Favoritism Condition (M=7 years, 2 months, S.D.=8.5 months; 13 females), 24 in the Benefits-Matched Condition (M=7 years, 2.5 months, S.D.=6.5 months; 12 females), 24 in the Benefits-Matched Competition Condition (M=7 years, 4.5 months, S.D.=8.5 months; 12 females), and 24 in the Third-Party Fairness vs. Generosity Condition (M=7 years, 8 months, S.D.=13 months; 8 females).

4.1.2. Procedure

The procedure for the Fairness vs. Favoritism Condition was a replication of the Fairness vs. Favoritism Condition from Study 1. The Benefits-Matched Condition was similar to the Fairness vs. Favoritism Condition from Study 1 (two children shared resources with the child participant and a nonpresent child), except that the fair distributor now gave four erasers to both the child participant and Kyle/Kelly rather than giving two to each recipient. The unfair distributor again gave four to the child participant and zero to Kyle/Kelly.

The Benefits-Matched Competition Condition was the same as the Benefits-Matched Condition except that after the children were told that they could take the erasers home, they were told, "But the erasers are part of a game. Whoever gets the most erasers wins. Do you want to win?" (All children answered yes to this question.) Additionally, after saying, "Wow that's great! You got…", the experimenter added "and you won".

The procedure for the Third-Party Fairness vs. Generosity condition was the same as the Third-Party Fairness Condition from Study 1 except that the unfair distributor now gave two to one of the children and six to the other. The fair distributor still gave two to each, giving less than the unfair distributor but giving an equal amount of erasers to both.

4.2. Results

Replicating the Fairness vs. Favoritism condition from Study 1, a binomial sign test on the Fairness vs. Favoritism Condition revealed that children showed no preference for the fair distributor (46%) over the one that favored the child participant: p=.838. A binomial sign test on the Benefits-Matched Condition revealed that children preferred the fair distributor (83%) over the distributor who gave them relatively more than the other recipient: p=.002. Importantly, a Yates-corrected χ^2 test revealed that children were more likely to prefer the fair distributor in the Benefits-Matched Condition as compared to the Fairness vs. Favoritism Condition: χ^2 (1, N=48)=5.829, p=.016 (Fig. 2). This result suggests that children showed a stronger preference for the fair distributor when favoritism did not entail increased total benefits.

A binomial sign test on the Benefits-Matched Competition Condition revealed that children showed no preference for the fair distributor (38%) over the one that gave the child relatively more: p=.31. Importantly, a Yates-corrected χ^2 test revealed that children were less likely to choose the fair distributor in the Benefits-Matched Competition Condition than in the Benefits-Matched Condition: χ^2 (1, N=48)=8.71, p=.003 (Fig. 2). These results suggest that children increase the value they place on favoritism alone (getting relatively more resources) and/or decrease their preference for fairness when they are placed in a competitive context. In further support of this result, we conducted a meta-analysis of our three studies by comparing results from the Fairness vs. Favoritism conditions from Studies 1 and 3 to the Fairness vs. Favoritism Competition Condition from Study 2, and we found that children prefer those who give them more in competitive contexts (19 out of 24, 79%) as compared to

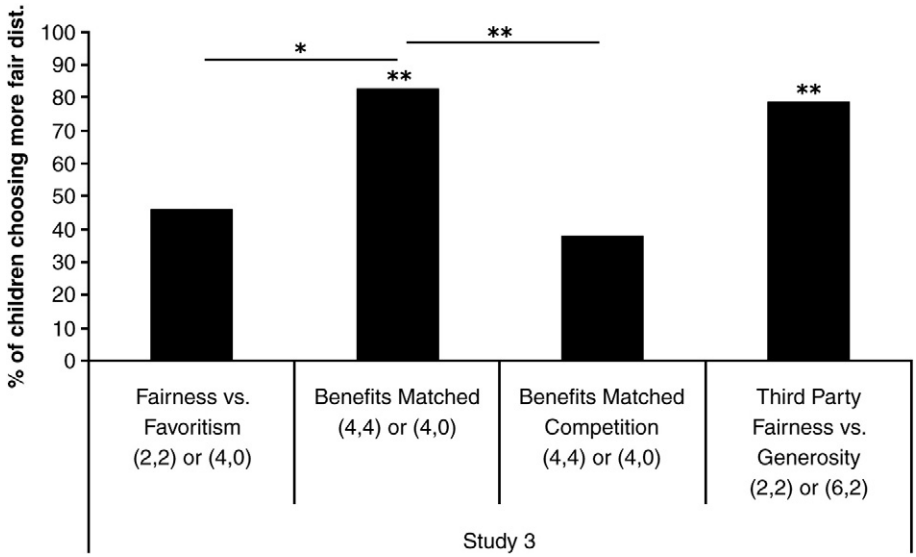

Fig. 2. The percentage of participants in Study 3 who chose the distributor who was fair by giving the same amount to both recipients. Below the conditions are the payoffs from the two distributors. The stars above the bars indicate the result is different from chance (50%) with a binomial test, and the stars between bars indicate a difference between conditions based on a Yates-corrected χ^2 test. *p<.05; **p<.01.

noncompetitive ones (24 out of 48, 50%): χ^2 (1, N=72)= 4.51, p=.034.

Finally, a binomial test on the Third-Party Fairness vs. Generosity Condition revealed that, in a third-party context, children preferred a fair distributor (19 out of 24, 79%) to one who generously gave more overall resources: p=.007. This result suggests that children value fairness over generosity, at least in this context.

4.3. Discussion

These results demonstrate that children are influenced by both fairness and favoritism and that controlling for total benefits from distributors pushes children to value distributors who are fair, whereas competition pushes them toward valuing distributors who show favoritism. We found that favoritism in the absence of more total benefits did not make children like the fair distributor less—they liked the fair distributor more than the one who gave them relatively more. This result further refutes the idea that the chance results obtained in the Fairness vs. Favoritism conditions from Study 1 and Study 3 were a result of children being confused. If anything, the Benefits-Matched Condition should have been more confusing as this condition involved more total resources. Yet, children were not confused in this case and systematically preferred the fair distributor, suggesting that children really are weighing fairness and favoritism when making their decision.

Further supporting this interpretation, when another group of children was asked to make the same decision but to think of the situation as a competition, they showed a substantially reduced preference for the fair distributor. As in Study 2, just being placed in a competitive context was enough to increase the value children placed on favoritism alone. This might be because in competitive contexts alliance-building motives are more prominent since one must ready oneself for possible conflicts by affiliating with one's allies. These results are consistent with research in adults suggesting that people are more tolerant of unfairness when they are placed in a competitive context (Fershtman et al., 2009). We also found that children liked distributors who were fair rather than ones who were generous and gave more overall resources, consistent with previous research on children's sharing behavior (Shaw & Olson, 2012).

5. General discussion

These studies demonstrate that children use both fairness and favoritism to decide which social partners they prefer. Study 1 demonstrated that although children prefer a fair distributor to an unfair distributor in a third-party context, they are more conflicted about who they prefer when they are deciding between a fair distributor and an unfair distributor who favors them. We also found that while children prefer a distributor who gives them more resources to one who gives them fewer resources when neither distributor shares fairly, they show decreased preference for a distributor who gives them more resources when they are forced to decide between the distributor who favors them and one who shares fairly. In Study 2, we found that this tendency to prefer the distributor who favors the child participant increases when children are placed in a competitive context. Study 3 demonstrated that children prefer a fair distributor to one who gives them relatively more resources when both distributors give the same amount of resources to the participant. However, children are much more likely to prefer a distributor who favors them when they are placed in a competitive context. Additionally, we found that when children themselves are not the recipients of

unfairness, they prefer fair distributors to unfair ones, even if the unfair distributor is more generous overall. These results reveal that children have two distinct concerns that independently influence their social preferences: a concern with favoritism (liking those who give them more) and a concern with fairness (liking those who distribute equally).

This research highlights a disjunction between the preference for favoritism (reciprocity and alliance building) and the preference for fairness and clarifies why a preference for fairness is challenging to explain. Whereas the benefits of favoritism are clear, it is unclear why people value fairness given that it interferes with their ability to cultivate relationships with those people who are especially likely to benefit them in the future. There are several possibilities that could explain why a concern with fairness may have evolved.

One possibility is that fairness evolved to promote mutualistic cooperation (André & Baumard, 2011; Baumard, André, & Sperber, in press; Fehr et al., 2008). A recent model by Baumard et al. (in press) illustrates the evolutionary logic of these accounts. The authors argue that cooperation can be beneficial by yielding non-zero-sum gains, but can also be risky because defectors, those who take the benefits of cooperation without providing reciprocal benefits, often do better than cooperators (Trivers, 1971). However, cooperation can be a viable strategy when partner choice is possible if cooperators can identify cooperators as well as avoid defectors. To accomplish cooperation, an individual must solve a problem: overcoming the temptation to defect in any single interaction, which would cause that individual to lose out on the long-term benefits of cooperation. Baumard et al. (in press) suggest that fairness evolved to solve this problem—positing that a motivation to be fair causes individuals to forgo short-term benefits for themselves in favor of being seen as good long-term cooperative partners. These accounts of fairness can explain why individuals may choose to be unselfish themselves and why they favor generous over selfish partners.

However, there are a few problems with models suggesting that fairness evolved to promote cooperation. First of all, it is not clear why a sense of fairness is necessary to restrain short-term self-interest in order to extract the long-term benefits of cooperation (for two recent models of cooperation that do not require a sense of fairness, see Delton, Krasnow, Cosmides, & Tooby, 2011; Rand et al., 2011). Second, while these models can explain why an individual may like people who are generous rather than selfish, they do not explain what happens in situations, like those in our experiments, in which three or more agents are involved. In these interactions, fairness can now conflict with generosity toward a specific agent (favoritism).

If fairness is about promoting cooperative interactions, then what should people value in the context of our experiments? These cooperative models of fairness offer an explanation for why an individual might share equally with a partner in dyadic interactions, but it is not clear whether these models can explain how people allocate resources among others in three-player interactions. That is, the models explain why Alice might divide resources equally between herself and Betty, but they do not readily explain why Alice might give Betty the same amount as Cindy. Moreover, they do not offer clear predictions about whether Cindy would prefer Alice to favor Cindy, or to give equally to Cindy and Betty.

The reciprocity models should predict that in our experiments children will prefer the person who showed them favoritism (at least when both distributors shared the same number of resources) since this person is as equally generous as the other distributor and is likely to give more benefits to the participant in the future than the fair distributor. However, we found that a substantial number of children preferred the fair distributor to the one who showed favoritism. Moreover, the results from the Third-Party Fairness vs. Generosity Condition from Study 3 are even more problematic for the reciprocity model. Here, children preferred distributors who gave fewer overall resources but were fair, to distributors who gave more overall resources but were unfair. This result fits with recent research that suggests that children will discard a resource that could go to other people rather than create unfairness (Shaw & Olson, 2012)—another observation that contradicts models based on reciprocity and cooperation. If fairness evolved to promote cooperation, it is unclear why individuals like partners who are fair over partners who are more generous overall. Thus, while fairness might promote cooperation in some contexts, it seems to not be well designed for this specific purpose.

An alternative hypothesis is that fairness functions to signal impartiality—that an individual does not value one individual more than another. Individuals feel envious and respond negatively to other people having more resources (Frank, 2005), and this may prompt them to condemn people who are responsible for inciting this envy. Such condemnation of unequal sharing may be particularly important in alliance contexts in which preferential support between allies poses a threat to other people outside of the alliance (Snyder, 1984). One reason that people may judge an individual for showing partiality is that preferential sharing is one effective way to create new alliances and these new alliances can pose a threat to other people. Alliances are an important part of winning conflicts because the number of allies is a critical determinant of fighting outcomes (Adams & Mesterton-Gibbons, 2003). Additionally, the formation of alliances is often zero-sum—if an individual who is not one's ally forms a new alliance, that individual's position becomes stronger and one's own position becomes weaker (Liska, 1962). An individual's attempt to form new alliances therefore represents a threat to all individuals who are not part of that individual's alliance network (DeScioli & Kurzban, 2011). Thus, third parties may respond negatively to partiality (e.g., unequal resource sharing) in order to prevent new alliances from forming, and individuals may develop

their own sense of impartiality (fairness) in order to avoid these negative reactions (for a similar argument about morality, see DeScioli & Kurzban, 2009a, in press).

The impartiality model seems consistent with the observations reported here. Children want resources for themselves and like those who give them more, which is why they like the distributor who shows them favoritism. However, this preference is balanced out by a competing concern with appearing to prefer impartial distributors rather than appearing to engage in potentially threatening alliance building with an unfair distributor. This can explain why fairness can cause children to choose fair (impartial) distributors over those who might be better cooperators toward them. If the goal of fairness is to appear impartial in order to avoid negative reactions based on envy or the threat of new alliances, then individuals should endorse fair outcomes even in cases in which fairness conflicts with their own material interests and with generosity because such unfairness (partiality) would still incite these negative reactions.

If fairness involves avoiding the appearance of partiality, then it should be possible to remove concerns with unfairness by removing the possibility of partiality. Previous research shows that adults and children dislike partiality and value impartiality in many contexts (Mills, Al-Jabari, & Archacki, 2012; Mills & Keil, 2008; Tyler, 1994). They also appear to understand that partiality can bias other people's judgments (Mills & Grant, 2009). Indeed, although fairness is often referred to as inequity aversion, it might be better understood as *partiality aversion*—people dislike when other people show partiality. For instance, adults are more willing to accept unfair allocations if the outcome was achieved using an impartial procedure such as a random lottery (Bolton, Brandts, & Ockenfels, 2005). If fairness is rooted in avoiding partiality, then using unbiased (i.e., impartial) procedures should cause children to endorse unequal outcomes, and children should opt for such procedures rather than wasting resources to avoid unfairness. This view would also predict that other factors like the amount of work done by the recipient, which reduce people's tendency to see inequality as unfair (Damon, 1977), would also reduce people's tendency to say that these forms of inequality demonstrate partiality. If these predictions of the impartiality model are supported by the data, then this model has the potential to unite procedural and distributive justice in terms of a single underlying motive—wanting to avoid partiality.

Our research also demonstrates that competition increases people's tendency to like those who show them favoritism even at the expense of liking those who are fair. It is difficult to conclude from our first-party situations, where the child is one of the recipients, whether competition increases the value placed on favoritism or decreases the value placed on fairness. However, our third-party condition from Study 2 seems to support the former suggestion since competition did not decrease children's liking of a fair distributor when two third parties were receiving resources. If competition did decrease children's preference for fairness, then they should have shown a reduced preference for the fair distributor even in the third-party context.

Competition likely increases individuals' preference for favoritism in at least two ways: by increasing the value they place on recruiting strong allies and by increasing the value of having relative advantage. Competition can often engender hostility, and by the time children are 6 years old, they expect more antagonistic conflicts between groups when they are competing over resources (Rhodes & Brickman, 2011). When conflicts are probable, individuals may be more likely to seek out allies since fighting outcomes are strongly dependent on the number of one's allies and the quality of those alliances (DeScioli & Kurzban, in press). Our competition manipulation made it salient that another individual was a competitor, which could have prompted children's alliance systems to assess who is likely to be an ally—in this context, the person who had just shown them preferential treatment. Another reason that competition may increase the value placed on favoritism is by increasing the value people place on relative advantage. Although people may have some desire to have relatively more than their neighbors in noncompetitive situations (Frank, 2005), having relatively more is especially important in competitive contexts in which interactions are almost always zero-sum—when someone else gains, someone else loses. If competition causes individuals to want relatively more than others, then they should like the person who helped them achieve this goal by showing them favoritism. In noncompetitive situations, these desires for alliances and relative advantage should have a less strong influence on who children like since they are not preparing for conflict and thus can focus on demonstrating the value they place on impartiality (fairness) by liking the distributor who was impartial.

Favoritism has received a lot of attention from evolutionary researchers and is an important part of human psychology with clear evolutionary functions (DeScioli & Kurzban, 2009b, in press; Trivers, 1971). The function of fairness is much less clear. Our findings show that fairness motivates children to show less of a preference toward those who favor them. However, these fairness concerns are attenuated in competitive environments, which might activate psychological systems for alliance building and relative advantage at the expense of fairness. Future research can examine what other conditions reduce or increase the weight people place on fairness versus favoritism. These investigations, in turn, might shed light on the social strategies underlying the human sense of fairness.

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