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Judging judges: How do children weigh the importance of capability and objectivity for being a good decision maker?

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Two studies examined developmental differences in how children weigh capability and objectivity when evaluating potential judges. In Study 1, 84 6- to 12-year-olds and adults were told stories about pairs of judges that varied in capability (i.e., perceptual capacity) and objectivity (i.e., the relationship to a contestant) and were asked to predict which judge would be more accurate. Participants generally preferred capable over incapable judges. Additionally, 10- and 12-year-olds adjusted their preferences for the most capable judge based on objectivity information. Seventy 6- and 8-year-olds participated in Study 2, which was similar to Study 1 except that the judges could both seem incapable unless children understood how different decisions require different kinds of perceptual capabilities. While 8-year-olds chose judges based on the relevance of the perceptual capability, 6-year-olds struggled, seeming to be distracted by the valence of the judges' relationships to the contestants. Overall, these results support that there are important shifts in how children evaluate decision makers from early to middle childhood.

In everyday life, we must often rely on others acting as judges, evaluating various kinds of information to come to a decision about different kinds of events and competitions, from court cases and tenure promotions to swimming competitions and singing contests. For example, in politics, people living in democratic countries elect politicians for local and national positions hoping that these politicians will make decisions that represent the people's interests. For athletic events, the International Olympic Committee carefully selects judges to make decisions about the outcomes of their various sporting events. Even in elementary school classrooms, judges are sometimes appointed: for instance, teachers sometimes request members from the community to serve as judges for their students' science fairs.

Although we must rely on others to make decisions, it is clear that not all candidates to be decision makers are equally qualified to have that responsibility. Some may lack the relevant experience necessary to understand the criteria required for making a sound judgement, or they may lack the mental or physical capacity to evaluate what they are

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judging. Others may have personal conflicts that interfere with their objectivity. Because it is important for us to ensure that accurate decisions are likely to be reached, it is useful to evaluate the strengths and weaknesses of potential decision makers to determine who will be the most accurate and objective judge.

When assessing potential decision makers, one of the first characteristics we consider is their *capability* to make accurate decisions. Indeed, in order to be a good decision maker, one must be capable of both understanding the problem and assessing the evidence to reach a reasonable decision. Many factors can influence whether someone is capable, including background knowledge, experience, and access to the information. But just because someone is capable of making a decision does not guarantee that he or she will actually make accurate decisions: it is possible for biased motives, apathy, and other factors to influence the quality of the decisions made. Although there are many characteristics that may affect the quality of decisions made by otherwise capable decision makers, their objectivity is of the utmost concern. For instance, recturning to example of electing political officials, voters are often concerned about candidates' relationships with companies that have financially contributed to the campaign and how this may influence whether decisions can be made objectively. People not only anticipate deceptive actions in politics (McGraw, Lodge, & Jones, 2002); they also anticipate deception or manipulation in many other situations where there are clear ulterior motives (Fein, 1996). In general, people recognize situations in which others may be affected by a lack of objectivity. Therefore in addition to capability, in the current study we also focus on the importance of *objectivity*: whether a judge is impartial enough to make accurate decisions.

At least in some situations, adults can recognize the importance of both capability and objectivity in potential decision makers. For instance, when evaluating capability, adults prefer people with relevant knowledge or expertise as well as the perceptual capacity to evaluate the criteria under consideration (e.g., able to see the finish line of a running race; Mills & Keil, 2005; 2008). When evaluating objectivity, adults also prefer people who seem to be open to multiple outcomes (thus seeming unlikely to be biased towards a specific response) and have a history of judging fairly. Moreover, adults think that in most cases good judges should not have personal connections (either positive or negative) to the contestants they are judging in order to reduce the chances of biased motives (e.g., deception or bias; Mills & Keil, 2008). Thus, at least when adults are comparing someone who has one important characteristic for making decisions (e.g., objective) to someone who does not have that characteristic (e.g., not objective), adults prefer the person with the important characteristic. When multiple characteristics are contrasted, however, the task of deciding whom to trust becomes more difficult. That said, at least in circumstances in which a specific capability is needed in order to make a decision (e.g., in order to determine the winner of a singing contest, a judge must be able to hear), it is clear that one should first focus on whether the judge is capable of making a decision before then considering whether the judge is also objective enough to make an accurate decision.

So what do children understand about capability and objectivity? Most of the research to date has examined children's understanding of these characteristics separately. To examine how children make these types of trust decisions, for instance, children have been presented with pairs of informants with opposing characteristics and asked which informant they prefer or trust. In general, this research has found that even preschoolers have some sense of the importance of the capability to make accurate decisions. For instance, they recognize that some people have greater expertise (or background

knowledge) in a domain than others (Lutz & Keil, 2002), recognizing the expert as more capable of providing accurate information. Additionally, preschoolers trust labels for new objects given by knowledgeable speakers as opposed to ignorant ones, presumably recognizing that the latter are not capable of providing reliably accurate information (e.g., Birch & Bloom, 2003; Jaswal & Neely, 2006; Koenig & Harris, 2005; Sabbagh & Baldwin, 2001). Preschoolers also understand that it is important to have access to the information by employing the appropriate perceptual ability to determine what kind of object is hidden in a container. For instance, they recognize that, if two objects can only be distinguished by touch, someone needs to reach in the container, not look, to determine which object is inside (Nurmsoo & Robinson, 2009; O'Neill & Gopnik, 1991). In the elementary school years, their understanding of what is important for being capable of making accurate decisions develops (e.g., Danovitch & Keil, 2007); for instance, they recognize that judges need to use the right senses to evaluate information, and they prefer judges with appropriate expertise to judges without (Mills & Keil, 2008).

Understanding the importance of objectivity is a bit more complicated. In fact, there are some major developmental differences in understanding what influences people's ability to make accurate, unbiased decisions. For example, when predicting who will be the most accurate judge, children around 8 years old generally are concerned about the objectivity of judges with any sort of relationship to contestants (e.g., best friend, worst enemy), preferring judges with no relationship whatsoever (e.g., neutral). In other words, they focus on whether the judge is objective or biased. But a judge can be biased in relation to someone else in at least two different ways: someone can be biased in a positive direction, in *favour* of someone else (e.g., choosing his best friend as the winner of a contest over everyone in the contestant pool), or in a negative direction, *against* someone else (e.g., choosing anyone in the contestant pool but his enemy as the winner). Younger children seem to detect negative bias before positive bias. For instance, younger children are concerned about judges with negative relationships (e.g., enemy), but interestingly, they think judges with positive personal relationships to a contestant will be more accurate judges than those with no personal connection to any contestant (e.g., a friend will be more accurate than a neutral judge, Mills & Keil, 2008). Even when evaluating the accuracy of a judgement that has already taken place, 6-year-olds are more likely to detect the possibility of a bad judgement when the decision is made by an enemy than by a friend (Mills & Grant, 2009).

This research suggests that children younger than age 8 have an incomplete understanding of the importance of objectivity. In fact, in some cases, they seem to evaluate potential decision makers on their *valence* – how good or bad they seem to be overall. In other words, a judge with a bias against someone may be seen as globally negative, whereas a judge with a bias towards someone may be seen as globally positive. This possibility fits with other related research. For example, 4-, 5-, and 6-year-olds think that someone who has a positive trait (e.g., niceness) will perform better in other unrelated situations (e.g., intelligence, athleticism) than someone who has a negative trait (e.g., Cain, Heyman, & Walker, 1997; Heyman, Dweck, & Cain, 1992; Stipek & Daniels, 1990). Also, 5- to 6-year-olds choose partners for a future game based on perceived niceness as opposed to choosing based on how likely the partner is to have a useful skill for that game (which 7- and 8-year-olds understand; see Feldman & Ruble, 1988). Thus, when it comes to evaluating decision makers, younger children seem to prefer someone who they think is nice (e.g., someone who is friends with a contestant in a contest) over someone who they think may be mean (e.g., someone who is enemies with a contestant in a contest; Mills & Keil, 2008).

Generalizing based on valence may be extremely problematic when children are evaluating decision makers. In fact, young children may be inclined to trust judgements from someone who has some sort of 'positive' characteristic (e.g., friends with someone in the contest he could judge) even if that person is lacking in capability (e.g., does not have the perceptual capacity to evaluate the criteria necessary for making the decision). Yet this is something children encounter in everyday life: for instance, a child may meet someone who seems friendly and nice who makes inaccurate or biased decisions. Are young children, then, more inclined to accept decisions from someone with positively valenced biases, even if that person has major flaws with respect to capability or objectivity? Given that most of the research to date has examined children's understanding of the importance of specific characteristics in decision makers one at a time, very little is known about how children evaluate decision makers when information about multiple characteristics is available. Examining this issue should provide important insight into what changes across development in how children evaluate testimony.

Therefore, the two studies presented here examine developmental differences in how children weigh capability and objectivity when evaluating potential judges. For each study, children heard several different contest scenarios. In each contest scenario, children were told about a pair of judges, and each judge varied along two dimensions: capability (their perceptual capacity to experience the criteria for judging the contest: whether or not they could see, and whether or not they could hear) and objectivity (the relationship to a contestant: friend, enemy, or neutral). For instance, children might hear about a running race and two potential judges: one person who could see and did not know anyone in the contest, and one person who could not see and was friends with someone in the contest. For each contrast pair, children were asked to predict which of two potential judges would do a better job selecting who best met the criteria for winning a particular contest, and then indicate the strength of their preference. We chose to focus on this particular aspect of capability because there is evidence that even preschoolers recognize the relationship between perception and knowledge (e.g., Brosseau-Liard & Birch, in press; Nurmsoo & Robinson, 2009), and 6-year-olds recognize the importance of perception for decision making (Mills & Keil, 2008). By focusing on a dimension of capability that should, in theory, be easy for the youngest children in our studies to detect (6-year-olds), we should be increasing the likelihood that they will focus on capability and will *not* be influenced by the valence of the objectivity information. In other words, by examining the indicator of capability that young children find most obvious, we are getting the most conservative evidence of how much valence affects their decisions regarding whom to trust.

By combining information about the presence or absence of capability and objectivity in different ways, we can gain a sense of what changes across development in children's ability to focus on capability when predicting who will be the most accurate decision maker. Depending on the weight children placed on the different characteristics, there were five potential patterns of results. One possible pattern is that children would show no consistent preferences between the judges. A second possible pattern is that children would focus on perceptual capability no matter the situation; thus, they would think that the most important characteristic is the ability of the judge to perceive the contest, regardless of that judge's relationship to the contestants. A third possible pattern is that children would focus on the motivation of the judges, thus choosing the most neutral judge regardless of capacity. A fourth possible pattern is that children would focus on valence, preferring the judge with the most positive relationship to a contestant. Finally, a fifth possible pattern, and the one representing the most sophisticated understanding,

is that children would focus primarily on capability, but that they would also adjust the strength of their preference depending on whether the most capable judge was also the most objective.

In theory, in this context, children should be able to focus mostly on the capability characteristic of the decision makers over the objectivity or the valence of the judges when capability is the most important dimension to consider. Past research has found that even 6-year-olds recognize the necessity of having the perceptual capability to evaluate contest criteria (Mills & Keil, 2008), so it is possible that even when children are deciding between potential judges with multiple characteristics, they will focus mostly on capability, preferring capable judges to incapable ones. Furthermore, given that by about age 8, children tend to recognize the importance of objectivity in decision making, it is possible that while they will focus on the necessary capability when selecting judges, they will show a stronger preference for judges who are both capable and objective than for judges who are capable but may be biased. Alternatively, it is also possible that while older children will be able to focus on capability (and possibly adjust the strength of their choices based on objectivity), young children will focus on the valence. Past research has found that children and adults generally detect characteristics related to intentions of being nice and fair more quickly and easily than characteristics related to competence and expertise (e.g., Ybarra, Chan, & Park, 2001). Also, children under age 7 or so sometimes have trouble thinking about two dimensions of the same item, object, or person at the same time (e.g., Piaget, 1954). Thus, young children may first notice valence and then not be able to give adequate focus to whether a judge is capable of making a decision.

STUDY 1

Overview

In Study 1, children and adults were presented with six different contrasts between judges. For four of the contrasts, the goal was to see if children understood that perceptually capable judges are better than incapable ones, regardless of objectivity or valence. Thus, for each contrast, one judge was capable of perceiving the information necessary to make an accurate judgement and the other incapable. Information regarding each judge's objectivity was also provided: a neutral judge was always contrasted with either a judge who was friends with a contestant or a judge who was enemies with a contestant, but sometimes the neutral judge was capable and sometimes he was incapable. By examining the preference for these four contrasts, we could examine developmental differences in whether children's decisions were guided by capability, objectivity, or valence. For instance, if a child was told about a capable enemy contrasted with an incapable neutral judge, she might indicate a preference for the neutral judge because he is not an enemy (thus, focusing on either valence or objectivity), or she might indicate a preference for the enemy because he is perceptually capable (thus, focusing on capability). Looking at the patterns across contrasts allowed us to determine which characteristic participants of each age group were focusing on most regularly.

Two additional contrasts were used to investigate how much children understood about the importance of the appropriate perceptual capacity for making judgements. In the previous contrasts, if a child consistently focused on capability (preferring the judge who was perceptually capable over the one who was not), it is possible that the child did not have a full understanding of the importance of *relevant* perceptual capability:

Table 1. Possible patterns of results for Study 1

Contrasts		Preference			
Most capable judge	Least capable judge	Capability	Objectivity	Valence	Capability adjusted by objectivity
		Most capable judge has no impairment (i.e., capable)			
Neutral	Friend	4	4	1	4
Neutral	Enemy	4	4	4	4
Friend	Neutral	4	1	4	3
Enemy	Neutral	4	1	1	3
		Most capable judge has unrelated impairment (i.e., acceptable)			
Neutral	Friend	4	4	1	4
Enemy	Neutral	4	1	1	3

Note. Higher numbers indicate a stronger preference for the judge who is perceptually capable of judging the contest (listed first in the pairing), while lower numbers indicate a stronger preference for the other judge in the pair.

children could merely be choosing the judge without a perceptual impairment. Thus, for these two contrasts, each judge had a perceptual impairment, but only one was relevant to the contest at hand. Children then had to determine which judge was acceptable (even if neither were ideal). Although there were many different contrasts that could be used, we chose to focus on pitting capability and valence given that previous research suggested that children might shift from focusing on valence to focusing on relevant capability. In order for children to answer these two contrasts correctly, they had to ignore which judge had the most positive relationship to the contestants (the friend for the first contrast and the neutral judge for the second contrast) and focus on which judge was most capable (i.e., acceptable).

Table 1 explains the different potential patterns of findings for these contrasts (described in more detail in 'Design' section), depending on children's intuitions regarding the characteristics most important for being a good judge. The number refers to the preference for the most capable judge on a 4-point scale, with 4 indicating a preference for the most capable judge (either perceptually capable or with an unrelated but acceptable impairment, regardless of objectivity), and 1 referring to a preference for the other judge.

Method

Participants

Eighteen 6-year-olds (M_{age} = 6.48; SD = .82; 8 males, 10 females), 16 8-year-olds (M_{age} = 7.92; SD = 1.03; 8 males, 8 females), 17 10-year-olds (M_{age} = 10.05; SD = .62; 9 males, 8 females), and 15 12-year-olds (M_{age} = 11.85; SD = .72; 7 males, 8 females) participated in this study. The sample was gender balanced and reflected the distribution of ethnic groups in the community: approximately 75% Caucasian, 12% Asian American, 6% African American, and 7% other races, with approximately 10% indicating Hispanic or Latino origin. Children were recruited from Dallas-area elementary schools and were tested in a quiet room; each session took about 15 min.

Additionally, 18 adult undergraduate students (M_{age} = 22.13; SD = 2.10; 7 males, 11 females) in the Dallas area participated in the same study in a survey format.

Design

Children were told six stories about different kinds of contests with clear criteria for winning (running race contest, spelling bee, tower building contest, long jump contest, counting contest, whistling contest) and asked which judge would be most likely to pick the person who met the criteria for winning the contest. For each story, children were presented with two potential judges that each had two characteristics that varied: the relationship to a contestant (i.e., objectivity: friend, enemy, or neutral), and their perceptual capacity to experience the criteria for judging the contest (i.e., capability: capable or incapable of perceiving that information). The perceptual capacity necessary for judging varied between contests so that half of the contests required sight (e.g., running race contest) and half required hearing (e.g., spelling bee).

Six different contrasts between characteristics were used. Four different contrasts involved a perceptually capable judge with no impairment paired against a perceptually incapable judge. For two of these four contrasts, the neutral judge was perceptually capable of receiving the information necessary to determine who won the contest, whereas the partial judge (friend or enemy) was perceptually impaired (henceforth Capable Neutral vs. Incapable Friend and Capable Neutral vs. Incapable Enemy). In the other two of these four contrasts, it was the partial judge (friend or enemy) who was perceptually capable, while the neutral judge was impaired (Capable Friend vs. Incapable Neutral and Capable Enemy vs. Incapable Neutral).

Two additional contrasts pitted two judges who each had a perceptual impairment. For these two contrasts, a neutral judge with an unrelated (and thus acceptable) perceptual impairment was contrasted with a friend with a related perceptual impairment (Acceptable Neutral vs. Incapable Friend), and an enemy with an unrelated perceptual impairment was contrasted with a neutral judge with a related perceptual impairment (Acceptable Enemy vs. Incapable Neutral).

The stories were placed into four different pseudo-randomly chosen orders. See Appendix for additional information about the contrasts and a sample story.

Procedure

Prior to testing, participants were asked if they had ever seen or been in a contest before. The experimenter told the children that they were going to hear stories about a classroom of students that was participating in some contests and answer a few questions about the decisions in those contests. For each story, children were asked which of two judges would be most likely to pick the person who met the criteria for winning the contest (e.g., most likely to pick the person who crossed the finish line first in the running race; most likely to pick the person who spelled the most words right for a spelling contest). For instance, for a story about a running race, children would be told about the race, introduced to the two judges, and asked, 'Who do you think would be most likely to pick out the person who crossed the finish line first?' After the participants indicated their judge preference, they were asked to rate the strength of their preferences by indicating whether that judge would be 'a lot better or a little better' than the other judge, with 'a little better' being the last statement they heard. This was to ensure that if children simply repeated the last option they heard, 'a little better', their ability to differentiate between the two judges would be underestimated. Additionally, by allowing participants

to indicate the strength of their preference (whether one judge was really or sort of better than the other), we could examine whether participants had a stronger preference for the most capable judge when he was also objective than when he was not. See Appendix for a sample story and the questions children were asked.

For each story, three drawings were placed on the table to help maintain attention, but importantly, these drawings did not provide information about the outcome of the event. One drawing was used to refer to the topic of the story (e.g., image representing a running race). Two other drawings were used to represent the two judges. Perceptual incapacity was shown by a stick figure wearing a blindfold (cannot see) or earmuffs (cannot hear). Relationships were indicated by facial expressions: the enemy had a frowning expression, while the neutral judge and the friend had a slightly smiling expression. A card was also placed with the word 'friend' or 'enemy' under the appropriate judge picture; although some children in our study were not yet able to read the relationship label, the presence of the card helped by always marking the connected judge.

Throughout the interview, children were asked fact-check questions to make sure they understood the characteristics of each judge. Although the experimenter kept track of children's responses, each session was also recorded on a digital voice recorder.

Results

Analyses focused on three issues. First, we examined whether participants focused on capability over objectivity or valence when choosing a judge when only one judge was clearly perceptually capable. Second, we examined whether participants had a stronger preference for the capable, objective judge than the capable, biased judge. Finally, we examined whether participants focused on capability when choosing a judge when one judge was merely more acceptable than the other (i.e., both had a perceptual impairment, but one impairment did not directly influence the judge's capacity to make a decision in that context). Participants' responses for each question were converted to a 4-point scale, with a rating of 4 meaning that participants thought the most capable judge (either the perceptually capable one or the acceptable one with the unrelated impairment) would be a lot better than the other judge, and a rating of 1 meaning that participants thought the other judge would do a lot better. Thus, higher ratings indicate greater preference for the most competent judge. For each contrast, we calculated the average rating for participants in each grade as well as adults (see Table 2).

There were six contrasts total per participant. The ratings were calculated for each of the six contrasts (Capable Neutral vs. Incapable Friend; Capable Neutral vs. Incapable Enemy; Capable Friend vs. Incapable Neutral; Capable Enemy vs. Incapable Neutral; Acceptable Neutral vs. Incapable Friend; Acceptable Enemy vs. Incapable Neutral).

Initial tests revealed no differences based on question order or gender, so the data reported here are collapsed across both.

To examine how much participants focused on capability, our first set of analyses focused on the four contrasts in which a clearly capable judge was contrasted with a clearly incapable judge (Capable Neutral vs. Incapable Friend; Capable Neutral vs. Incapable Enemy; Capable Friend vs. Incapable Neutral; Capable Enemy vs. Incapable Neutral). A repeated measures ANOVA was conducted comparing these contrasts across age groups, finding that there were differences in the preference for the most capable judges depending on the specific contrast, $F(3, 237) = 19.20$, $p < .001$, partial eta squared = .20. There was no main effect of age group nor an interaction between age

Table 2. Average preference for most capable judge in Study 1

Contrasts		6-year-olds	8-year-olds	10-year-olds	12-year-olds	Adults
Most capable judge	Least capable judge	Most capable judge has no impairment (i.e., capable)				
Neutral	Friend	3.88 (.17)	3.56 (.18)	3.84 (.17)	3.73 (.18)	3.67 (.17)
Neutral	Enemy	3.89 (.11)	3.88 (.11)	3.94 (.11)	4.00 (.00)	3.72 (.11)
Friend	Neutral	3.89 (.14)	3.67 (.15)	3.53 (.14)	3.33 (.15)	3.78 (.14)
Enemy	Neutral	3.48 (.18)	3.13 (.19)	3.12 (.19)	3.13 (.20)	3.11 (.18)
		Most capable judge has unrelated impairment (i.e., acceptable)				
Neutral	Friend	3.44 (.18)	3.44 (.19)	3.41 (.18)	3.67 (.19)	3.83 (.18)
Enemy	Neutral	2.47 (.21)	2.94 (.22)	3.24 (.22)	3.20 (.23)	3.17 (.21)

Note. Mean ratings are based on a 4-point scale; standard errors are in parentheses.

group and contrast. Planned *post hoc* tests compared the contrasts, finding that the preference for the most capable judge was highest for the contrasts involving neutral judges with friends (Capable Neutral vs. Incapable Friend; Capable Friend vs. Incapable Neutral), with these two contrasts not significantly different from each other, $t(83) = .677$, $p = .50$. Preference for the most capable judge was lower for the contrast involving an incapable enemy (Capable Neutral vs. Incapable Enemy) and lowest for the contrast involving a *capable* enemy (Capable Enemy vs. Incapable Neutral). These contrast types were significantly different from each other and from the two contrasts involving neutral judges contrasted with friends, ps $< .05$. In other words, children had the weakest preference when the most capable judge was biased against someone (i.e., negatively biased). In addition, all contrasts were significantly above the midpoint of the scale (2.5) for each age group, all p-values less than .01.

To examine whether participants adjusted the strength of their preferences depending on whether the most capable judge was also most objective, we calculated the average preference for the most capable judge when he was objective (Capable Neutral vs. Incapable Friend; Capable Neutral vs. Incapable Enemy) and for the most capable judge when he was potentially partial (Capable Friend vs. Incapable Neutral; Capable Enemy vs. Incapable Neutral). We then conducted paired t-tests, finding that, overall, participants showed a stronger preference for the Capable Objective judge than for the Capable Partial judge, $t(83) = 5.38$, $p < .001$. Examining each age group separately, we found that 10-year-olds and 12-year-olds showed this preference, $t(16) = 4.37$, $p < .001$, and $t(14) = 4.461$, $p < .01$. In contrast, while 6-year-olds, 8-year-olds, and adults gave higher ratings to the Capable Objective judge compared to the Capable Partial judge, this difference was not significant, $t(17) = 1.37$, $p = .19$, $t(15) = 1.99$, $p = .07$, and $t(17) = 1.26$, $p = .23$.

Finally, our last set of analyses focused on the two sets of contrasts in which both judges had some sort of flaw (Acceptable Neutral vs. Incapable Friend; Acceptable Enemy vs. Incapable Neutral). Thus, to accurately respond to these contrasts, children needed to understand the importance of the appropriate perceptual capacity for making judgements. Because there was reason to believe that valence may play a greater role in these more difficult decisions than in the previous contrasts, we examined these

two contrasts separately. For each contrast, a one-way ANOVA was conducted to compare the average ratings between the age groups. For the Acceptable Neutral vs. Incapable Friend contrast, there were no significant differences between the age groups, $F(4, 79) = 1.06$, $p = .384$. In contrast, for the Acceptable Enemy vs. Incapable Neutral contrast, there was a trend towards a difference between the age groups, $F(4, 79) = 2.23$, $p = .074$. To test for a focus on capability, planned *post hoc* tests compared each of the contrasts against the midpoint of the scale (2.5) to determine if participants preferred the most competent judge (i.e., the judge with the unrelated impairment) at levels greater than chance. Overall, this was true for both contrasts: Acceptable Neutral vs. Incapable Friend: $t(83) = 12.95$, $p < .001$; Acceptable Enemy vs. Incapable Neutral: $t(82) = 4.93$, $p < .001$. Looking at each age group separately, we found that all age groups preferred the most competent judge when he was neutral (Acceptable Neutral vs. Incapable Friend), all ps $< .05$. In contrast, there were differences in performance depending on age for the Acceptable Enemy vs. Incapable Neutral contrast. For this contrast, children needed to put aside their distrust of someone who seemed negative and focus on who was most competent. Six- and 8-year-olds were not different from chance in their preference, $t(17) = .09$, $p = .93$ and $t(15) = 1.63$, $p = .12$, respectively. All other age groups preferred the most competent judge at greater than chance levels, $p < .05$.

Discussion

Our findings supported that children were focusing primarily on capability when determining which judge would be most accurate. With the exception of one type of pairing, which we will later discuss in more detail, 6- to 12-year-olds and adults preferred judges who are perceptually capable of observing the criteria important for making their judgements. Moreover, older children took both the capability and objectivity information into account when making decisions. While 10-year-olds and 12-year-olds consistently preferred the most capable judge, they adjusted the strength of their preference based on that judge's objectivity, showing a stronger preference for the capable judge when he was also objective than when he was not. Younger children did not show this sensitivity. Surprisingly, adults did not show this same sensitivity either, although their preference was in the right direction. The lack of significance may be an artefact of a difference in how the study was conducted with children and adults. While children participated in a face-to-face interview, adults responded to questions in a written survey, which may have led them to spend less time reflecting on each item.

In some ways, the strong reliance on capability is not surprising: previous research has found that even young preschoolers understand the importance of perception for knowledge (Nurmsoo & Robinson, 2009; O'Neill & Gopnik, 1991). Yet in other research, the importance young children have placed on the valence of relationships in predicting who will make accurate judgements (Mills & Keil, 2008) and explaining who made accurate judgements (Mills & Grant, 2009) made it highly possible that young children might continue to focus on that characteristic here.

Perhaps one reason this was an easy task is that the contrast between the judges was very simple. For four of the six contrasts, participants could be successful at selecting the most accurate judge by focusing on which informant had no impairments without considering the relevance of the capability. In other words, children could do well merely by having a bias against those with a perceptual impairment. Although the

results from these four contrasts still support that children and adults were focusing on capability instead of objectivity or valence, they do not indicate whether participants were reasoning about why capability was important.

For the two other pairings, however, children were faced with deciding between two judges who both had some sort of perceptual impairment. For these contrasts, children had to think about the relevance of the perceptual capability. Six- and 8-year-olds struggled to choose the most perceptually capable judge for the Acceptable Enemy vs. Incapable Neutral contrast when the most capable judge was an enemy with an unrelated impairment. One 8-year-old, for instance, preferred the incapable neutral judge (who could not see) over the capable enemy (who could not hear) in a running race contest, and she explained the preference as follows: 'Because even though he cannot see, he can still hear [pointing to the Incapable Neutral judge], and the person who won can tell him he won'. Thus, although young children seemed to primarily choose judges based on who was most capable, when both judges had some sort of flaw, they seemed to be distracted by valence.

To better understand whether 6- and 8-year-old children were making their decisions based on a bias against judges with perceptual impairments or based on an understanding of relevant perceptual capability, in Study 2, we contrasted two judges who both had some sort of impairment, and we also provided information regarding the judge relationships.

STUDY 2

Overview

Study 2 had two main goals. One goal was to further explore if 6- and 8-year-old children really understood the importance of relevant perceptual capability, recognizing that judges with unrelated impairments were more perceptually capable of making accurate decisions than judges with related impairments. To examine this goal, both judges in the second study had physical impairments. However, one impairment was relevant to judging the contest and the other impairment was not relevant (e.g., for an art contest, one judge cannot see the art, the other one cannot hear). Thus, to succeed at this task, children could not simply apply a bias towards those with impairments: they must determine which impairment is the least damaging to the ability to make decisions for that particular contest.

A second goal was to better understand developmental changes in preference for capability over objectivity by making the task a bit more difficult in order to generate more variance between the younger participants. In Study 1, with the exception of one contrast involving an enemy, younger children had little difficulty choosing the most capable judge. One reason may have been that, as previously stated, children could simply have had a bias against the judge with the perceptual impairment, which our first goal addresses. A second reason may be that children did not seem to attend to the objectivity/valence information because bias does not play a big role in judging contests that have very clear criteria for winning (e.g., finishing a running race first). Therefore, to encourage children to attend more to the objectivity information, we chose to use contests involving somewhat subjective criteria for winning. Whereas it is hard for bias to play a role in deciding the winner of contests with clear criteria for winning (such as the running race from Study 1), deciding the winner of subjective contests can be based on factors related to both commonly expected standards learned through experience

Table 3. Possible patterns of results for Study 2

Contrasts		Preference		
Most capable judge	Least capable judge	Capability	Objectivity	Valence
		Relationship consistent		
Friend	Friend	4	2.5	2.5
Enemy	Enemy	4	2.5	2.5
		Relationship varies		
Neutral	Friend	4	4	1
Enemy	Neutral	4	1	1
Enemy	Friend	4	2.5	1

Note. Higher numbers indicate a stronger preference for the judge who is most perceptually capable of judging the contest, while lower numbers indicate a stronger preference for the other judge in the pair. A 2.5 indicates that responses would be at chance.

and expertise and the judge's opinion. By having children evaluate potential judges for subjective contests, we thought it would be more possible that children would consider weighing other characteristics besides capability when evaluating the judges.

To pursue these goals, five different contrasts between characteristics were used, all for contests involving somewhat subjective criteria for winning (e.g., singing contest, art contest). In two contrasts, to examine whether children could detect the difference between a relevant and an irrelevant impairment without being distracted by objectivity information, the relationship characteristic of the judges was held constant while the perceptual capability was varied. The remaining three contrasts again examined the emphasis on capability and objectivity or valence. For each of these three contrasts, if children focused on valence over capability, then they would choose the least capable judge. Table 3 explains the different potential patterns of findings for these contrasts (described in more detail in 'Design' section), depending on children's intuitions regarding the characteristics most important for being a good judge.

Method

Participants

Forty-one 6-year-olds ($M_{age} = 6.50$; $SD = .61$; 18 males, 23 females) and 29 8-year-olds ($M_{age} = 8.33$; $SD = .68$; 13 males, 16 females) were recruited from a Dallas private elementary school. Both this study and an unrelated study were tested consecutively on participants individually in a quiet room at the school. Testing sessions lasted about 20–30 min per participant.

Design

Children were told 10 stories about a classroom of students participating in different kinds of contests with somewhat subjective criteria for winning (i.e., poetry contest, bug collection contest, art contest, design-a-puppet contest, cartoon voice contest, dance

move contest, singing contest, joke contest, whistling contest, and a pet beauty contest) and asked which of two judges would be most likely to pick the person whom met the criteria for winning the contest. For each story, children were presented with two potential judges that each had two varying characteristics: the relationship to a contestant (i.e., objectivity: friend, enemy, or neutral), and their perceptual capacity to experience the criteria for judging the contest (i.e., capability: irrelevantly impaired but acceptable or relevantly impaired and therefore incapable).

Five different contrasts between characteristics were used (with two stories for each contrast). In two contrasts, the objectivity characteristic of the judges was held constant, while the perceptual capability was varied (Acceptable Friend vs. Incapable Friend, Acceptable Enemy vs. Incapable Enemy). For the remaining three contrasts, both the objectivity characteristic and perceptual capability varied. In one of the contrasts, a neutral judge with an unrelated impairment was contrasted with a relevantly impaired judge that had a friend participating in the contest (Acceptable Neutral vs. Incapable Friend). In a second contrast, an enemy with an unrelated impairment was contrasted with a relevantly impaired neutral judge (Acceptable Enemy vs. Incapable Neutral). In the third contrast, an enemy with an unrelated impairment was contrasted with a relevantly impaired friend (Acceptable Enemy vs. Incapable Friend).

The stories were placed into four packets, pseudo-randomly ordered. See Appendix for more detail on the contrasts.

Procedure

The procedure was similar to Study 1, with some slight differences to the protocol and pictures. Before the testing began, the experimenter first showed the participants drawings of each type of judge. Perceptual incapability was shown by a stick figure wearing a blindfold (cannot see) or earmuffs (cannot hear). Lack of objectivity (due to relationships) was indicated by facial expressions. To differentiate further than Study 1 between the different types of relationships, we gave the neutral judge a straight mouth and the judge who was friends with someone in the contest a smiling mouth, while the enemy had a frowning expression. In addition, the enemy was marked with an 'E' on his shirt, the friend was marked with an 'F' on his shirt, and the neutral judge did not have any letters on his shirt. Furthermore, because a few of the participants involved with the previous study showed difficulty distinguishing the judges from the contest participants, we showed the participants a drawing of a scene displaying the judges sitting behind a table labelled 'judges' to the left of the page and a stage with a banner naming the contest to the right of the page (see Appendix, e.g., scene). The experimenter pointed to the table and told the participants that this is where the judges sit and then pointed to the stage and said this is where the contest will take place.

During testing, the drawings for each story were placed on the table to maintain the attention of the participant, but like Study 1, these drawings did not provide information about the contestants or the outcome of the contest. Again, for each contrast, children were asked to select which judge would be most likely to pick out the person who best met the criteria for winning that particular contest (see Appendix). After the participants endorsed a judge, they were asked to indicate the strength of their preference by choosing between 'a lot or a little better', with 'a little better' being the last statement they heard.

Each session was recorded with a digital voice recorder.

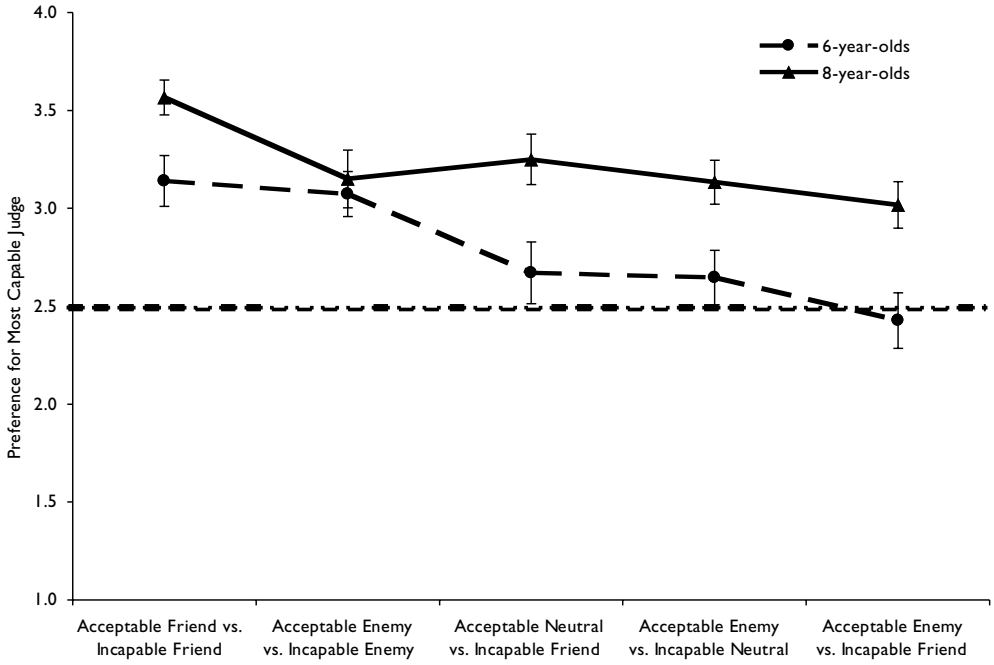

Figure 1. Average preference for most capable judge in Study 2. The dashed line marks the midpoint of the scale.

Results

Participants' responses for each of the 10 questions (two per contrast type) were converted to a 4-point scale as described in Study 1. For each of the five contrast types, we calculated the average rating for participants in each age group.

Initial tests revealed no differences based on question order or gender, so the data reported here are collapsed across both.

To examine whether children understand the relevance of capability, a repeated measures ANOVA was conducted comparing the different contrasts across age groups, finding that there were differences in the preference for the most capable (i.e., Acceptable) judge depending on the specific contrast, $F(4, 272) = 13.25$, $p < .001$, partial eta squared = .16. In addition, there were significant differences in the ratings between the age groups, with 8-year-olds showing a stronger preference than 6-year-olds for the most capable judge, $F(1, 68) = 9.50$, $p = .003$, partial eta squared = .12. In addition, there was a trend for an interaction between contrast type and age group, showing that the preference for the most capable judge in each contrast varied between the age groups, $F(4, 272) = 2.07$, $p = .085$, partial eta squared = .03. See Figure 1.

Post hoc tests examined the relationship between the contrasts for each age group separately. Six-year-olds showed the strongest preference for the most capable judge for the contrasts when both judges had the same relationship with a contestant (Acceptable Friend vs. Incapable Friend, Acceptable Enemy vs. Incapable Enemy), and there was no distinction in their preference between these two contrasts ($p = .58$). They showed the next strongest preference for the most capable judge when one of the judges was neutral (Acceptable Neutral vs. Incapable Friend, Acceptable Enemy vs. Incapable Neutral), again showing no preference between these two contrasts ($p = .82$). Their

lowest preference for the most capable judge was when an Acceptable Enemy was contrasted with an Incapable Friend. In contrast, 8-year-olds had the strongest preference for the most capable judge when both judges were friends with one of the contestants (Acceptable Friend vs. Incapable Friend). Preference for the most capable judge did not differ significantly between the rest of the contrasts.

Like in Study 1, to test for the capability preference, planned *post hoc* tests compared each of the contrasts against the midpoint of the scale (2.5) to determine if participants preferred the most capable judge at greater than chance levels. While 8-year-olds were above chance at choosing the most capable judge for all five contrasts (all ps $< .001$), 6-year-olds were only above chance for the two contrasts that kept objectivity information constant (Acceptable Friend vs. Incapable Friend: $t(40) = 4.92, p < .001$; Acceptable Enemy vs. Incapable Enemy: $t(40) = 4.97$, $p < .001$). For the other three contrasts, 6-year-olds were at chance (Acceptable Neutral vs. Incapable Friend: $t(40) = 1.08$, $p = .29$; Acceptable Enemy vs. Incapable Neutral: $t(40) = 1.08$, $p = .29$; Acceptable Enemy vs. Incapable Friend: $t(40) = .52$, $p = .61$). Six-year-olds had more difficulty deciding what to do when they might be persuaded in two different directions: one, to choose the judge with the most positive relationship (i.e., focusing on valence); or two, to choose the judge with the ability to perceive the information necessary to make an accurate decision (i.e., focusing on capability).

We also looked at the most common strategy used to guide children's choices across the three difficult contrasts. For this review, we looked at each child individually to classify whether the child was consistently guided by capability (chose the most capable expert as being a little or a lot better than the other judge for all three types of contrasts), guided by valence (chose the most positive relationship for all three types of contrasts), guided by objectivity (chose the most impartial expert for all three types of contrasts), or exhibited a mix of preferences. Of the 8-year-olds, 65.5% children were consistently guided by capability, 3.4% were clearly guided by valence, and the others were more mixed (e.g., choosing the most capable judge for two of three contrasts). In contrast, only 31.7% of 6-year-olds were clearly guided by capability; of the remaining children, 22.0% were clearly guided by valence, 4.9% clearly by objectivity, and the remainder more mixed. Thus, while capability was the most important guiding strategy for both age groups, 8-year-olds were focusing on it more consistently than 6-year-olds, and 6-year-olds also frequently focused on valence.

Discussion

The first goal of this study was to see if young children really understood the importance of relevance for capability, recognizing that irrelevantly impaired judges were more perceptually capable than relevantly impaired judges of making accurate decisions. We found that children do understand the importance of relevance for capability, at least to some extent. Both 6- and 8-year-olds were able to choose the most capable judge when information about objectivity was kept constant.

The second goal was to better understand developmental changes in preference for capability over objectivity. We found that 8-year-olds seemed primarily focused on capability. In fact, 8-year-olds did better with contrasts in this study than with similar contrasts in the last one, perhaps because of the changes to the stimuli that made it easier to keep track of all of the judge characteristics. This is particularly impressive given that the contests in this study involved more subjective criteria, so children may have been

more tempted to choose judges who seemed more objective or to focus on valence. Six-year-olds, though, responded at chance overall when the relationships were not kept consistent. That said, examining individual patterns of data showed that while some 6-year-olds were responding at chance, of those demonstrating a consistent preference, the majority were responding based on capability, with a sizeable minority focusing on the valence.

GENERAL DISCUSSION

When trying to determine who will be the most accurate and objective decision maker, it is often useful to evaluate their strengths and weaknesses. The current research focused on examining developmental differences in how children weigh two characteristics in particular – capability and objectivity – when evaluating potential judges. Study 1 showed that at least in some circumstances, 6- to 12-year-olds and adults can focus on capability over objectivity when choosing decision makers, and that 10- and 12-year-olds are able to take both characteristics into account, more strongly preferring judges that are both capable and objective to judges that are capable and biased. Study 2 extended these findings to show that by age 8 (and to some extent earlier), children can also choose decision makers based on the relevance of the perceptual capability.

Yet focusing on the most capable judge was not always an easy task. In Study 1, 6- and 8-year-olds struggled to choose the most capable judge when he had a negative relationship with one of the contestants and had some sort of perceptual flaw. This was not just because children did not want to choose an enemy as a judge – they were perfectly willing to endorse an enemy if he was clearly perceptually capable. Instead, when both judges had an impairment, the information that one of the judges was an enemy became a more salient reason to reject him.

Study 2 further examined this issue. In some ways, 6-year-olds were able to recognize the importance of relevant perceptual capabilities: they were able to determine which decision maker would be best when only the perceptual capacity varied (an irrelevant impairment or a relevant impairment) and the objectivity information was constant (both judges were friends, or both judges were enemies). But once objectivity (and thus valence) varied as well, 6-year-olds struggled to choose the most capable judge. Although some still seemed to focus on importance of capability, many were swayed by valence, seeming to have a drive to pick the most positive relationship (or to not pick the most negative relationship). Thus, it seems that in situations in which it is difficult to determine who is most capable, some young children may focus more on valence information than capability information to inform their decisions.

Why would young children focus on valence information over capability in these situations? One possibility is that the use of drawings to remind participants of each judge's characteristics biased children to focus on valence. When preparing the drawings to accompany the stories, we wanted to have clear visual cues in the pictures of the judges for both the capability component (i.e., ear muffs, blindfold) and for the objectivity component (i.e., label under picture or letter on shirt). Unfortunately, during piloting, we found that young children could not keep track of the objectivity information with only the label or the letters on the shirt without having facial expressions also present. Thus, by trying to make both the capability and objectivity information equally salient visually, we may have biased young children to focus on valence. Indeed, it is possible that young children interpreted the facial expressions of the judges as indicators of a

general trait as opposed to selective feelings towards one person. While overall, children of all age groups were still generally selecting judges based on capability instead of objectivity or valence, it is possible that on the difficult contrasts in Study 2, 6-year-olds were more swayed by valence than they would have been without the drawings. This is an issue for future research.

The fact that young children struggled most to select the most accurate judge when each potential judge had multiple flaws supports that when multiple characteristics are contrasted, the task of deciding whom to trust becomes more difficult. In some situations, characteristics related to objectivity and even valence stand out the most. For instance, as described earlier, people tend to make decisions about whether someone will be nice or fair more quickly and easily than whether someone has the appropriate level of expertise to make a decision (e.g., Ybarra *et al.*, 2001). Thus, when children's mental resources are strained by having to think about multiple dimensions simultaneously, it may be easier for them to default to relying on the characteristic that is easiest to detect. Expanding on this idea, we would predict that adults under cognitive load without mental resources to spare would also frequently make choices based on valence and objectivity instead of capability. This is an open question for future research.

In these experiments, we saw little evidence that any age group was consistently choosing based on objectivity. Even though the contrasts used in the experiments (particularly in Study 2) were designed to focus on pitting capability against valence, it would have been possible to detect if children were consistently making choices primarily based on objectivity (as children would have consistently chosen the most neutral judge; see Tables 1 and 3). Perhaps the lack of focus on objectivity was because by the time children understand the importance of impartiality (generally between 8- and 10-year-olds), they already recognize the importance of capability, and in the scenarios we presented to them, capability was seen as more important than objectivity. In Study 1, we found that 10- and 12-year-olds showed a stronger preference for judges who were both capable and objective than for judges who were capable but also partial. Thus, at least to some extent, older children seem capable of differentially weighing these two characteristics when evaluating potential decision makers.

In the current research, if young children based their decisions on something related to the objectivity information, they were focused on valence. In fact, children seemed to struggle the most whenever one of the potential judges was enemies with someone in the contest. In Study 1, children (and adults) showed a slightly lower preference for the most capable judge when he was an enemy. In Study 2, children of both age groups showed the lowest preference for the most capable judge when he was a capable enemy with an unrelated impairment contrasted with an incapable neutral judge or a friend. These findings fit with other research suggesting that people detect and attend to negative information more than positive information (Baumeister, Bratslavsk, Finkenauer, & Vohs, 2001), and that young children recognize that negative relationships can skew judgements before they recognize that positive relationships can do so (Mills & Grant, 2009). Although young children's focus on negative information may initially seem at odds with research finding an optimistic bias in young children (e.g., Boseovski & Lee, 2006; Lockhart, Chang, & Story, 2002; Rholes & Ruble, 1984), there are key differences between these bodies of research. In much of the research finding an optimistic bias, children are asked to predict future behaviours or other characteristics based on ambiguous information or specific behaviours (e.g., Grant & Mills, 2011). In contrast, in our research, we are presenting children with descriptions of pairs of people with differently valenced labels (e.g., friend, enemy, neutral), and children are asked

to choose one person from those pairs. In these situations, the negative information provided (one judge is an enemy) may stand out most, leading children to focus on choosing whoever seems less negative. This may be of particular interest given that statistically, someone with an enemy in the contest may be less biased than someone with a friend in the contest: someone with an enemy may only biased against one person, giving everyone else a chance of winning, whereas someone with a friend in the contest may be biased in favour of one person, giving no one else a chance of winning. That said, children may have good reason for being more skeptical about enemies than friends. Early in elementary school, they understand that some relationships involve shared support and liking, while others involve disliking and even hostility (e.g., Furman & Bierman, 1983; Peets, Hodges, Kikas, & Salmivalli, 2007). If children view the negative relationships as being less normative than positive relationships, they may assume that those with enemies have other flaws. The meaning behind this extra cynicism towards enemies as judges is a question open for future investigation.

Although the current research examined whether children can focus on capability over objectivity and valence when making decisions, there are certainly times in which the opposite emphasis may be more appropriate. For instance, in some situations, there may be little difference in capability between two potential decision makers, but one may be much more objective than the other. In situations like this, objectivity is likely to be a more important factor for decisions than capability. Future research should examine this issue.

Additionally, future research should explore how other characteristics besides capability and objectivity influence children's evaluation of decision makers. Recently, social psychologists have suggested that the characteristics important for evaluating others and predicting their behaviour can be divided into two universal dimensions of social cognition: competence and benevolence (for reviews, see Fiske, Cuddy, & Glick, 2007; Wojciszke, 2005). The 'competence' dimension focuses on traits related to perceived capability, such as intelligence, skill, and expertise, while the 'benevolence' dimension focuses on characteristics related to the perceived intentions of the source, such as objectivity, morality, trustworthiness, and friendliness. In the current research, we focused on one of the most salient forms of competence for young children to understand, relevant perceptual access (i.e., capability). Presumably, because this form of competence is quite salient to children, they may be less likely to attend to information on valence or objectivity than they would for other types of competence. While our two studies found that children were more focused on a competence component (i.e., capability) over a benevolence component (i.e., objectivity), this may not be the case with other pairs of competence and benevolence components, especially when competence is less salient and benevolence is more salient.

In the real world, characteristics related to capability, objectivity, competence, and benevolence are combined in a plethora of ways. For example, a child may arrive to play in a soccer match and see the referee hugging a member of the opposite team and wishing him good luck. By watching this interaction, the child may conclude that the referee may be biased. It is an open question how the child will react to this information: will he predict that the referee will give an unfair advantage to this other boy's team, will he expect the referee to be an even *better* judge because of his positive relationship to team member, or will he only show concern about the referee's judgement once he makes a questionable call? If this referee watched the field closely while another referee had his back turned to the field before making the call, how would the child respond? The current study suggests that in some situations, even young children would be less

concerned about the decisions made by a judge who may be biased than the decisions made by a judge claiming to know the outcome of a contest that he could not have even witnessed.

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Appendix

Study 1 Sample Story: Capable Friend vs. Incapable Neutral

For a running race contest, whoever crosses the finish line first will get the prize. One of these two people could judge the contest.

This person is friends with someone in the contest. He can see.

This person does not know anyone in the contest since he's in a different class. He cannot see.

Who do you think would be most likely to pick out the person who crossed the finish line first? Would he be a lot better or a little better than the other?

Contrasts for Study 1

Contrasts	Contests requiring ability to see (e.g, running race, tower building)	Contests requiring ability to hear (e.g., spelling bee, whistling contest)
Capable Neutral vs. Incapable Friend	Neutral can see vs. Friend cannot see	Neutral can hear vs. Friend cannot hear
Capable Neutral vs. Incapable Enemy	Neutral can see vs. Enemy cannot see	Neutral can hear vs. Friend cannot hear
Capable Friend vs. Incapable Neutral	Friend can see vs. Neutral cannot see	Friend can hear vs. Neutral cannot hear
Capable Enemy vs. Incapable Neutral	Enemy can see vs. Neutral cannot see	Enemy can hear vs. Neutral cannot hear
Acceptable Neutral vs. Incapable Friend	Neutral cannot hear vs. Friend cannot see	Neutral cannot see vs. Friend cannot hear
Acceptable Enemy vs. Incapable Neutral	Enemy cannot hear vs. Neutral cannot see	Enemy cannot see vs. Neutral cannot hear

Contrasts for Study 2

Contrasts	Contests requiring ability to see (e.g., art contest, bug collection contest)	Contests requiring ability to hear (e.g., poetry contest, singing contest)
Acceptable Friend vs. Incapable Friend	Friend cannot hear vs. Friend cannot see	Friend cannot see vs. Friend cannot hear
Acceptable Enemy vs. Incapable Enemy	Enemy cannot hear vs. Enemy cannot see	Enemy cannot see vs. Enemy cannot hear
Acceptable Neutral vs. Incapable Friend	Neutral cannot hear vs. Friend cannot see	Neutral cannot see vs. Friend cannot hear
Acceptable Enemy vs. Incapable Neutral	Enemy cannot hear vs. Neutral cannot see	Enemy cannot see vs. Neutral cannot hear
Acceptable Enemy vs. Incapable Friend	Enemy cannot hear vs. Friend cannot see	Enemy cannot see vs. Friend cannot hear

Study 2 Sample Story and Picture: Acceptable Enemy vs. Incapable Neutral

For a singing contest, whoever sings the best song will win a prize. One of these two people could judge the contest.

This person is enemies with someone in the contest and he cannot see.

This person doesn't know anyone in the contest, and he cannot hear.

Which person do you think would be most likely to pick the person who sang the best song as the contest winner? Would he be a lot better or a little better than the other?