



Contents lists available at ScienceDirect

# Journal of Experimental Child Psychology

journal homepage: [www.elsevier.com/locate/jecp](http://www.elsevier.com/locate/jecp)

## Brief Report

# If you don't want it, neither do I: Social influences on children's choices

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## ARTICLE INFO

### Article history:

Received 6 August 2014

Revised 1 July 2015

Available online xxxxx

### Keywords:

Preferences

Social influence

Theory of mind

Decision making

Preschoolers

Social cognition

## ABSTRACT

To what extent does knowing what others like influence children's valuation of objects? The current study examined the effect of having observed another person's choices on children's decisions about objects. Specifically, we asked whether children consider what the other person does *not* choose. In the first of three conditions, 4-year-olds watched as an experimenter looked inside two boxes and then selected the box containing the object she liked best. Children were then asked to choose between the remaining box (that the experimenter did not take) and a neutral box (that replaced the chosen box). Children tended to select the neutral box, suggesting that they had devalued the box the experimenter did not choose. However, in the second condition, when the experimenter chose a box without first looking inside—and thus was ignorant of the contents—children chose randomly. The third condition revealed that children continued to select the neutral box even when the experimenter who made the initial choice was not present. This indicates that children's valuation of the rejected option changed rather than their choices being solely influenced by the social dynamics of the situation (e.g., reluctance to choose the box with the option the experimenter knowingly rejected while in the presence of that experimenter). Taken together, these findings suggest that by 4 years of age, children's own choices—and values—are influenced by observing others' informed choices, including what they do *not* choose. The findings provide new insight into the potential role of social influence in children's developing preferences.

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## Introduction

Humans often need to make critical decisions concerning things about which they have limited information. Thus, attending to the choices of others might be a particularly adaptive strategy. When we observe others' choices, we are privy to two different types of information: what the person chooses and what the person leaves behind. Previous findings show that even young children are motivated to attend to the actions of others (e.g., Herrmann, Hernandez-Lloreda, Call, Hare, & Tomasello, 2010). However, despite widespread interest in informational social influence—the acceptance of information obtained from others as evidence of the true state of the world (Deutsch & Gerard, 1955)—surprisingly little is known about the effects of social influence on young children's own choices and preferences.

Does observing others' choices directly influence children's choices, and do children consider this information in their own valuations of objects? Specifically, in the current study, we investigated whether children learn about the value of objects that are *not* chosen—those options that are, in a sense, rejected. To acquire information through observing others' choices, children must possess several requisite skills. First, children must be motivated to attend to and seek out information from the social world. Second, it is important that children accurately understand and recognize that choice behavior can demonstrate intentionality and reflect underlying preferences.

Sensitivity to communicative cues and motivation to learn from others is a hallmark of human cognition (Csibra & Gergely, 2009; Herrmann et al., 2010). By 12 months of age, infants use declarative pointing to elicit shared attention with adults. They point to draw an adult's attention to an object, and they point more frequently if the adult attends to that object (Liszkowski, Carpenter, Henning, Striano, & Tomasello, 2004). Importantly, children are highly *motivated* to actively attend to and learn from observing others' actions (Herrmann et al., 2010), initiating these social exchanges spontaneously across a myriad of contexts. Tomasello, Carpenter, Call, Behne, and Moll (2005) even argued that this motivation to attend to, share with, and understand the intentions of others comprises an essential component of children's social reasoning and learning.

Recent findings also highlight young children's sensitivity to the subjectivity of preferences. Eighteen-month-olds understand that others' preferences are subjective and can differ from their own (Repacholi & Gopnik, 1997). Nineteen-month-olds understand that preferences differ across individuals, expecting that individuals should use the same names for things but do not necessarily share the same preference for those things (Graham, Stock, & Henderson, 2006). Toddlers also use adults' non-random sampling (i.e., intentional choice) behavior as a cue for their preference (Kushnir, Xu, & Wellman, 2010) even when that preference is different from the toddlers' own preference (Ma & Xu, 2011). Furthermore, 2-year-olds recognize when others share their preferences (Fawcett & Markson, 2010a), and 3-year-olds prefer to play with children who share their preferences (Fawcett & Markson, 2010b).

Children are also adept at discerning whether specific individuals are a reliable source of information. Across many circumstances, children have demonstrated the ability to evaluate whether a person is a knowledgeable, and thus reliable, source of information and, as a result, are more likely to learn from those reliable sources (e.g., Cluver, Heyman, & Carver, 2013; Sobel & Kushnir, 2013). For example, when 12-month-olds were presented with a novel toy in a laboratory setting, they looked more frequently toward an unfamiliar experimenter than to their caregivers, presumably because the experimenter was familiar with the toy and thus likely to have information about it (Stenberg, 2009). There is also substantial evidence that preschoolers prefer to learn words from reliable informants over unreliable ones (e.g., Birch, Vauthier, & Bloom, 2008; Jaswal & Neely, 2006; Koenig & Harris, 2005). Furthermore, when faced with a group of individuals labeling the same object, children tend to side with the majority over a lone dissenter, even developing distrust for the dissenter (Corriveau, Fusaro, & Harris, 2009). Finally, children consider the content of the material—for instance, whether they need information about toys or food—when determining whether a child or an adult is a better source of information (VanderBorghet & Jaswal, 2009). Together, these findings suggest that children

are astute observers of others and, critical for the current purpose, use this knowledge wisely in learning about the world.

Thus, the extant literature lends support to the notion that as children observe the actions of others, they attend to multiple aspects of the situation. In choice situations, this potentially includes all available options. Research suggests that children consider a choice to be indicative of an underlying preference for that option (e.g., [Diesendruck, Salzer, Kushnir, & Xu, 2015](#)). However, learning that someone prefers one option to another does not mandate that children will prefer that same option or consider it more valuable. However, children *could* learn something from watching others make choices. Thus, the question of import is whether others' preferences have *any* influence on children's own assignment of value to options.

Indeed, classic studies in social psychology have shown that in some contexts adults will alter their initial decisions in accord with others around them (e.g., [Asch, 1956](#)). Other studies demonstrate that adults' initial choices influence their later choices ([Brehm, 1956](#)). Furthermore, the manner in which a choice is framed ([Tversky & Kahneman, 1981](#)) and the other options against which the choice is being evaluated ([Hsee, 1998](#)) both influence adults' choices. The social world is a salient component of context, raising questions about social influences on choice. If social motivation is the mechanism guiding children's learning from others and extends into decision-making contexts, we should see children incorporating social information in their choice behavior.

The hypothesis that children incorporate social information into their own choices has been borne out in several recent studies. [Fawcett, Kushnir, and Markson \(unpublished\)](#) showed that 18-month-olds choose to play with the same objects for which others have exhibited a preference. [Shutts, Banaji, and Spelke \(2010\)](#) found that children choose toys and activities that are preferred by other children over adults and by individuals of the same gender as the children. These social influences are not limited to object choice; for example, 12-month-olds choose a food endorsed by a native speaker of the child's language over a foreign speaker ([Shutts, Kinzler, McKee, & Spelke, 2009](#)). However, in each of these studies, the question of interest pertained to whether children would choose the *same* option that someone else preferred. Furthermore, only Fawcett et al.'s study contrasted options liked by others with options toward which they were neutral. In both Shutts et al. studies, each of the options children chose between were liked by others, and the contrast was between individuals of different social groups. Testing whether children indeed make the same choices as others, and how their choices are influenced by others' attributes, is an important and seemingly straightforward measure of social influence on choice. However, in an act of choice, when someone chooses one option, by default the person leaves one or more options behind. When an option is disliked and thus rejected, clear information is given about the person's valuation of that option. However, in most choice situations, chosen options are regarded favorably, but no information is directly provided about the non-chosen option(s) beyond them not being selected. Does the mere fact that some options were not chosen implicitly suggest they are of lesser value? To understand the role of social influence in choice, it is essential to consider what information is being provided about the options that were not chosen.

A wealth of research has focused on the widespread finding that adults' own choices influence their subsequent valuation of an option (e.g., [Brehm, 1956](#); [Gerald & White, 1983](#); [Sharot, De Martino, & Dolan, 2009](#)). [Egan, Santos, and Bloom \(2007\)](#) further explored this phenomenon in children. Egan and colleagues had 4-year-olds make an initial choice between two options, followed by a second choice between the option they had previously rejected and an alternative option. After making their initial choice, children showed a decreased valuation for the option they did not choose, suggesting that their initial choice shaped their later one ([Egan et al., 2007](#); but see [Chen & Risen, 2010](#), for an alternative account). In a control condition, children were simply *given* one of the two initial options—thus, no choice behavior was ever modeled by participants or the experimenter—and did not produce this effect. That children are influenced by having made a choice, but not in a similar context when they have not made a choice, suggests that the act of choosing drives these findings.

[Sharot and colleagues \(2009\)](#) also found that adults' valuation of options was influenced by their own choices but not by choices made for them by a computer program. Thus, it appears that the choice an agent makes drives this change in valuation, although these studies do not tease apart whether the driving factor is the individual's own choice or the fact that something was chosen—and something

else was rejected—by an agent. Egan and colleagues (2007) and Sharot and colleagues (2009) interpreted their findings within a framework of cognitive dissonance theory, where the act of choosing between options initially regarded as equivalent creates psychological tension (dissonance) that the individual is motivated to reduce. By reassigning value to the options so the values align with the outcomes, this dissonance decreases (Festinger, 1957). It is also possible that an initial misattribution of utility to random or extraneous factors in choice behavior can create a lasting preference for the chosen option (Ariely & Norton, 2008), and this could operate in addition to, or outside, the realm of cognitive dissonance. Whereas these explanations all favor one's own choice as the factor driving the valuation of options, whether one's valuations are affected by *watching* another agent make a choice is a question that has yet to be explored.

Children frequently observe other people making choices. How does this influence choice behavior? A natural consequence of choice behavior—firsthand or via observation—is that when something is chosen, something else is, in a sense, rejected. The current study asked whether observing the choices of others decreases children's valuation of the non-chosen option.

### Study overview

The current study used a modified choice procedure (e.g., Egan, Bloom, & Santos, 2010; Egan et al., 2007) in which 4-year-old children watched an experimenter make an initial choice between two options. Children were then asked to choose between the option that was left behind and a new alternative neutral option. If children are influenced by what the experimenter did not choose, they should devalue the previously rejected option and choose the neutral alternative. In the first of three conditions, the experimenter looked inside two boxes before making her choice (*informed decision*). In the second condition, the experimenter looked at, but not inside, the boxes before making her choice (*uninformed decision*). The third condition was identical to the first except that the experimenter who made the initial choice was not present when children made their choice (*two-agent informed decision*) (Fig. 1). If children use information provided by the experimenter's choice to inform their own choice, we predicted that children would choose the neutral box over the rejected box in all three conditions. However, if children do not consider an uninformed decision to be informative, or if children's choices are the result of social desirability (i.e., not wanting to choose the box the experimenter did not choose while the experimenter is present), we predicted that children would choose randomly between the rejected and neutral boxes in the latter two conditions. Because this topic has not previously been addressed with children (or adults) of any age, and 4-year-olds successfully completed Egan and colleagues' (2007) procedure, we also focused our study on 4-year-olds.

## Method

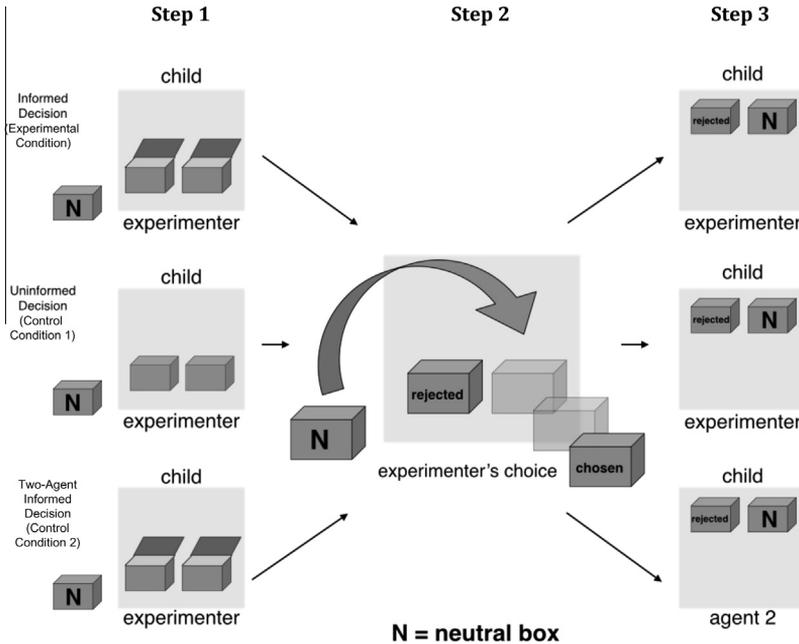
### Participants

A sample of 48 4-year-old children participated in one of the following three conditions: informed decision ( $n = 16$ , 8 girls,  $M_{\text{age}} = 4;4$  [years;months], range = 4;0–5;1), uninformed decision ( $n = 16$ , 8 girls,  $M_{\text{age}} = 4;6$ , range = 4;1–5;2), and two-agent informed decision ( $n = 16$ , 8 girls,  $M_{\text{age}} = 4;6$ , range = 4;1–4;10). Of the original sample, 2 children were replaced for failure to understand instructions (1) and experimenter error (1).

Children were recruited from a database of families who had expressed interest in participating in developmental research, and they were tested in a university laboratory. The majority of children were White and from middle-class backgrounds.

### Materials

The study used three identical opaque boxes ( $18 \times 18 \times 12.5$  cm). The tops of the boxes flipped up to allow the experimenter to peek inside while shielding the contents from participants. Additional materials included one tray ( $40 \times 33$  cm) large enough to hold two boxes at once and three identical



**Fig. 1.** Schematic representation of the three steps of each condition. In Step 1, children watched as the experimenter placed two boxes on the table in front of herself and placed a third neutral box on the floor to the left of her chair. She then looked inside (informed decision and two-agent informed decision conditions) or at but not inside (uninformed decision condition) the two boxes on the table. In Step 2, children watched as the experimenter chose her favorite box, placed that box on the floor to the right of her chair, and placed the neutral box on the table where the chosen box had been. In Step 3, children were asked to choose, by either the experimenter (informed decision and uninformed decision conditions) or a different agent (two-agent informed decision condition), one of the two boxes on the table.

novel objects small enough to fit entirely within the boxes. Participants did not view the objects until the completion of the study; thus, children were unaware that the contents of the boxes were identical.

## Procedure

### Informed decision

Children were seated at one end of a rectangular table across from the experimenter's chair. The experimenter carried a tray stacked with three identical opaque boxes into the room, placed the tray on the table in front of her chair, and sat down. She explained that she did not know what was inside the boxes but that they would play a game to find out. She placed all three boxes on the floor to the left of her chair and then placed two boxes on the tray in front of herself, leaving the third (neutral) box on the floor. She looked inside both boxes on the tray and then selected the box containing the object she liked best. She placed her selected box on the floor to the right of her chair, saying, "I like this one the best. I'm going to take it to play with later." Then she picked up the neutral box and placed it on the tray (where the selected box had been), pushed the tray across the table, and said, "Now it's your turn. Which box do you want?" Lateral position of the selected box, and subsequently of the neutral box, was counterbalanced across children. Once children chose a box (i.e., reached for and began to open it), the experimenter moved the non-chosen box out of the children's reach, effectively ending the experiment. Children appeared highly motivated to engage in this task given that all children quickly selected one of the boxes to open. Furthermore, because of the size and manner in which the boxes

opened, children needed to use two hands to open their chosen box. Thus, no child tried to open more than one box at a time.

#### *Uninformed decision*

The materials and procedure for the uninformed decision condition were identical to those for the informed decision condition except that the experimenter did not look inside the two boxes before selecting one (i.e., the experimenter looked at, but not inside, each box and used the same spoken script after selecting a box as in the informed decision condition). In this sense, unlike in the informed decision condition, the experimenter was not making an informed choice but rather was making an uninformed or random choice with regard to the object inside the box.

#### *Two-agent informed decision*

The materials and procedure for the two-agent informed decision condition were identical to those for the informed decision condition except that the experimenter was not present when children made their choice. After the experimenter made her initial choice, put the chosen box next to her chair, and placed the neutral box on the tray, a female confederate entered the testing room under the guise of telling the experimenter she had a phone call. The experimenter asked the confederate to take over and left the room; the confederate then completed the test phase of the study. The confederate was blind to which box was the target, thereby controlling for the possibility of experimenter bias in the informed decision condition. Furthermore, this condition was designed to investigate whether social pressures from the experimenter's presence might have influenced children's response in the informed decision condition.

## **Results and discussion**

### *Informed decision*

Children's responses were coded for which of the two boxes they chose to open. Of the 16 participants in this condition, 13 selected the neutral box and 3 chose the original box (binomial probability,  $p < .012$ ). These findings suggest that 4-year-olds<sup>1</sup> based their decision, at least in part, on information gathered from observing the experimenter's choice, leading them to *not* choose the box the experimenter had neglected to choose. If that is indeed what children were doing, it would imply that they devalued the non-chosen option, thereby opting for the alternative, presumably neutral, option. The findings also suggest that children viewed the experimenter as a good source of information given that they were willing to incorporate her opinion of the objects in the boxes into their own choice.

An alternative interpretation of the main result is that children chose the neutral box simply because it was new or the last box the experimenter touched, thereby making it more salient. In addition, children received explicit information that the experimenter preferred the object in one of the boxes. Thus, it is unclear whether merely observing the experimenter make a choice was sufficient to influence children's own choice or whether knowing that the experimenter was making an informed choice was necessary (i.e., that she demonstrated knowledge of the contents of the boxes).

The uninformed decision condition directly addresses this issue by changing the knowledge state of the experimenter. Specifically, in the uninformed decision condition, the experimenter is ignorant of the contents of the two boxes. If the only thing influencing children's choice is the action of the experimenter (i.e., her choice), regardless of informational content, children should still choose the neutral

<sup>1</sup> An additional 24 3-year-old children participated in the informed decision condition (12 girls,  $M_{\text{age}} = 3;7$ , range = 3;2–3;11). Of these children, 15 selected the neutral box and 9 selected the original box (binomial probability,  $p = .154$ , *ns*). However, whereas the findings for the 3-year-olds are not significantly different from chance, they are also not significantly different from the 4-year-old children's choices (Fisher's exact test,  $p = .297$ , *ns*). Thus, it is unclear how to interpret these findings. It is possible that the data are capturing a developmental trend, with younger children (3-year-olds) being less able or inclined to incorporate another person's choices into their own action. However, because they chose the neutral box statistically as often as the 4-year-olds, it is possible that some younger children do use this information in the same way as the older children and that the ambiguity in the data is due to increased variability within this sample.

box despite the experimenter's lack of knowledge about the box contents. However, if children consider the knowledge state of the individual making the choice, they should have no reason to choose the neutral box when the experimenter is ignorant of its contents and thus should choose randomly. If the latter is the case, and children choose both boxes equivalently, that would also show that children's choice of the neutral box in the informed decision condition is not due to newness or salience.

### *Uninformed decision*

Of the 16 participants in this condition, 6 chose the neutral box and 10 chose the original box. Their choice did not differ from chance (binomial probability,  $p = .895$ ). Furthermore, 4-year-olds chose the neutral box significantly more frequently in the informed decision condition than in the uninformed decision condition (Fisher's exact test,  $p = .029$ ). This finding rules out the possibility that children chose the neutral box more frequently in the informed decision condition because it was novel or the last box touched. In addition, the results suggest that children's observations of the experimenter making an informed choice between the two boxes—that is, the experimenter's knowledge of the contents of the boxes—is what influenced children's choice, not merely observing the act of choosing.

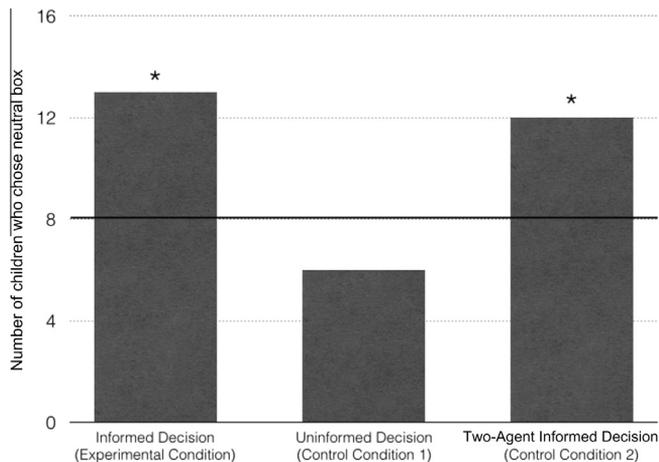
However, it is possible that in the informed decision condition, instead of learning something about the value of the option in the rejected box, children instead based their behavior on the social dynamics of the situation. Perhaps they were reluctant to choose the box with the option the experimenter knowingly rejected while she was present, yet did not incorporate her choice behavior into their own independent valuations of the options. In addition, in the informed decision condition, the experimenter was aware of which box was the neutral box. Although the study was carefully designed to avoid experimenter bias during the test phase, that possibility cannot be completely ruled out. Thus, in the two-agent informed decision condition, a confederate—blind to which box was the neutral box—conducted the test. If children's choice behavior in the original informed decision condition was contingent on the presence of the experimenter, we would expect children to choose randomly between the neutral and rejected boxes when tested by the confederate. However, if children gain information about the value of the options inside the boxes via observing the experimenter's choice, we would expect them to choose the neutral box more often than chance as they did in the original informed decision condition.

### *Two-agent informed decision*

Of the 16 participants in this condition, 12 selected the neutral box and 4 chose the original box (binomial probability,  $p = .038$ ) (see Fig. 2). Furthermore, 4-year-olds chose the neutral box marginally more frequently in the two-agent informed decision condition than in the uninformed decision condition (Fisher's exact test,  $p = .073$ ). This finding largely replicates that of the informed decision condition and provides direct evidence that children decreased their valuation of the option in the rejected box relative to the neutral box. This finding also rules out the possibility that children's choice behavior is contingent on the presence of the person who made the initial choice due to either social factors or experimenter bias. Furthermore, although the small sample size in each individual condition is a potential limitation, the robust replication of our key finding—that children avoided the box the experimenter did not choose after the experimenter made an informed choice—provides strong evidence that this experimental paradigm taps into a strategy children use to systematically assess the value of options.

## **General discussion**

The current findings offer compelling evidence that children's choices are influenced by observing what others do *not* choose. After watching someone choose between two equivalent options, children were less likely to select the option previously rejected by that person. Importantly, children were influenced by the other person's behavior only when given clear evidence that the person made an informed decision rather than choosing blindly between options. Thus, children considered the other



**Fig. 2.** Number of 4-year-olds who chose the neutral box across the three conditions. The asterisk (\*) indicates conditions in which children chose the neutral box significantly more often than would be expected by chance ( $p < .05$ ).

person's knowledge—and presumably her preferences—when determining whether to incorporate her choices into their own decision. Furthermore, this influence persisted even when the person who made the decision was no longer present, suggesting that her initial choice had fundamentally altered children's valuation of the rejected option.

Two key factors facilitate children's ability to internalize others' choices and then incorporate that information into their own choices. First, children must be motivated to attend to others and to implicitly learn about the value of objects by observing others' choices. Second, children must understand that people have preferences and that these preferences are reflected in their choices. The current findings synthesize and replicate findings from limited and disparate studies on factors that influence children's own preferences. They cohesively demonstrate that children understand that preference information can be conveyed via choice behavior, that preference information is value-laden, and that children spontaneously incorporate this information into their own choices. The findings also provide the first evidence that children devalue options that they observe other people not choosing.

A blind choice paradigm was used in the current study to control for children's a priori object preferences. This methodology was similar to that used by Egan and colleagues (2010), although the theoretical underpinnings and questions of interest differ. Whereas Egan and colleagues focused on whether children's own initial choice influenced their subsequent choice, the current study investigated whether children assigned a lower value to an option that another person did not choose. Thus, the crucial methodological difference between the two studies pertains to *who* makes the initial choice. That is, if two options are initially equivalent, are children's valuations differentially affected depending on whether *they* choose between the options or they *watch someone else* choose between them? In both Egan and colleagues' study and the current informed decision condition, after an initial choice was made, children seemed to devalue the non-chosen option. However, when children were given one of the initial options (Egan et al.) or watched the experimenter choose *without* looking inside the boxes (uninformed decision condition), children did *not* show a change in their valuation of options. Together, these findings suggest that a choice made by an agent influences children's own choices. Critically, the results of the uninformed decision condition suggest that the experimenter's knowledge played a key role in influencing children's choices. Whereas Egan et al.'s findings were explained as cognitive dissonance, that is an unlikely explanation for the current findings given that children did not make the initial choice and thus should not experience dissonance. Thus, it is plausible that different mechanisms underlie the same pattern of results across both studies. However, if the same mechanism underlies children's behavior in both studies, a more parsimonious

explanation may be rooted in children's capacity to attend to and learn from the social world. On such an account, this predilection to readily acquire—and potentially to more heavily weight—information provided via social sources when calculating the value of options may be fundamental to children's choice behavior. That same mechanism might then be generalized and expressed more broadly in situations where children are the agent making the choice.

The current study raises several questions for future research. The first concerns how children interpret the experimenter's actions toward the non-chosen option. Previous research has shown that children treat positive and negative information differently and have a “negativity bias” to attend to and learn more from negative information (Vaish, Grossmann, & Woodward, 2008). Studies that contrast positive, neutral, and negative information tend to reveal such a bias for negative information but no difference between positive and neutral information. This could suggest that children interpret the act of not choosing an option as a negative action rather than a neutral action given that they *did* differentiate between the chosen and non-chosen options.

A second question concerns whether children evaluate the trustworthiness of the informant in subjective valuation tasks. Children expect adults to be reliable unless provided with strong evidence to the contrary (e.g., Jaswal, 2010). However, unlike learning facts or words, learning from another person's preferences might require that children know they have similar preferences (Fawcett & Markson, 2010a). If this is true, in the informed decision condition, the credibility of the experimenter might have played a role in children's willingness to use the information she provided. Alternatively, children might initially assume that others share their preferences unless provided with evidence to the contrary.

In the current study, children were unaware of the contents of the boxes until after they made a choice, leaving little room for their preexisting preferences to influence their choices. Preferences—dispositions to consistently value one option as more desirable than another option—may be important because they allow individuals to make rapid decisions with little cognitive effort and offer a means by which to predict another person's behavior. Thus, it is plausible that social learning mechanisms drive individuals to seek out and incorporate both explicit and implicit preference information into the formation of their own preferences. Little is known about how preferences develop and change over time. The study of children's choices is a critical first step in clarifying the mechanisms underlying the initial development of preferences not only in children but also in adults.

The current findings are the first demonstration, to our knowledge, that children consider the full picture—both individuals' actions and inactions when choosing between options—and, furthermore, that this social information informs their valuation of the options under consideration. To do so, children must be motivated to learn from others' actions and be sensitive to the preferences of others. Children's devaluation of options not chosen by others demonstrates a deeper understanding of the relative nature of preferences. This study takes a developmental approach toward understanding a central aspect of human cognition—the capacity and relative ease of incorporating social information into our decisions. Thus, children's choice behavior is grounded in a reasoning process that incorporates social information into their evaluation of options. It extends beyond information gleaned from observing others' actions and goal-directed behavior, incorporating children's knowledge of others' mental states. Future studies will build on these findings to reveal the extent of social influences on the development of preferences.

## Acknowledgments

Thanks go to Pascal Boyer for his thoughtful and insightful comments on this research. We are grateful to the parents and children who participated in the study and to all of the members of the Washington University Cognition & Development Lab for their assistance.

## References

- Ariely, D., & Norton, M. I. (2008). How actions create—not just reveal—preferences. *Trends in Cognitive Science*, 12, 13–16.
- Asch, S. E. (1956). Studies of independence and conformity: A minority of one against a unanimous majority. *Psychological Monographs: General and Applied*, 70(9, Whole No. 416).

Please cite this article in press as: Hennefeld, L., & Markson, L. If you don't want it, neither do I: Social influences on children's choices. *Journal of Experimental Child Psychology* (2015), <http://dx.doi.org/10.1016/j.jecp.2015.07.001>

- Birch, S. A. J., Vauthier, S. A., & Bloom, P. (2008). Three- and four-year-olds spontaneously use others' past performance to guide their learning. *Cognition, 107*, 1018–1034.
- Brehm, J. W. (1956). Postdecision changes in the desirability of alternatives. *Journal of Abnormal and Social Psychology, 52*, 384–389.
- Chen, M. K., & Risen, J. L. (2010). How choice affects and reflects preferences: Revisiting the free-choice paradigm. *Journal of Personality and Social Psychology, 99*, 573–594.
- Cluver, A., Heyman, G., & Carver, L. J. (2013). Young children selectively seek help when solving problems. *Journal of Experimental Child Psychology, 115*, 570–578.
- Corriveau, K. H., Fusaro, M., & Harris, P. L. (2009). Going with the flow: Preschoolers prefer nondissenters as informants. *Psychological Science, 20*, 372–377.
- Csibra, G., & Gergely, G. (2009). Natural pedagogy. *Trends in Cognitive Sciences, 13*, 148–153.
- Deutsch, M., & Gerard, H. B. (1955). A study of normative and informational social influences upon individual judgment. *Journal of Abnormal and Social Psychology, 51*, 629–636.
- Diesendruck, G., Salzer, S., Kushnir, T., & Xu, F. (2015). When choices aren't personal: The effect of statistical and social cues on children's inferences about the scope of preferences. *Journal of Cognition and Development, 16*, 370–380.
- Egan, L. C., Bloom, P., & Santos, L. R. (2010). Choice-induced preferences in the absence of choice: Evidence from a blind two choice paradigm with young children and capuchin monkeys. *Journal of Experimental Social Psychology, 46*, 204–207.
- Egan, L. C., Santos, L. R., & Bloom, P. (2007). The origins of cognitive dissonance: Evidence from children and monkeys. *Psychological Science, 18*, 978–983.
- Fawcett, C., Kushnir, T., & Markson, L. *Do infants learn about objects' value from others' choices?* Unpublished manuscript.
- Fawcett, C. A., & Markson, L. (2010a). Children reason about shared preferences. *Developmental Psychology, 46*, 299–309.
- Fawcett, C. A., & Markson, L. (2010b). Similarity predicts liking in 3-year-old children. *Journal of Experimental Child Psychology, 105*, 345–358.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Evanston, IL: Row & Peterson.
- Gerald, H. B., & White, G. L. (1983). Post-decisional reevaluation of choice alternatives. *Personality and Social Psychology Bulletin, 9*, 365–369.
- Graham, S. A., Stock, H., & Henderson, A. M. E. (2006). Nineteen-month-olds' understanding of the conventionality of object labels versus desires. *Infancy, 9*, 341–350.
- Herrmann, E., Hernandez-Lloreda, V., Call, J., Hare, B., & Tomasello, M. (2010). The structure of individual differences in the cognitive abilities of children and chimpanzees. *Psychological Science, 21*, 102–110.
- Hsee, C. K. (1998). Less is better: When low-value options are valued more highly than high-value options. *Journal of Behavioral Decision Making, 11*, 107–121.
- Jaswal, V. K. (2010). Believing what you're told: Young children's trust in unexpected testimony about the physical world. *Cognitive Psychology, 61*, 248–272.
- Jaswal, V. K., & Neely, L. A. (2006). Adults don't always know best: Preschoolers use past reliability over age when learning new words. *Psychological Science, 17*, 757–759.
- Koenig, M. A., & Harris, P. L. (2005). Preschoolers mistrust ignorant and inaccurate speakers. *Child Development, 76*, 1261–1277.
- Kushnir, T., Xu, F., & Wellman, H. M. (2010). Young children use statistical sampling to infer the preferences of other people. *Psychological Science, 21*, 1134–1140.
- Liszkowski, U., Carpenter, M., Henning, A., Striano, T., & Tomasello, M. (2004). Twelve-month-olds point to share attention and interest. *Developmental Science, 7*, 297–307.
- Ma, L., & Xu, F. (2011). Young children's use of statistical sampling evidence to infer the subjectivity of preferences. *Cognition, 120*, 403–411.
- Repacholi, B. M., & Gopnik, A. (1997). Early reasoning about desires: Evidence from 14- and 18-month-olds. *Developmental Psychology, 33*, 12–21.
- Sharot, T., De Martino, B., & Dolan, R. J. (2009). How choice reveals and shapes expected hedonic outcome. *Journal of Neuroscience, 29*, 3760–3765.
- Shutts, K., Banaji, M. R., & Spelke, E. S. (2010). Social categories guide young children's preferences for novel objects. *Developmental Science, 13*, 599–610.
- Shutts, K., Kinzler, K. D., McKee, C. B., & Spelke, E. S. (2009). Social information guides infants' selection of foods. *Journal of Cognition and Development, 10*, 1–17.
- Sobel, D. M., & Kushnir, T. (2013). Knowledge matters: How children evaluate the reliability of testimony as a process of rational inference. *Psychological Review, 120*, 779–797.
- Stenberg, G. (2009). Selectivity in infant social referencing. *Infancy, 14*, 457–473.
- Tomasello, M., Carpenter, M., Call, J., Behne, T., & Moll, H. (2005). Understanding and sharing intentions: The origins of cultural cognition. *Behavioral and Brain Sciences, 28*, 675–735.
- Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science, 211*, 453–458.
- Vaish, A., Grossmann, T., & Woodward, A. (2008). Not all emotions are created equal: The negativity bias in social-emotional development. *Psychological Bulletin, 134*, 383–403.
- VanderBorghet, M., & Jaswal, V. K. (2009). Who knows best? Preschoolers sometimes prefer child informants over adult informants. *Infant and Child Development, 18*, 61–71.