Brief Report

The impact of counter-perceptual testimony on children's categorization after a delay

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ABSTRACT

When preschoolers are presented with a label for an entity that conflicts with its appearance, they sometimes rely on the new label rather than on the entity's appearance to categorize the entity and to infer its properties. We examined whether children's learning from such claims is short-lived or long-lasting and whether the persistence of their learning depends on the degree of fit between those claims and the available perceptual evidence. Children aged 3–5 years ($N = 71$) were asked to categorize hybrids. These hybrids combined 75% of the features from one animal or object with 25% of the features from a different animal or object. After categorizing each hybrid, children heard an informant provide a contrary label. Immediately after they were provided with this new label, children often recategorized the entities accordingly, especially when the label matched the hybrid's predominant features. Children's endorsement of the informant's label proved to be long-lasting when it matched the hybrid's predominant features, typically persisting even after 5 weeks. In contrast, children's endorsement often faded over time when the informant's label did not match the hybrid's predominant features. Overall, children were more skeptical of testimony that was more discrepant with the perceptual evidence available to them, and they were less likely to continue endorsing it after a delay. The findings have implications for our understanding of how children eventually come to represent and believe in counter-perceptual and counterintuitive concepts.

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Introduction

Counterintuitive and counter-perceptual aspects of the biological and physical world are, by their nature, not readily apparent. Thus, when learning about these natural phenomena, children must rely on the testimony of others (Harris & Koenig, 2006; Lane & Harris, 2014). Indeed, testimony does appear to be an effective means of acquiring some of these concepts. In an influential set of studies, Gelman and Markman (1986) and Gelman and Markman (1987) showed that when preschoolers are presented with a label for an animal that conflicts with several of the animal's physical features, they often rely on that label rather than on its appearance to assign the animal to a category and to make inductive inferences about its properties. However, children do not blindly trust what they are told; their endorsement of counter-perceptual testimony is moderated by the fit between the claim and the perceptual evidence that is available to them. Young children are more willing to defer to an informant's claim when it is supported by (at least) some perceptual evidence than when it completely conflicts with that evidence (Bernard, Harris, Terrier, & Clément, 2015). Yet, it is noteworthy that, even in cases where entities are clearly discrepant from the informant's label, some young children will at times endorse that label (e.g., Lane, Harris, Gelman, & Wellman, 2014).

Children's endorsement of counter-perceptual testimony appears to reflect belief change rather than compliance given that children will subsequently pass on counter-perceptual labels to a naive experimenter (Jaswal, Lima, & Small, 2009). However, children's acceptance of counter-perceptual testimony has been examined only at brief delays. For example, in Jaswal et al. (2009), children were asked to teach a naive experimenter only minutes after receiving an informant's testimony (see also Chan & Tardif, 2013). Thus, we do not yet know whether such counter-perceptual testimony has only an immediate impact or a long-term impact on children's categorization. The current study was designed to address this question and to explore whether any long-term impact of such testimony depends on its fit with the perceptual evidence. Given that children have better recall for story details that are less counterintuitive rather than more counterintuitive (Banerjee, Haque, & Spelke, 2013), we hypothesized that over time children would be more likely to continue endorsing testimony that was less discrepant rather than more discrepant with the visual evidence. This would partially explain why children's acquisition of counter-perceptual ideas and concepts is so difficult; even when children endorse such ideas and concepts immediately following instruction, their endorsement may be short-lived as they struggle to represent and encode the testimony into memory.

Thus, we asked two questions about the impact of the fit between the testimony and the visual evidence on children's categorization. First, we asked whether children are more likely to immediately endorse counter-perceptual testimony that is mostly consistent rather than only moderately consistent with the perceptual evidence. Second, we asked whether the *persistence* with which children endorse counter-perceptual testimony also depends on the fit between the label and visual features.

To address these questions, we asked 3- to 5-year-olds to categorize hybrid pictures of animals and objects (e.g., Bernard et al., 2015; Jaswal, 2004; Jaswal & Markman, 2007). These hybrids take 75% of their visual features from one animal or object and 25% of their visual features from a different animal or object (Jaswal et al., 2009). Immediately following children's initial categorization of each hybrid, an informant gave children testimony that ran counter to their initial judgment. Because children often choose to categorize these hybrids according to their predominant features, we can assess whether children are more likely to defer to an informant if the informant's classification of a hybrid is mostly consistent with the hybrid's visual features (because children initially selected the moderately consistent label) or only moderately consistent with the hybrid's visual features (because children initially selected the mostly consistent label). By asking children to recategorize the hybrids after a delay and varying the length of this delay between children, we can also answer our second research question: Is the persistence of children's endorsement moderated by the fit between the testimony and the hybrid's visual features?

Although previous research has not examined the long-term impact of counter-perceptual testimony, prior work does indicate that informant characteristics moderate children's encoding of testimony (Sabbagh & Shafman, 2009). As well, young children remember the characteristics of informants