Journal of Experimental Child Psychology 119 (2014) 54–72

Contents lists available at ScienceDirect

Journal of Experimental Child Psychology

journal homepage: www.elsevier.com/locate/jecp

Beyond irrelevant actions: Understanding the role of intentionality in children's imitation of relevant actions

Amy K. Gardiner *

Department of Psychology, Skidmore College, Saratoga Springs, NY 12866, USA

ARTICLE INFO

Article history:
Received 13 March 2013
Revised 18 October 2013
Available online 3 December 2013

Keywords:
Imitation
Intentionality
Irrelevant actions
Preschoolers
Evolution
Causal understanding

ABSTRACT

The current research examines how 3- to 5-year-old children use intentionality to understand the causal structure of objects in an observational learning context. Two studies are presented in which the intentionality of relevant actions was manipulated during toy retrieval demonstrations and contrasted with whether these actions remained relevant or were rendered irrelevant for the child's turn. Of interest were whether children would imitate the first action when it was demonstrated intentionally but rendered irrelevant and how they would approach the first action when it was demonstrated accidentally and remained relevant. Findings revealed that children did not align themselves with the demonstrator's intentions in Study 1, when apparatuses were transparent, but did follow the demonstrator's intentions in Study 2, when apparatuses were opaque. This suggests that when causality of relevant actions is unambiguous, children use their own causal reasoning abilities, but ambiguous causal structure prompts children to defer to a demonstrator. It is suggested that opaque relevant actions may represent a real life parallel to irrelevant actions, the imitation of which is motivated by inherent ambiguity.

Introduction

Social learning is a critical part of development and remains fundamental throughout the lifespan. Research on children's social learning abilities has revealed an early proficiency for learning by observ-

* Fax: +1 518 580 5319.
E-mail address: agardine@skidmore.edu

0022-0965/$ - see front matter © 2013 Elsevier Inc. All rights reserved.
http://dx.doi.org/10.1016/j.jecp.2013.10.008

ing the behavior of others. Many studies have investigated preschoolers' observational learning strategies within the domain of object use, focusing on the degree to which children copy observed actions. The study of preschoolers' imitation of *irrelevant actions*, which are causally unnecessary for completing a task, has become a focus for many researchers. Irrelevant actions were originally included in demonstrations of toy retrieval tasks to explore children's social learning strategies (Horner & Whiten, 2005). Of interest was whether children would emulate, broadly defined as copying an observed goal using means other than those observed, or whether they would imitate, broadly defined as copying an observed goal using the observed means. Emulation would require children to recognize that irrelevant actions were unnecessary and omit these actions from their performance, whereas imitation would require them to copy all observed actions, including the irrelevant ones. It was found that children did not emulate but instead chose to imitate, including the irrelevant actions, in their toy retrieval attempts (Horner & Whiten, 2005). Since this behavior was demonstrated, children's imitation of irrelevant actions has captured the interest of researchers around the world, whose varied approaches are gradually piecing together an understanding of this phenomenon (Flynn, 2008; Kenward, 2012; Lyons, Damrosch, Lin, Macris, & Keil, 2011; McGuigan, Makinson, & Whiten, 2010; McGuigan, Whiten, Flynn, & Horner, 2007; Nielsen, Moore, & Mohamedally, 2012; Simpson & Riggs, 2011).

The behavior of copying irrelevant actions is usually referred to as *overimitation*, but this term seemingly implies that children imitate something above and beyond what they observed. Thus, the term overimitation undermines the fact that when children imitate irrelevant actions they are actually imitating very precisely, copying everything that they observe, and can be reasonably characterized as a misnomer. Given this, the term *indiscriminate imitation*, implying that children imitate all observed actions regardless of causal relevance, is preferred and used in this article. In addition to providing greater accuracy in describing imitation of irrelevant actions, using the term indiscriminate imitation allows for a category in which children actually do perform observed actions in excess of what was demonstrated, a behavior that can be termed perseverative imitation (Gardiner, Greif, & Bjorklund, 2011).

Indiscriminate imitation has been demonstrated under a range of different conditions with children from industrialized nations (Horner & Whiten, 2005; Lyons et al., 2011; McGuigan et al., 2007) as well as traditional African Bushman communities (Nielsen & Tomaselli, 2010). Interestingly, the precision with which children imitate appears to increase during very early childhood under conditions where adults provide realistic demonstrations in which they appear knowledgeable, draw children's attention to the task at hand, and successfully achieve the task goal. In these circumstances, indiscriminate imitation of object use emerges reliably by 3 years of age and continues into adulthood (McGuigan et al., 2010). Studies with younger children and infants demonstrate that earlier imitation of object use under these conditions is selective, based on factors such as the physical rationality of the demonstrator's actions (Gergely, Bekkering, & Kiraly, 2002; Schwier, van Maanen, Carpenter, & Tomasello, 2006) and the level of the demonstrator's social engagement (Brugger, Lariviere, Mumme, & Bushnell, 2007; Nielsen, 2006). This suggests that during very early childhood infants and children may be more likely to rely on their own independent evaluation of object causal structure, but by the preschool age they become more likely to rely on a demonstrator to gain this knowledge.

Studying and explaining why children imitate irrelevant actions is interesting in its own right, but it is important to keep in mind that including intentionally performed irrelevant actions in demonstrations of object use occurs primarily in experimental settings. In real life, there should be no good reason for a knowledgeable individual to purposefully include irrelevant actions in a demonstration of object use. Thus, in their everyday learning of object use, children should almost always be observing and imitating *relevant* actions. Therefore, the current research does not focus on what indiscriminate imitation can tell us about why children imitate irrelevant actions. Rather, one aim of this work was to comprehend the phenomenon of indiscriminate imitation in a way that may have practical application to understanding how children learn about everyday objects as they observe demonstrations that do not include superfluous actions.

With similar reasoning, Gardiner and colleagues (2011) sought to place indiscriminate imitation in a functional framework, proposing that it might reflect an evolved learning mechanism. In that study, children were provided with demonstrations of object use in which irrelevant actions were performed with verbal markers to indicate that the actions were intentional ("There!") or accidental ("Whoops! I