



ELSEVIER

Available online at www.sciencedirect.com

SCIENCE @ DIRECT®

Cognitive Development 20 (2005) 407–421

COGNITIVE
DEVELOPMENT

Children's understanding of ambiguous figures: Which cognitive developments are necessary to experience reversal?

Martin J. Doherty^{a,*}, Marina C. Wimmer^{a,b}

^a *Department of Psychology, University of Stirling, Stirling FK9 4LA, Scotland, UK*

^b *University of Salzburg, Salzburg, Austria*

Abstract

In two experiments involving one hundred and thirty-eight 3- to 5-year-olds we examined the claim that a complex understanding of ambiguity is required to experience reversal of ambiguous stimuli [Gopnik, A., & Rosati, A. (2001). Duck or rabbit? Reversing ambiguous figures and understanding ambiguous representations. *Developmental Science*, 4, 175–183]. In Experiment 1 a novel Production task measured the ability to acknowledge both interpretations of ambiguous figures. This was as easy as and significantly correlated with a False Belief task, and easier than a Droodle task. We replicated this finding in Experiment 2, and also found that perceiving reversal of ambiguous figures was harder than either the False Belief or Production tasks. In contrast to previous findings, the Reversal and Droodle tasks were not specifically related. We conclude that children only attempt reversal once they can understand the representational relationship between the figure and its two interpretations. The process resulting in reversal however is hard, probably requiring additional developments in executive functioning and imagery abilities.

© 2005 Elsevier Inc. All rights reserved.

Keywords: Ambiguous figures; Theory of mind; Ambiguity; Executive function; Visual imagery

1. Introduction

This paper investigates at what age children are able to reverse ambiguous figures, and what conceptual abilities are necessary for this ability. Ambiguous figures are

* Corresponding author. Tel.: +44 1786 466 366; fax: +44 1786 477 641.

E-mail address: m.j.doherty@stir.ac.uk (M.J. Doherty).

pictures, which have two different interpretations such as the duck–rabbit (Jastrow, 1900), man–mouse (Bugelski & Alampay, 1961), and vase–faces (Rubin, 2000) (see Fig. 1). When informed adults view these figures they tend to experience them reversing from one interpretation to the other. Research by Rock and co-workers suggests that for this to happen, adults must know that the figure is ambiguous and what the interpretations are (Girgus, Rock, & Egatz, 1977; Rock & Mitchener, 1992; Rock, Hall, & Davis, 1994). This implies that reversal is a top-down active process. Perceivers must have a conceptual framework capable of representing that figures can have more than one interpretation, and the abilities necessary to bring about reversal.

However, some adults do experience reversals without being informed of the ambiguity. This might be because they have prior experience with ambiguous figures. Because young children are unlikely to have had such experience, Rock, Gopnik, and Hall (1994) (Gopnik & Rosati, 2001) examined spontaneous reversal in preschoolers. When uninformed of the ambiguity, and told to look at a figure for 60 s, no child ever reported reversal. These findings

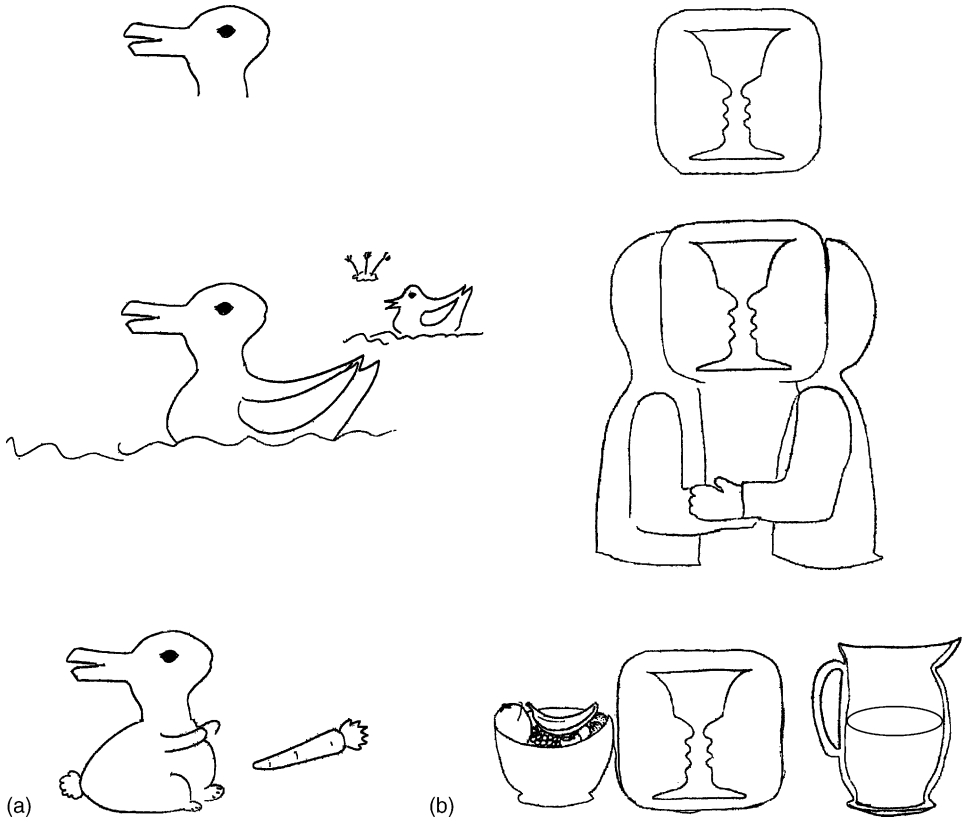


Fig. 1. (a) The duck–rabbit stimulus, alone and with disambiguating context pictures. (b) The vase–faces stimulus, alone and with disambiguating context pictures. (c) The man–mouse stimulus, alone and with disambiguating context pictures. (d) The Eskimo–Indian stimulus, alone and with disambiguating context pictures.

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات