Cognitive Development 36 (2015) 52–67

Contents lists available at ScienceDirect

Cognitive Development

Is children's naming and drawing of pictures mediated by representational intentions? Evidence from typical development and autism

Calum Hartley*, Melissa L. Allen

Department of Psychology, Lancaster University, Lancaster LA1 4YF, United Kingdom

ARTICLE INFO

Article history:
Received 15 September 2014
Received in revised form 10 August 2015
Accepted 14 August 2015
Available online 5 September 2015

Keywords:
Picture comprehension
Drawing
Understanding intentions
Resemblance
Autism

ABSTRACT

Research has debated whether shape or inferred referential intent directs children's picture naming. Here we investigate whether typically developing (TD) children aged 2–5 years and children with autism spectrum disorder (ASD) comprehend pictures differently depending on whether they are intentional symbols. Participants were shown ambiguous line drawings and were informed that they were either intentional or accidental creations. Children were asked to name and draw each picture. TD children only evidenced a preference for shape-based naming when pictures were intentional representations, and were increasingly likely to create canonical drawings of symbolised referents when stimuli were intentional. Representational intentions did not influence the verbal or drawing responses of children with ASD, however, the nature of their drawings was related to their prior naming. Thus, the meaning that TD children derive from 2-D shapes is mediated by referential intent, while picture comprehension in autism may be comparatively egocentric.

© 2015 Elsevier Inc. All rights reserved.

1. Is children's naming and drawing of pictures mediated by representational intentions? Evidence from typical development and autism

Pictures are symbols for entities that exist independently in time and space. Because they are intended to symbolise real objects, it is the cultural norm to assign object names to 2-dimensional representations (i.e. real monkeys and monkey pictures can be referred to with the word "monkey"). Previous research has debated over the cues that direct picture naming in typically developing (TD) children. One possibility is that children simply label shape, without reflecting on factors that are external to the perceptible image (i.e. if an image is shaped like a cat, it is "a cat"; Browne & Woolley, 2001; Freeman, 1991; Freeman & Sanger, 1995). Alternatively, children might label pictures according to artists' referential *intentions* (i.e. a picture is "a cat" only if it was created with the intention of representing a cat; Bloom & Markson, 1998; Gelman & Ebeling, 1998; Hartley & Allen, 2014). Our research has two primary aims: we investigate the influence of intention reading on picture interpretation in TD children aged 2–5 years, and also examine how children with intention monitoring difficulties derive meaning from pictures. Children with autism spectrum disorder (ASD) have great difficulty understanding the mental states of others (Allen, 2009; Baron-Cohen, Baldwin & Crowson, 1997; Charman et al., 1997; Griffin, 2002; Hartley & Allen, 2014; Hobson, 2002), therefore studying this population can provide additional evidence for the role of intention reading in typical pictorial understanding *and* highlight potential differences in their processing.

* Corresponding author. Fax: +44 1524 593 856.
E-mail addresses: c.hartley@lancaster.ac.uk (C. Hartley), melissa.allen@lancaster.ac.uk (M.L. Allen).

http://dx.doi.org/10.1016/j.cogdev.2015.08.002
0885-2014/© 2015 Elsevier Inc. All rights reserved.

Several studies have investigated whether TD children reflect on referential intentions when naming pictures. Browne and Woolley (2001) showed 4- to 7-year-old TD children and adults a puppet show in which the protagonist announced his intention to draw a bear, but actually produced a picture that resembled a rabbit. Subsequently, the majority of each age group named the picture according to its shape (e.g. a rabbit) rather than the artist's stated intention (e.g. a bear). This finding suggests that, when viewing images that are sufficiently recognisable, TD children assign labels based on shape rather than intentions. However, by employing pictures that unambiguously resemble familiar nameable objects other than their intended referents, children are presented with an unusual and confusing test situation. As it is extremely irregular to encounter a drawing that is intended to represent X, but uniquely resembles Y, participants in these circumstances may disregard the artist's intentions in an attempt to reconcile the conflicting cues. While it is unlikely that an artist would draw one object whilst intending to represent something else, it is culturally acceptable to assign meaning to *ambiguous* images (e.g. abstract art, infant scribbles). Indeed, examining how children interpret ambiguous pictures can provide a more ecologically valid method of assessing the relative importance of resemblance and representational intent to children's picture naming (Hartley & Allen, 2014).

In their often-cited study, Bloom and Markson (1998) asked TD 3- and 4-year-olds to draw pairs of objects that closely resembled each other, such as a balloon and a lollipop. Predictably, the pairs of pictures produced by the young children were virtually indistinguishable, and thus could not be accurately matched to their original referents based on shape alone. Nevertheless, when asked to name their drawings after a distracter task, both age groups correctly and consistently discriminated based on their original representational intentions. Bloom and Markson (1998) propose that "children might call a picture that looks like a bird "a bird" not merely because it looks like a bird, but because its appearance makes it likely that it was created with the intent to represent a bird" (p. 203). In other words, TD children might name shape only insofar as it provides an index of representation. Gelman and Ebeling (1998) tested this theory by directly measuring whether children's naming of 2-D shapes is mediated by whether they are *intended* to be representational. In their study, TD 2-and 3-year-olds were shown a series of line drawings roughly shaped like familiar nameable objects (e.g. a kite). Some children were informed that the pictures had been created intentionally (e.g. someone painted a picture), while others were told that the pictures had been created by accident (e.g. someone spilled some paint). When asked to label the pictures, children were more likely to name according to shape when they believed that the images were intentional creations, and provided more literal non-symbolic responses (e.g. naming materials such as "paint") when they were made accidentally. Thus, the tendency of TD children to name a picture's shape may be influenced by representational status, which is ultimately determined by the intentions of its creator.

To advance theoretical understanding of how intentions mediate picture comprehension in typical development, it is necessary to utilise complementary methodologies that tap into conceptual representation over-and-above verbal labelling (Karmiloff-Smith, 1990). If a TD child believes an ambiguous collection of lines was created with the intention of representing a familiar object, asking them to draw that stimuli may lead to the depiction of additional details that correspond with the symbolised referent. Increasing the level of picture-referent resemblance could be taken as further confirmation that the child genuinely regards the image to be a symbol, despite the relatively low degree of iconicity. Conversely, if a different child believes that the same collection of lines was created by accident, and infers it to be non-representational, their graphic reproduction might be more faithful to the perceived stimuli.

Potentially independent of an intentionality effect, children's graphic copies of ambiguous shapes might be influenced by their own verbal labelling. Previous research investigating TD children's drawing of objects has shown that they selectively represent different details depending on its designated label (Krascum, Tregenza, & Whitehead, 1996; Lewis, Russel, & Berridge, 1993; Pickard & Vinter, 1999). For example, Lewis, Russell, and Berridge (1993) asked 5-year-olds to draw a tankard from an unusual perspective (its handle was occluded), after it was called "a mug", "a glass" or "this". They found that children depicted the occluded handle in 69% of "mug" trials, 48% of "this" trials and 27% of "glass" trials. It was likely that the labels "mug" and "glass" directed children's attention away from the perceived stimuli, and towards conceptual knowledge about the object referents of the labels (Toomela, 2002). As TD children are highly aware of others as attentional and intentional agents (e.g. Carpenter, Akhtar, & Tomasello, 1998; Gergely, Nadasdy, Csibra, & Biro, 1995), they might be more likely to name and canonically represent ambiguous figures that they judge to be intentional, rather than accidental, creations. However, it is possible that children who assign object names to accidentally created figures may also produce increasingly canonical graphic copies, suggesting that egocentric verbal labelling can influence children's drawings in the absence of inferred communicative intentions.

If intention reading is an important component of children's picture comprehension, we might expect to observe important differences in children with ASD. ASD is a pervasive neurodevelopmental disorder that is characterised by profound social-cognitive deficits (Baron-Cohen, 1995; DSM-IV: American Psychiatric Association, 1994; Frith, 2003; Kanner, 1943). Many children with ASD have great difficulty understanding the mental states of others, including their intentions (Baron-Cohen, 1995; Charman et al., 1997; Griffin, 2002; Hobson, 2002; Mundy & Willoughby, 1996). Deficits in intention reading permeate numerous aspects of autistic development, including children's understanding of goal-directed actions (D'Entremont & Yazbek, 2007; Hartley & Allen, 2014), word-referent mapping (Baron-Cohen, Baldwin, & Crowson, 1997; Preissler & Carey, 2005) and picture-object mapping (Allen, 2009; Hartley & Allen, 2014). For example, in their recent paper, Hartley and Allen (2014) reported that minimally-verbal children with ASD do not reflect on artists' intentions when mapping pictures to objects. While TD toddlers related abstract pictures to intended referents they did not resemble, children with ASD mapped the same pictures to *non-intended* referents they happened to resemble. However, it is not yet known whether

Download English Version:

https://daneshyari.com/en/article/916488

Download Persian Version:

https://daneshyari.com/article/916488

Daneshyari.com