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Children readily think about people's minds when they think about artworks

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Abstract

Art education includes activating two sources for developmental change. One resource that can be called upon to promote developmental change is external to the child, encouraged by teaching and by exposure to artworks. The other resource acts as a pacemaker internal to the child's own cognitive development, facilitated by some conception of the minds of artists and viewers. Studies show how children become interested in the intentions which give rise to artworks and to subsequent exhibition to the viewing public. A natural grasp of intention is readily activated in experimentation by psychologists; and might profitably be mobilized by educators in helping children develop their ideas about possible relations between artworks, artists, and viewers.

Keywords: Cognitive development, representation, pictures, theory of mind, intention, art

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Engagement with the visual arts involves understanding a diversity of matters, including opportunities for innovation in what artists produce and how they produce it. Art schools have to negotiate creative balances between artworking as a productive art-activity and artworking as art-education. Education plays a huge role in the arts by virtue of an unwavering focus on processes of change, and of encouragement to students to hold onto the fruits of change. There are two great continuously-generative resources that can be called upon to promote developmental change. The resource originating outside the individual (exogenous resource) encompasses both provision of explicit education and exposure to art-displays, which educators hope to call upon. There is not enough study of possible effects of contexts of display of artworks (see Brieber, Leder & Nadal, 2015a,b), and we shall set that topic aside for the remainder of this article. The other great resource originates from inside the child, endogenously, whereby a powerful conceptual and emotional intelligence can be brought to bear by the individual on a range of aspects of the artworld they may be currently engaged with. The challenge is to devise studies which pinpoint how the two categories of resources tessellate; and to give pointers on how creative change may be fostered. Different aspects of the visual arts domain involve different aspects of how educators can best harness the power of an endogenous resource to promote either the child's production of art, understanding of the meaning of an artwork, or both. For people interested in such matters, the name of Ellen Winner keeps cropping up.

Winner (1988) seems presciently to have got it right about a productive understanding of verbal metaphor emerging round about the age of 11 years, and it much later transpired that that might be a phase in which endogenously-triggered use of pictorial metaphor can be evident (Chao & Kennedy, 2015). Winner's research puts a focus on creative processes, how students make sense of the arts, how they learn by reflection, what might be the reasoning

behind the answers they give to questions, and what might be fresh avenues of investigation (as in Goldstein, Lerner & Winner, 2017). The heart of the current article is to explain why that continuing strand of her research effort looks to be a very good thing. There is the matter of the fine quality of her empirical work, of course; but just as important is how well her studies continue to intersect with studies by other researchers who are concerned with both endogenously-paced growth and exogenously-paced education.

The end of the twentieth century turned out to be high time to collate some of the diverse concerns in art education. Winner's name is appropriately scattered throughout the first art education handbook, which appeared in 2004. A handbook is conventionally taken to be a monumental marker that an area has accumulated a body of scholarship, argument, puzzles and evidence worthy of note (Eisner & Day, 2004). A handbook is not the only such sign of disciplinary maturity, and many people make very little use of one in their day-to-day practice. But it is the absence of a handbook in any taught area that is always striking. A handbook can stimulate collation of landmarks in an area, giving a map, or perhaps a set of itineraries for individuals to follow. There are many landmark studies to collate, for the practice of art education has been going on for many decades. As a matter of fact, the first controlled empirical study of children's drawing-production was written for an education collection by Clark (1897). As the art-education handbook editors Eisner and Day (2004) noted at the start of their introduction, other areas of much shorter pedigree had long had handbooks. It is an interesting matter of debate why it took so very long for art-education scholarship to be monumentally concentrated. Merely a matter of creative disunity? Ellen Winner has fair claim to be one of those researchers who is continuing to contribute a vision which has unifying potential.

Yet the concept of a unified endeavour is not one which a handbook need necessarily promote. Indeed, many people resist any notion of unification for creative arts. Eisner himself

warned against any tendency towards an ‘assembly-line’ model of schooling (Eisner, 2002). Resistance to unification does not apply to all educational endeavours, of course: zoologists for instance necessarily unite around the principle of evolutionary change over deep time. A quick survey of studies in the visual arts is enough to reveal how different researchers put a limited number of different concepts at the centre of their analyses. For example, some investigators accord priority to a concept of artworks, some to the artists as agents, some to the viewing public, and so on, as they judge appropriate to their approaches (Freeman, 2004). Ellen Winner shows flexibility of focus, but in addition has particular strength here. The strength is to take from experimental psychology the concept of the child developing very early on an interpretative theory of mind encompassing the idea that people have diverse and often divergent mental states. It becomes then natural to characterise engagement with artworks as, to use the title of Hawley-Dolan and Winner (2011), ‘Seeing the mind behind the art’. Or as Myers and Liben (2012) chose for the title of one of their experiments: ‘Graphic symbols as “the mind on paper”’. Or ‘How children’s mentalistic theory widens their conception of pictorial possibilities’ (Gilli *et al*, 2016). In sum, the challenge arises of investigating how a ‘theory of mind’ might serve a child in understanding and engaging with pictures (Kerkin, 2009; Richert & Lillard, 2002).

Students of various ages become reflectively aware of the importance of the fact that people have intentions, ideas, feelings, aspirations: all the mental states that pertain to agency. Such mental states are crucial to engagement with the artworks that agents generate and viewers respond to. A conception of what it is to be human plays out in practice in resources that students bring to art education. The establishment of intersubjectivity is a prime aspect of fostering creativity. Children even younger than 7 years of age can often pick out abstract impressionist artworks from amongst superficially similar works, revealing something of ‘the human tendency to ferret out intentionality’ (Snapper *et al*, 2015, p. 154).

One wants to know whether, and to what extent, children carry over that ferreting into art exhibitions and the like. There is evidence of reflective awareness that young children themselves as viewers are looking for signs of effort apparently put into the production by the agent (Nissel, Hawley-Dolan, & Winner, 2016).

Winner's experiments span topics internal to the field of experimental psychology (such as young children's grappling with the problem of relations between appearance and reality) to topics integral to the visual arts (such as those in Project Zero). In sum, Winner is concerned with laying a mentalistic trail through a map of the visual arts. We noted above that her work is not isolated but tessellates well with the work of others. Let us pick out a paper mentioned in the paper by Snapper *et al* (2015), that of Bloom and Markson (1998). Bloom and Markson studied one of the most fundamental aspects of depiction. Given that a scrawny little stylised sketch of a few lines, say a circle and a straight line, can be confidently asserted by even young children to 'be' a properly rounded balloon on a stretch of string, how much weight does pictorial appearance itself play in comparison with what the artist intends? Implemented intention involves a mind-to-picture mapping, whilst pictorial appearance involves a picture-to-world mapping. Considering states of the world, a lollipop can be represented by a circle and line just as well (or badly) as can a balloon. The drawn lines are plurifunctional: a circle can represent a disk or a sphere (or indeed a hole or a hoop). Will pre-schoolers allow a verbal label to act as a constraint on interpretation of the picture? That is, how does a potential opposition between appearance and intention play out in practice (Armitage & Allen, 2014)? Bloom and Markson reported that that young children indeed often remembered the artist's intent and brought their picture-interpretation into line with that intent (sometimes resolutely so, noted the authors in the discussion section of their paper). The study thus puts at the centre of attention the mind as a property of an agent bringing order to a page-surface. That accords with the mind-centred aspect of Winner's endeavour we

have been tracking here. As Browne and Woolley (2001, p. 1) commented, ‘Research suggests that children engage in mentalistic reasoning in their identification of drawings and other artifacts’.

In relation to education, there used to be resistance to the idea of asking children to identify a possible referent for her drawing or scribble. Yet whenever an adult asks a child about her drawing ‘what’s that?’ the adult is transmitting the message ‘you’re the authority here, take the opportunity to take charge’ which is a big thing in a young child’s life. That is, sociologically speaking, the adult is inducting the child into conventions of agency. Providing opportunities for agency and autonomy when making external artifacts can have a positive impact on conceptual development (Sheridan et al., 2014) and creativity (Jaquith, 2011), leading to meaningful learning experiences (Griffin et al. 2017). Psychologically speaking, the adult is starting to make explicit the utility of reflecting on a mental state. Intention is basic in the relations between mind and action. Of course, intent isn’t simple: an artist may not be reflectively aware of some intentions which remain undeclared compared with intentions habitually brought more regularly to mind, and much may go differently during production so that the product veers away in its own direction. In particular, a conception of intent as constraining, but not fully determining meaning, (see Seeley, 2013) must leave room for serendipity, for an artist’s adoption of emergent felicitous effects. But even so, a fundamental question, as far as endogenously-paced development is concerned, is ‘when does declared intent bind interpretation of the outcome?’ Intent is a part of any artifact’s history, and it is known that history plays an increasingly important role in the development of decisions on naming artifacts in general (Gutheil et al, 2004).

We explored the question of how powerful intent can be in a short series of studies. The objective ultimately was to elucidate how ‘holding a flexible stance towards pictures involves an awareness that an artist’s intent might well determine what a drawing is *of*, but

cannot constrain what the same drawing *could be of* or *could be seen as*. Both aspects, intent and possibility, are traceable from preschool to adult' (Allen, Nurmsoo & Freeman, 2016, p. 27). In that study, an experimenter acted as the artist in the situation, and declared what she intended to draw (e.g., a lollipop) and made a simple sketch of a circle on a straight line. Children were asked whether the drawing could be of something different, such as a balloon. Six-year-olds accepted two labels for a drawing, so for them a drawing could be both of a balloon and of a lollipop. But four-year-olds only accepted both possibilities in a condition in which there was a very different drawing also visible (e.g., a drawing of a snake). Experiment 2 probed each possible interpretation more deeply by asking real-world property questions associated with each (e.g. does it float?, does it taste good?). Pre-schoolers who understood that the ambiguous drawing could be given two interpretations nevertheless mostly endorsed only properties associated with the prior intent. The original intent lingers on in their minds, even when they realise that a new viewer maybe has a fresh vision. Experiment 3 provided converging evidence that 4-year-olds could be representationally flexible enough to grant permission for a playmate to use a lollipop drawing to stand for a balloon in a game. Such four-year-old flexibility arises during a phase of remarkably rapid development in mentalistic understanding. In an earlier phase of development, internally-developing attentiveness to intention-cues combines with attentiveness to verbal pedagogic input about how the adult drew the picture, so as to promote an understanding of pictures (Salsa & Vivaldi, 2015). In a later phase, as children become more adept at art-production, the challenge for the child is to make the intentionality visible without explicit captioning or verbal explication, just by art-production skills serving the emerging representational quality of the images (Jolley, Knox, & Foster, 2000). A challenge for the viewer is to detect how signs of expertise (such as adult vs. child vs. animal as art maker) bear on the identification of agency (see Ahlvarez et al, 2015).

To take a wider view of the child's encounters with mind in the visual arts domain, artists mobilise varying intentions. Those include artists' intention to display their pictures to others. Without quite a deep understanding of the mind, a child cannot make sense of transgressive acts such as an artist hiding her pictures away, or conversely, a fake being offered for display (Freeman & Allen, 2013). Such cases were reported on by Gilli, *et al* (2016). Thirty children aged between five and ten years of age watched a brief video of an artist hiding her picture, only for that picture to be later discovered and put on exhibition. Thus, the artist remained historically still the producer of the picture, but her perverse-seeming intention to deprive viewers of sight of the picture had been thwarted. By the age of eight years, children were almost unanimous that even though the artist did indeed produce the picture, without an intention to show her work to others she becomes disqualified from being considered to be an artist. In addition, the children were unanimous that only originals directly from the artist's hand should be displayed in galleries. Failing that, if fakes were displayed, 14/30 children affirmed that the public might lose trust in the institution. That is, as far as can be made out, a new indication of a truly acute intersubjective vision of possible effects of artworks on viewers emerges. One can set such insight within the tradition of research that maps children's shifting criteria for authenticity in an artwork's history of production (e.g. Frazier & Gelman, 2009; Newman & Bloom, 2012). An increasingly mentalistic stance ensures that the foundations are laid down for a conception of communication between artists' minds and viewers' minds via pictorial display (Freeman, 2004). Encounters with art and artifacts entail encounters with minds (Diesendruck, Markson & Bloom, 2003; Myers & Liben, 2012). And even young children intuitively know that it is so (see also Preissler & Bloom, 2008).

The take-home message regarding the contribution of Ellen Winner's impressive career of research encompasses the importance of combining endogenous and exogenous

resources to support art production and understanding as it unfolds across developmental space. The rigorous design of her experimental methodology focusing on the endogenous resource provides a particular focus on the importance of the mind, while the consideration of art education and how it can be supported serves to highlight exogenous influences. Taken together, one can develop a fuller understanding of the aesthetic reasoning that might be thought of as a person's theory of pictures (Freeman, 2011; Freeman & Sanger, 1995).

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