

## The development of visual art preferences

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### Abstract

The development of visual art preferences is an understudied area in aesthetics research. Yet, it is necessary to understand how our aesthetic appreciation emerges and what factors influence this process during development. A good framework to study early art appreciation with infants and young children requires an examination of the interactions among different components of aesthetic experience (sensation, knowledge, and emotion). This line of research can help identify general perceptual primitives in visual art preferences and how they diverge across development and culture. This review will propose a model to study early development of art preferences.

**Keywords:** developmental aesthetics; infants; visual art

How do young children experience art and what guides their preferences for artwork? For adults, both subjective and objective factors interact to drive people's preferences for visual art (Leder et al., 2004). Shimamura (2012) suggests that aesthetic experience involves three key components: sensation, knowledge, and emotion, and a good framework for experiencing art needs to involve them (Chatterjee, 2013). Aesthetic experiences are also proposed to emerge from the interaction of different neural systems: sensory-motor, emotion-valuation, and meaning-knowledge (Chatterjee & Vartanian, 2014). The key question in developmental aesthetics is how these components and systems interact from early on in a person's life? One way to approach this question is to examine developmental trajectories of each component and the interactions among them. Infant studies allow us to examine the aesthetic triad in which the meaning-knowledge component is minimized. In adults, the relative contribution of each part of the triad in appreciating artwork is difficult to test. In this review, we will present the current state of the field on young children's preferences for art and propose a model to study the development of visual art preferences.

### Infants' Visual Attentional Preferences

Research on how very young children experience art and what influences their preferences in artwork is scarce. Yet, mounting evidence from infant studies demonstrates that during the first year of life infants develop the necessary low-level perceptual abilities to perceive visual art. Here, we selectively review the literature on infants' attentiveness to certain features, colors, faces, and scenes that might guide and inform about their preferences of visual arts.

In the first 6 months after birth, infants have visual acuity (Kellman & Arterberry, 2006), depth perception (Yonas, Elieff, & Arterberry, 2002), and color vision (Suttle et al., 2002) comparable to adults. Sensitivity to red and green is present by 2 months of age (e.g., Dobkins, Anderson & Kelly, 2001), and sensitivity to blue and yellow is found at around 3-4 months of age (Suttle, Banks, & Graf, 2002). However, Taylor and colleagues (2013) showed that infant color preferences might be different than adults. For example, infants do not always prefer the colors that are preferred by adults (e.g., blue hues; but see Zemach, Chang, & Teller, 2007). This suggests that the preferences toward certain color hues might not be innate, or of innate continue to evolve in early development. For colors such as red, the findings are mixed. While most studies suggest that infants have a looking preference for red (Franklin et al., 2010), some research suggests this preference is not strong (Zemach et al., 2007).

Moreover, infants are sensitive to pictorial cues such as texture gradients, line junctions, and shading (e.g., Bertin & Bhatt, 2006; Arterberry, 2008; Imura et al., 2008). They also show preference to patterns with more elements, more curved lines, and symmetrical patterns (Bornstein, Ferdinandsen, & Gross 1981; Fantz & Miranda, 1975).

Even though there are some general findings on infants' visual abilities, research in early preferences mainly examines infants' preferences to faces. The accumulating evidence in this area is in line with infants' visual sensitivities. In particular, infants are attracted to symmetrical human face and face-like configurations (Langlois et al., 1987; Kellman & Arterberry, 2006). Infants as young as 4 months prefer attractive faces that are also rated as aesthetically attractive by adults. Yet, this preference seems to be independent of vertical symmetry of the face (Samuels et al., 2013). Studies with older children also suggest that attractiveness to symmetrical faces gets stronger after 5 years of age (Vingilis-Jaremko & Maurer, 2013). Thus, face attractiveness seems to be modified by experience. The fact that 3-month-old infants, but not newborns, prefer their own-race faces compared to other-race faces supports the role of environment and experience in infants' early preference tendencies (Kelly et al., 2005).

Do infants also prefer certain scenes in the environment to others? This is an understudied area of research. Among the very few studies, Bornstein and colleagues (2011) found that although infants looked at natural vs. experimental scenes (e.g., a lion in a forest vs. a lion in a different context) the same amount of time, there were more fixations to objects in the natural scenes than in the experimental scenes. In addition, infants can attend to the person-background relation and be sensitive to changes in the background with dynamic actions (Göksun et al., 2011). Thus, they can tease apart the components in a natural environment. Nevertheless, the state of the field is still not clear about how infants attend to natural scenes (e.g., landscapes) that might influence their visual art preferences.

Taken together, these studies present a picture on infants' attention allocation to certain stimuli over others. The question is how infants' initial perceptual primitives and biases relate to their preferences of visual art.

### **Infants' Visual Art Preferences**

To date only a few studies have examined infants' preferences for visual art (Cacchione et al., 2011; Krentz & Earl, 2013). In one of these recent studies, Cacchione and colleagues (2011) found that infants could categorize paintings based on genre. Using a habituation design, 9-month-old infants were habituated to either a Monet or a Picasso painting. At test, they were presented a new painting of a familiar category with a painting from the unfamiliar category. Results showed that infants preferred to look at the Picasso paintings after habituating to either Monet or Picasso paintings. They did not show a novelty preference after habituating to Picasso paintings. The follow-up experiments indicated that infants could discriminate between paintings by Picasso and Monet, but showed a preference for abstract paintings by Picasso. Interestingly, when salient features were modified (e.g., removing color information, blurring contours) infants still preferred the Picasso paintings. The

findings from this study suggest that infants' early aesthetic preferences might be guided by perceptual analysis of the painting. This preference of abstract art over representational art seems to be the opposite pattern that is found with artistically naïve adults. Individual differences are greater in people's preferences of abstract art compared to preferences for real world scenes (Vessel & Rubin, 2010). However, caution is needed while interpreting the results of this study. In a habituation study, it is difficult to directly talk about "infants' visual art preferences." The main premise of this study is whether infants categorize Picasso and/or Monet paintings similarly. The results suggest that infants could categorize different Picasso paintings together, but they were not very successful with Monet paintings. With this design, it is not clear whether they "like" the Picasso paintings more than the Monet paintings. As we know little about infants' preferences to natural scenes, it is difficult to make direct comparisons on how and why infants only categorize abstract paintings.

In another study with infants, Krentz and Earl (2013) found that, like adults, 6-month-old infants preferred original abstract art when its complexity and contrast were kept intact. Adults also prefer abstract expressionist art to very similar painting created by children or animals such as monkeys and elephants (Hawley-Dolan & Winner, 2011). These similarities in original abstract art preferences suggest that perceptual primitives could play a role in art appreciation starting at a very early age. Again, it is not clear what kind of abstract art infants prefer. For example, is it the patterns in abstract art more than objects that capture their attention? Another point that needs further attention is how initial objective factors are shaped by experience. As in the case of face attractiveness, infants' visual art preferences might be influenced by their environment from very early on.

### **Studying Infants' Visual Art Preferences**

Although the above-mentioned studies provide evidence for how early perceptual analyses may drive the development of preferences for visual arts, they do not display a full picture on what type of artwork infants prefer. To examine this question, we need to investigate very early stages of art appreciation – preferences of artwork. The relative impact of each piece in the aesthetic triad still needs to be addressed.

As Leder et al. (2004) proposed, for both aesthetic judgment and aesthetic pleasure, the first stage starts with perceptual analyses of the artwork. Then, with previous experience, implicit judgments (memory, familiarity with the artwork) will lead to explicit judgments (content, style) of art. In this respect sensation, emerged by perceptual analyses, will be intertwined with knowledge. For example, Lin and Thomas (2002) showed that 4-year-old children were similar to young adults in their responses to different art genres (abstract, modern, humorous, and cartoon art). Three- to 5-year-old children were also sensitive to the style in the

paintings (Steinberg & DeLoache, 1986). Yet, by preschool age children are already immersed in the values of their culture. A true analysis of these stages and their interactions require studying very young infants in a longitudinal design. In particular, to analyze the visual attributes infants prefer, one needs to study young prelinguistic infants first.

Rather than using discrimination studies, the first step should be the examination of infants' pure visual preferences. For instance, do young children prefer colorful, complex abstract paintings compared to colorful representations of nature? What guides their overall attention in those paintings beyond the low-level visual processing? How do low-level perceptual primitives interact with cultural and environmental factors (i.e., exposure to artwork from very early on)? The use of implicit judgment tasks such as eye-tracking and preferential looking can reveal early tendencies of children to visual art. Later, the same children can be tested by implicit and explicit aesthetic judgments at different time points to see the changes in children's preferences of artwork. This longitudinal methodology will allow us to understand the individual differences (both personal and environmental) in children's art appreciation.

In conclusion, we need to better understand how and which perceptual primitives guide attention to certain features in visual art. Studying infants and children are most likely to identify those visual attributes that are universally preferred as well as those that diverge across development and culture.

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