

## **INTERESTED EXPERTS, CONFUSED NOVICES: ART EXPERTISE AND THE KNOWLEDGE EMOTIONS**

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### **ABSTRACT**

Experts and novices differ in how they experience and understand art, and expertise in the arts moderates a wide range of aesthetic processes. The present research examined the role of expertise in the experience of interest and confusion, two knowledge emotions, particularly whether expertise moderated the cognitive appraisals that bring about the emotions. A sample of 174 people viewed and rated a series of abstract images taken from small-press publications. Expertise was measured with the aesthetic fluency scale (Smith & Smith, 2006), and multivariate multilevel models were used to estimate the effects of expertise and appraisals. As expected, people high in expertise found the images significantly more interesting and less confusing. The main effects of appraisals on interest and confusion replicated past work, and expertise interacted with most of the appraisals—the cognitive foundations of interest and confusion have different weights for experts and novices.

As all museum curators know, a lot of people know little about art. Expertise in the arts—knowledge gained through training, formal study, and experience—is an increasingly popular topic in arts research. One reason is because an applied goal of arts research is to enhance art education, viewed broadly; another reason is that expertise has widespread influences on outcomes that interest arts researchers. For example, experts, compared to novices, evaluate art differently (Hekkert & van Wieringen, 1996), have different emotional responses to art (Locher, Smith, &

Smith, 2001), conceive of art in more abstract ways (Parsons, 1987), prefer relatively more complex and abstract work (e.g., Millis, 2001), and literally view art differently, according to eye-tracking research (Locher, 1996).

The present research examined the influence of expertise on interest and confusion, two intriguing aesthetic states. As members of the family of knowledge emotions (Silvia, 2010), both interest and confusion shift in response to differences in knowledge and expectations (see Figure 1). Interest stems from people appraising an event as high in novelty, complexity, and uncertainty and as high in comprehensibility—things that strike people as new and unusual but also as possibly comprehensible are interesting (Silvia, 2005b, 2006b, 2008). Confusion, in contrast, has only recently attracted attention, but it has a parallel appraisal structure (Silvia, 2010). Like interest, it involves appraising an event as new, complex, or unexpected; unlike interest, it involves further appraising it as hard to understand and probably incomprehensible.

To date, interest has been widely studied in empirical aesthetics (e.g., Silvia, 2005a, 2006a; Tsutsui & Ohmi, 2011), largely due to Berlyne's (1971) groundbreaking work. Confusion has recently attracted some attention as a response to the arts (Silvia, 2010; Silvia & Berg, 2011), but most research on confusion has studied its facial and body expressions (e.g., D'Mello & Graesser, 2009). Expertise's effects on interest and confusion have not been as extensively studied as its effects on liking and preference, but some research has found differences between experts and novices. Several studies, for example, have found that experts find art more interesting (e.g., Millis, 2001; Silvia, 2006a). Only one study has considered confusion (Silvia & Berg, 2011): people with more knowledge about film found excerpts from submissions to a local film festival more interesting and less confusing.

The harder and more intriguing problem, however, is why experts and novices differ in their aesthetic experiences. A few approaches to understanding the effects of expertise have been proposed. In one approach, expertise leads to preferences that are more idiosyncratic: experts are more different from each other than novices are, in this view, because training in the arts leads to using criteria that are more distinctive, specialized, or differentiated. The process model of aesthetic experience (Leder, Belke, Oeberst, & Augustin, 2004) is a good example of this approach, and some research supports the notion of "idiosyncratic experts." A recent experiment (Leder, Gerger, Dressler, & Schabmann, 2012), for instance, found a decoupling of comprehension from preference: experts, relative to novices, were less strongly affected by an image's comprehensibility when forming preferences.

In another approach, however, experts are more similar to each other than novices are. As a result of formal training in the arts, experts share knowledge and constructs specific to the arts. Although individual experts surely vary in their preferences, experts as a group share art-specific conceptual knowledge of periods, theories, styles, techniques, and criticism (Lundy, 2010; Parsons, 1987).

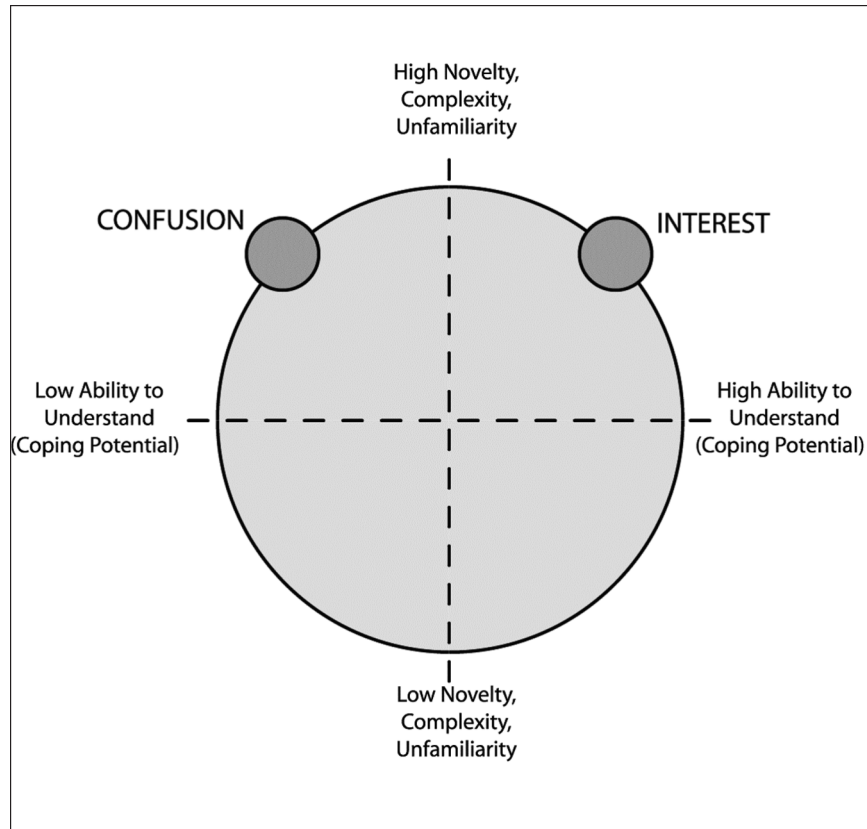


Figure 1. An appraisal space for confusion and interest.

Novices, in contrast, generally lack such knowledge and hence apply general knowledge and personal experiences when judging art. Stated simply, the judgments of experts are aesthetic, but the judgments of novices are personal. Hekkert and van Wieringen (1996) found support for this approach in a study of experts (curators and critics) and novices (experienced amateurs). When judging slides submitted by young artists, experts agreed more with each other regarding interest and originality than novices did, so novices appeared to be more idiosyncratic. Moreover, judgments of originality more strongly related to quality for experts than for novices, a finding that suggests that experts shared a basis for their judgment.

The present research considered two aspects of expertise and the knowledge emotions in the context of visual art. First, it sought to replicate past research on the appraisals that predict interest and confusion—novelty-complexity and

comprehensibility—and to see if experts and novices differed in how interesting and confusing they found visual art. Second, and more centrally, the present research examined whether experts and novices varied in the cognitive foundations of interest and confusion. One possibility is an “idiosyncratic expert” pattern. If experts’ experiences are less predictable (Leder et al., 2012), then appraisals will have weaker effects on interest and confusion as expertise increases. Another possibility, however, is an “expert consensus” pattern. Experts and novices might differ in how strongly a dimension predicts experience, and some factors will matter more for experts than for novices (e.g., Hekkert & van Wieringen, 1996). As a result, some appraisals should predict interest and confusion more strongly as expertise increases. These possibilities were tested by having a large sample that varied in expertise rate visual works for emotions (interest and confusion) and for the cognitive appraisals that predict them (novelty-complexity and comprehensibility). Multilevel models were then used to see if expertise moderated the within-person influences of appraisals on emotion.

## METHOD

### Participants

A total of 174 people—133 women, 41 men—enrolled in psychology courses at the University of North Carolina at Greensboro volunteered to participate as a part of a research option.

### Procedure

People participated in small groups of up to eight people. The experimenter explained that the study was about people’s impressions of different kinds of art. People viewed 11 black-and-white reproductions (approximately 5.5” by 8.5”) of visual images, taken from small-press books and literary journals of experimental language art, at their own pace. The images were printed in a packet in the same random order for each person. The artists were Reed Altemus, Marcia Arrieta, Christian Burgaud, David Chirot, Jim Leftwich, Gustave Morin, Spencer Selby, and Andrew Topel. The images were originally published in black-and-white and were generally abstract, although many images juxtaposed letters, words, and representational imagery.

For each image, people completed 7-point semantic-differential scales. These scales measured feelings of interest (*interesting-uninteresting, boring-exciting*) and confusion (*confusing-clear, perplexing-obvious*) and the appraisals of novelty-complexity (*simple-complex, common-unusual*) and comprehensibility (*comprehensible-incomprehensible, easy to understand-hard to understand, coherent-incoherent*).

Afterward, people completed demographic measures and the aesthetic fluency scale (Smith & Smith, 2006), which was used to measure variation in art expertise. Research has measured expertise many ways, such as by selecting groups with extreme differences in expertise (e.g., Hekkert & van Wieringen, 1996) or by measuring a combination of educational level and interest in the arts (e.g., Chatterjee, Widick, Sternschein, Smith, & Bromberger, 2010; Leder et al., 2012; Locher et al., 2001). The aesthetic fluency scale is based on the intuitive notion that experts in the arts know more than novices. The scale lists 10 people and concepts from art history (*Mary Cassatt, Isamu Noguchi, John Singer Sargent, Alessandro Boticelli, Gian Lorenzo Bernini, Fauvism, Egyptian Funerary Stelae, Impressionism, Chinese Scrolls, Abstract Expressionism*). People rate how familiar they are with each one, using a 0 (*I have never heard of this artist or term*) to 4 (*I can talk intelligently about this artist or idea in art*) scale. By averaging the items or pooling them with latent variable methods, researchers obtain a continuous measure of individual differences in expertise. The aesthetic fluency scale has been used in many studies and appears to work well (e.g., DeWall, Silvia, Schurtz, & McKenzie, 2011; Silvia, 2007b; Silvia & Barona, 2009; Silvia & Nusbaum, 2011).

## RESULTS

### Data Reduction and Model Specification

Instead of averaging across the 11 images and conducting conventional regression models, I estimated the within-person relationships between appraisals and emotions with multilevel models (Silvia, 2007a). Within-person relationships avoid confounding effects of between-person “third variables,” and they reflect how researchers think about aesthetic processes (i.e., as processes that unfold within a person rather than between people). The multilevel models were multivariate: confusion and interest were outcomes in each model. The Level 1 (within-person) predictors (appraisals of novelty-complexity and comprehensibility) were centered at each person’s own mean, and their effects were modeled as random. Figure 2 depicts the multivariate multilevel model. The models were estimated in Mplus 6.1 using maximum-likelihood with robust standard errors. All regression weights are unstandardized.

The intraclass correlations (ICC) were .207 for interest and .145 for confusion. An ICC indicates the percent of variance in an outcome that is at the between-person level, so these low ICCs mean that most of the variance in interest (around 80%) and confusion (around 85%) is at the picture level rather than the person level. The 10 items from the aesthetic fluency had good internal consistency (Cronbach’s alpha = .81), so a latent expertise variable was formed by using the 10 items as indicators and fixing the latent variable’s variance to 1.

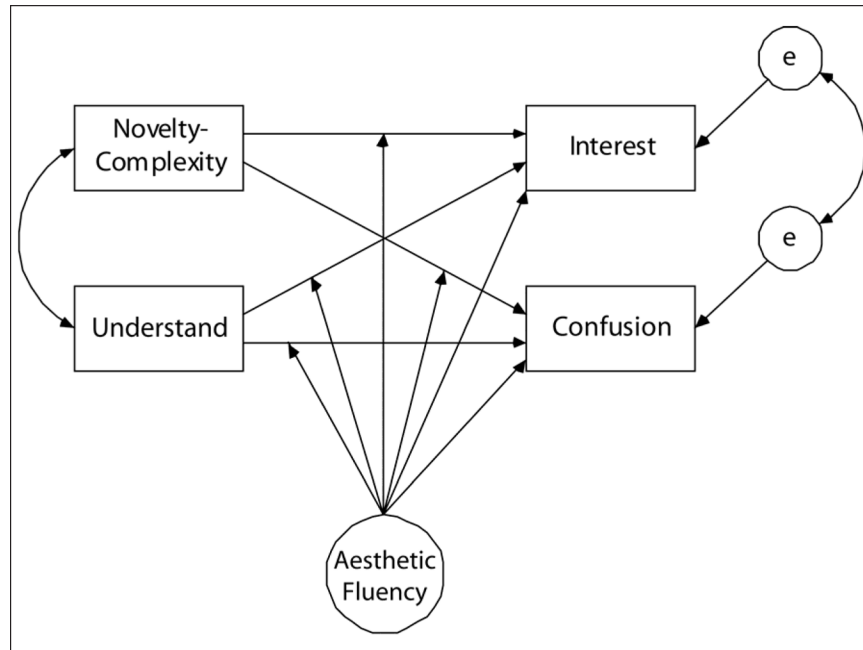


Figure 2. A depiction of the multivariate multilevel model.

### Interested Experts, Confused Novices?

How did experts and novices differ in their experience and appraisals of the images? As expected, aesthetic fluency significantly predicted both interest and confusion: people higher in expertise found the images more interesting ( $b = .148$ ,  $SE = .071$ ,  $p = .036$ ) and less confusing ( $b = -.132$ ,  $SE = .066$ ,  $p = .046$ ).

How did the two appraisals predict interest and confusion? The results replicated recent work (Silvia, 2010; Silvia & Berg, 2011) and supported the appraisal space in Figure 1. Interest was marked by appraisals of high novelty-complexity ( $b = .122$ ,  $SE = .036$ ,  $p = .001$ ) and high comprehensibility ( $b = .321$ ,  $SE = .049$ ,  $p < .001$ ). Confusion, in contrast, was marked by high novelty-complexity ( $b = .558$ ,  $SE = .022$ ,  $p < .001$ ) and low comprehensibility ( $b = -.359$ ,  $SE = .034$ ,  $p < .001$ ).

### Idiosyncratic Experts or Expert Consensus?

Thus far, the models have shown main effects of expertise and appraisals, thus replicating and extending past research. Our central question, however, concerns possible interactions, such as whether the effects of appraisals become weaker (reflecting idiosyncrasy) or stronger (reflecting consensus) for experts. Analyses of cross-level interactions—the interactive effects of aesthetic fluency

and appraisals, shown as arrows pointing at paths in Figure 2—found many significant effects. For interest, aesthetic fluency interacted with appraisals of novelty-complexity ( $b = .081$ ,  $SE = .040$ ,  $p = .041$ ) and comprehensibility ( $b = -.098$ ,  $SE = .048$ ,  $p = .041$ ). As expertise went up, the effect of novelty-complexity became bigger and the effect of comprehensibility became smaller. Stated differently, experts' experience of interest was relatively more affected by novelty and relatively less affected by comprehensibility.

Similar interactions appeared for the experience of confusion. Aesthetic fluency didn't interact with appraisals of novelty-complexity ( $b = -.011$ ,  $SE = .024$ ,  $p = .646$ ), but it did interact with comprehensibility ( $b = -.096$ ,  $SE = .038$ ,  $p = .011$ ). As expertise went up, comprehensibility's negative effect on confusion became more negative.

## GENERAL DISCUSSION

The present research expands evidence for confusion and interest as aesthetic states and illustrates several roles for expertise. First, the main effects of appraisals on interest and confusion replicated past work: the appraisal structure shown in Figure 1 was supported. Second, expertise in the arts had a main effect on both interest and confusion: people with higher aesthetic fluency scores found the images more interesting and less confusing.

Finally, expertise interacted with appraisals consistently, indicating that the cognitive bases of interest and confusion differ between experts and novices. A central goal was to explore the conflicting visions of how experts vary in the underlying roots of aesthetic experience. The findings for interest and confusion were more supportive of an "expert consensus" approach (Hekkert & van Wieringen, 1996) than an "idiosyncratic experts" approach (Leder et al., 2012). As expertise increased,

1. novelty more strongly predicted interest;
2. comprehensibility less strongly predicted interest; and
3. comprehensibility more strongly predicted confusion.

Because only one within-person relationship decayed as expertise increased, the findings offer less support for the view that experts' preferences are idiosyncratic. Instead, experts appeared to lean more on appraisals of novelty for interest and comprehensibility for confusion, so some dimensions were more important for experts than novices.

The present work can't settle the problem of how expertise influences the process of aesthetic experience. It differed from past work in many respects, and future work will need to unravel the factors that lead to idiosyncratic or shared bases for aesthetic experience. For example, Hekkert and van Wieringen (1996) recruited critics, curators, and gallery owners for their expert sample, whereas the present work and other research used samples of college students who varied

in their sophistication, knowledge, and interest in the arts (Leder et al., 2012). The aesthetic fluency scale has been used successfully in many recent studies and is one of the few standard measures for art knowledge, but a large-scale psychometric study of expertise would be needed to understand the strengths of different classification approaches. Another key difference is that the present research analyzed how within-person relationships vary across expertise, whereas past work has generally examined between-person differences. Within-person effects and between-person effects are different levels of analysis—neither is the “correct level,” but within-person relationships are more similar to how psychologists intuitively think about psychological processes (Silvia, 2007a). Finally, the present work used abstract, non-representational images. Expertise and comprehensibility appraisals might interact differently for representational works because the meaning of comprehension probably changes: novices might feel capable of understanding representational art if they can identify what it depicts (Parsons, 1987).

These differences aside, how expertise moderates aesthetic processes is an important “second generation” research question for psychological aesthetics. Understanding why experts and novices experience art differently promises to illuminate many related problems, such as the origins of aesthetic experience, the interaction of knowledge and perceptual experience in aesthetic judgment, and the nature of individual differences in emotional experience.

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