

First, the authors must more clearly distinguish among two relevantly different kinds of appreciation—understanding and evaluation—that may vary as a function of appreciators' sensitivity to art-historical contexts. In some places, B&R refer to understanding and appreciation as distinct, yet equally historically informed, kinds of responses. In other places, they identify understanding as one constituent of appreciation alongside another constituent that is, broadly speaking, evaluative: that which is indicated in, for example, emotional responses and expressions of preference and pleasure. However, understanding and evaluation need to be disentangled and their relations of dependence identified for it to be clear that different studies of artistic appreciation are addressing the same thing. *Prima facie*, artistic understanding is a *precondition* of artistic evaluation, even if the two approaches proceed simultaneously.

For the identifying operations constitutive of understanding a work (such as recognizing its functions and discerning its meaning and expression) are required for the evaluative appreciation of the work to be made in light of the properties it has *qua* art. Whether, for example, the cheap hardware-store paint used by the abstract expressionist Franz Kline is, as such, a thematic element in his compositions—expressing hostility to the refinement and preciousness of other traditions—or only the medium he happened to employ, is a determination necessarily prior to any evaluation based on that feature of his canvases. Of course, one's ordinary awareness of the genre or category to which a work belongs can often serve as a proxy for such identification. For placing a work within a given category—such as still life, pop art, royal portrait, detective story, and so on—reflects an implicit explanatory commitment to certain kind-specific conventions and regulative ideals having been recognized by the artist in creating the work.

Second, although they eschew the *normative* mode of appreciation that they identify with art criticism and the comparative assessment of art, B&R need some such characterization, as found in Budd (1995), of what kinds of responses, under what conditions, count as competent exercises of appreciation. Such a normative conception is required to distinguish the appreciation of art *qua* art from appreciation of it from artistically irrelevant points of view. According to a normative account of appreciation, an artistic evaluation can be distinguished from a mere liking or preferring by being answerable to reasons. We challenge, revise, and approve of artistic judgments on the basis of reasons that speak to facts about a work of art that ground those judgments, for example, facts about its appearance, effects on suitably qualified audiences, satisfied functions, and relations to other works. Of course, appreciators often cannot cite reasons in support of their responses, but those responses—for example, emotional expressions—may correctly pick up on artistically relevant features of a work that are, in principle, identifiable.

No doubt, different theories of artistic value propose competing accounts of what considerations are relevant in judging art *qua* art. However, not just anything goes. That a work has great monetary value or is preferred by others in one's social milieu are not, in themselves, appropriate reasons supporting an artistic evaluation. Without a normative account specifying the proper conditions under which artistic appreciation is exemplified, the psycho-historical framework may count spurious forms of appreciation as genuine. Such spurious appreciation is made especially vivid in the demonstration that subjects tend to attribute a higher valuation to works that they are more familiar with (Cutting 2006) but the appreciation of art in light of features irrelevant to artistic value is widely exhibited. Kruger et al. (2004) provide evidence that appreciators use an effort heuristic to rate the quality of artworks. This, as B&R note, reflects the design stance that is requisite for artistic appreciation. However, that sensitivity to effort is mistaken or distorting in response to many works, such as the appropriation art of Sherrie Levine or Richard Prince, for which effort in the physical

or creative sense is neither evident nor intended to be. Likewise, pleasure felt before a work is often a good guide to its artistic or aesthetic value (hence its use as a measure of appreciation); however, it can often instantiate a failure of proper response. For some works of art (such as the disgusting and rebarbative performances of the Vienna Actionists) may be designed to cause one a feeling of distress, without any compensatory pleasure. Moreover, in the case of many works, such as conceptual art and art that aims for cognitive or moral enlightenment, it may be a mistake to assume that their artistic value is always or only a hedonic dimension intrinsic to our experience of them. The merits of such works may not be appropriately characterized in an experiential sense (Gilmore 2011).

B&R may propose that a robust adoption of the design stance in the above cases would guide appreciators toward discerning the appropriate bases for their evaluations. However, just because that stance might show that a work of art realizes some sought-after value or satisfies some intended function does not entail that it should be evaluated for that value or function. No scientific account of artistic appreciation can do without a normative conception of when a response to a work of art is properly grounded in features of the work that merit that response.

Integrating holism and reductionism in the science of art perception

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Abstract: The contextualist claim that universalism is irrelevant to the proper study of art can be evaluated by examining an analogous question in neuroscience. Taking the reductionist-holist debate in visual neuroscience as a model, we see that the analog of orthodox contextualism is untenable, whereas integrated approaches have proven highly effective. Given the connection between art and vision, unified approaches are likewise more germane to the scientific study of art.

Vision science—a field with obvious importance for the study of art—has engaged in debate between reductionists and holists over recent decades, wherein the former camp advocates the study of reduced and isolated visual stimuli such as bars and gratings, while the latter group advocates the study of naturalistic stimuli, such as natural scenes, that encompass many stimulus dimensions and replicate characteristic aspects of the natural world (Felsen & Dan 2005; Pinto et al. 2008; Simoncelli & Olshausen 2001). This debate parallels the universalist-contextualist debate that animates Bullot and Reber's (B&R's) article, for indeed their contextualism is a variant of holism, albeit an especially radical one.

A number of features of the debate in vision science are illustrative. First, few if any scientists dismiss the viewpoint of the opposing side, as B&R do in relation to universalism. Reductionists have shown limitations in some holistic thinking, but have generally done so without rejecting it outright. Reductionists' chief complaint is that in using fully natural stimuli, we lose the ability to parametrically manipulate them—which is a problem also faced by the zealous contextualism of B&R. However, even ardent reductionists accept that the ultimate test of their theories is to see how they fare in natural settings (Rust & Movshon 2005).

But although holists have proven that reduced stimuli can lead to incomplete models of the visual system (Olshausen & Field

2004; 2005), they nevertheless accept fundamental reductionist claims. Holists would agree that to suggest that no “correct” knowledge can be gleaned without perfectly elaborated context is to deny that we can, in the vision science analogy, understand or predict *any* dimension of response to natural scenes using reductionist models. This is demonstrably not the case (David & Gallant 2005; David et al. 2004).

Moreover, vision science has managed to synthesize reductionism and holism. This trend and parallel ones in other relevant areas of neuroscience (e.g., Lewicki 2002) should serve as models for the psychological study of art. Rather than divide the field into “ahistorical psychologism” and its converse, historical philosophism, we should seek integrated approaches.

For example, measurement of reduced properties of naturalistic stimuli can grant novel and unexpected insights—with respect to vision and to art. The basic statistical properties of natural scenes such as spatial frequency spectrum characteristics have been shown to be regular, and this regularity influences mammalian vision via evolutionary demands for efficient neural coding (Field 1987; 1994). Regularity exists despite the common impression that natural scenes are limitlessly diverse—indeed, this naïve view went mostly unchallenged until the 1980s. However, we now know that natural scene regularities shape systems including retinal and cortical coding, object segmentation, attention, and so forth (see Geisler 2008).

Examining reduced aspects of art while retaining a degree of naturalism is likewise essential to scientific understanding of this unique and defining human trait. By measuring low-level statistical properties in samples of world artwork from many cultures and time periods, we find that art also has regularities. In particular, nearly all paintings, like natural scenes, show scale invariant (1/f) spatial statistics (Graham & Field 2007; 2008; Redies et al. 2007)—again, despite apparent heterogeneity. This means artist output is constrained by evolved aspects of the visual system: images lacking such regularities (e.g., very blurry images, or random, white noise images) are difficult for the system to process, because of its evolved coding strategies. Such images are in a way imperceptible. No artist or movement would last long making only, for example, white noise images, because they would be indistinguishable—even though there are far more possible white noise images than there are particles in the universe (Graham & Field 2009). Thus, certain types of art are a priori unlikely to be made or appreciated. Such fundamental knowledge is revealed without reference to historical context, but does derive from the study of basic, shared properties in natural exemplars and—crucially—from consideration of their relation to the brain.

Moreover, if we defer to historical context—to the exclusion of reductionist empiricism—we can come to mistaken conclusions. Consider Jackson Pollock: we know from historical documentation that Pollock’s paintings were created using drip techniques that employed significant randomness. Indeed, what made his art so avant-garde—even compared to earlier automatist art—was precisely this randomness (Chave 1999). Though Pollock retained a degree of deliberate design, the randomness of his art is today seen as essential to the appreciation of his work, as B&R note. Thus, taking the stance of historical philosophism, we might conclude that such paintings prove our visual system can appreciate random patterns so long as we comprehend the appropriate context.

However, when we examine Pollock independently of “causal data” and historical context, and instead test his work with respect to basic properties relevant to human vision, we see that in fact Pollock’s paintings are not truly—or even approximately—random. They show robust scale invariant spatial statistics, which are mostly indistinguishable from those of natural scenes, representational art, and nonrepresentational art (Graham & Field 2008). Pollock thus shares fundamental properties with other art styles, which are in turn shaped by visual coding. We can even suppose that if they were truly random, his paintings would not have been appreciated—neither in his time nor ours. This gives us a rather different perspective on the appreciation of Pollock’s work.

B&R’s arguments can be challenged on their own philosophical terms as well: for example, which experts are we to trust with regard to “correct” context, and when do we declare such stories unassailable? Rigid contextualism invariably leads to revisionism: because the “relevant facts” change with greater perspective—consider that Pollock was dismissed as an unserious showboat in his time by serious critics and artists—we often cannot appreciate context until we have created mythology, which is surely anathema to B&R’s demand for historical accuracy.

B&R’s strain of utopian philosophy is of little relevance in the empirical sciences. Yet accounting for naturalism is surely warranted—in the scientific study of art, as in vision science. The solution in both fields is to integrate holistic and reductionist approaches.

Memories of Art

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Abstract: Although the art-historical context of a work of art is important to our appreciation of it, it is our knowledge of that history that plays causal roles in producing the experience itself. This knowledge is in the form of memories, both semantic memories about the historical circumstances, but also episodic memories concerning our personal connections with an artwork. We also create representations of minds in order to understand the emotions that artworks express.

Bullot & Reber (B&R) have brought several important features of art under the umbrella of their approach, most notably the history of art itself. Their framework has several resources for capturing the appreciation of art and is expandable to take in further aspects as they are understood. In this response, I will make several suggestions toward the improvement and expansion of the theory.

It is odd to think of the viewer as somehow recovering the history of an object from the object itself, as the authors do, except in certain specialized senses. We frequently have knowledge about the art-historical context of a work prior to exposure to it. It is this knowledge that plays important roles in our appreciation of art, rather than the historical events themselves. The history taught to students of art, for example, plays vital causal roles in how they go on to create and perceive artworks. Certain aspects of art’s history are exaggerated to make them entertaining and memorable. Many of the most famous stories of artistic creation are at the very least embellished, or even spun from whole cloth, but their purpose is motivational, not merely instructional.

Theory requires both the actual historical context and the remembered historical context. We need to know what the artists of a certain movement thought the history of art was, in order to understand their work. We also need to understand how this knowledge comes into play in creating and understanding art. How exactly is the history of art encoded in the memories of those who know it? How are the right portions of that memory brought up in a given context? How do these memories participate in the creation, augmentation, and continuation of aesthetic experience? We also need to speak of the history of art itself. When mistakes are made about the history of art, we need to have a concept of the actual history in order to make sense of that. We also need it in order to make sense of one account being more correct than another.

Not all of our memories of the history of art are neutrally stored as impersonal semantic memories. Some of them are memories of personal experiences involving the artwork and are stored among our episodic memories. There is need for caution here; several fallacies lurk. In the right context, a blurry memory from having heard a piece of music long ago can be mistaken for an aesthetic