

## Art History, Natural History, and the Aesthetic Interpretation of Nature

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### Abstract

One of the most engaging questions within contemporary aesthetics of nature is the extent to which natural science informs, or ought to inform, aesthetic judgments of nature. The most influential position in this debate has been Allen Carlson's cognitive, natural-science model of aesthetic appreciation. Drawing analogy to Kendall Walton's claims about the role of art history, Carlson argues that knowledge from the natural sciences can play a role analogous to the role of art historical knowledge in our experience of art -- supplying categories for properly 'calibrating' one's sensory experience. Yet while art history indeed functions in this way, this formulation leaves out a second (and often more important) role played by art history over the last century, which is providing the context needed for interpretations of meaning. This paper explores whether natural science can also inform our aesthetic experience of nature in this second sense. I argue that a robust sense of meaning from our aesthetic experience of nature is indeed possible by coupling our aesthetic experience of animals with knowledge from the natural science of animal ethology. If successful, the argument extends the scope of Carlson's analogy and thereby bolsters the case for his cognitive, natural science model.

### Keywords

aesthetic experience of nature; Allen Carlson; animal ethology; Arthur Danto; hermeneutical interpretation; meaning in nature; Patricia Matthews; Kendall Walton

One of the most engaging questions within contemporary aesthetics of nature is the extent to which natural science informs, or ought to inform, aesthetic judgments of nature. The most influential position in this debate has been Allen Carlson's cognitive, natural-science model of aesthetic appreciation. Drawing analogy to Kendall Walton's claims about the role of art history, Carlson argues that aesthetic appreciation grounded in knowledge from natural science offers the best (and perhaps only) framework for aesthetically appreciating nature for what it is in itself. As developed by Carlson, Parsons, and Matthews, knowledge from the natural sciences plays a role analogous to the role of art historical knowledge in our experience of art -- supplying categories for properly 'calibrating' one's sensory experience. Yet while art history indeed functions in this way, such a formulation leaves out a second (and often more important) role played by art history over the last century, which is providing the context needed for interpretations of meaning. This paper explores whether natural science can also inform our aesthetic experience of nature in this second sense. Can natural science facilitate interpretations of meaning from our aesthetic experience of nature? In this paper I argue that it can. I begin by describing Carlson's cognitive model and then explaining that while its proponents have at times touched upon the topic of meaning, they have not recognized its full potential and significance for their project. I argue that a robust sense of meaning from our aesthetic experience of nature is possible by coupling our aesthetic experience of animals with knowledge from the natural science of animal ethology. The paper concludes by considering objections to the argument that clarify its scope and limitations. If successful, the argument extends the scope of Carlson's analogy and thereby bolsters the case for his cognitive-scientific model.

## I.

Carlson's cognitive, natural science model draws explicitly from Kendall Walton's influential essay "Categories of Art," which argues that knowledge of art historical categories allows for more robust and appropriate aesthetic appreciation of artworks (Walton 1970). For example, knowledge of the art historical category 'Cubism' is essential for fully appreciating a work such as Picasso's *Man with Guitar*. Aesthetically appreciating this work requires knowing that it is not a failed attempt at traditional representation but an entirely different approach to representation. For Walton, art historical categories guide the viewer towards a more robust aesthetic appreciation by delineating those characteristics that are 'standard' for a given category, 'contra-standard' for that category, and 'variable' within that category.

Aesthetically appreciating Picasso's painting thus involves seeing it *as* a Cubist painting and thereby appreciating the ways in which it conforms to the standards of Cubism, the ways in which it is contra-standard, and, perhaps more importantly, whether any contra-standard aspects are novel and interesting variations of that category or merely instances of clumsy execution.

In arguing for the natural science model, Carlson extends Walton's analysis by drawing analogy between the role artistic categories play in aesthetically appreciating artworks and the role scientific categories play in aesthetically appreciating nature. For example, while one may naively appreciate the graceful movements of a whale, one's aesthetic appreciation of those movements is 'thickened' by knowledge that a whale is in fact a mammal rather than a fish. Or, knowing the norms of size associated with the concept 'elephant' can guide one's aesthetic experience of a particular elephant, with contra-standard size leading one to assess it as perhaps 'majestic' or 'puny'. In this oft-cited example of aesthetic thickening, Ronald Hepburn writes

Suppos[e] I am walking over a wide expanse of sand and mud. The quality of the scene is perhaps that of wild, glad emptiness. But suppose that I bring to bear upon the scene my knowledge that this is a tidal basin, the tide being out. I see myself now

as virtually walking on what is for half the day sea-bed. The wild, glad emptiness may be tempered by a disturbing weirdness. (Hepburn 1968: 55)

In this way, cognitive awareness of a classificatory difference can make an aesthetic difference in one's experience. Walking over the expanse of sand and mud while believing that the expanse is a beach results in a different aesthetic experience than if one believes the area is a tidal basin. Then one is standing within a dynamic nexus of land and sea, part of a curious cyclical phenomenon of rare and uncanny quality. The visual sensation is unchanged, but the change in conceptual categories under which one sees these perceptions changes one's aesthetic experience. As Carlson describes it, the "[a]esthetic appreciation of perceptual properties under such descriptions is an important part of the aesthetic appreciation of nature," and one that essentially involves "the contemplation of aesthetic properties in light of such descriptions..." (Carlson 2000: 65). Or to cite my own experience of the Appalachian Mountains in Virginia, gaining geological knowledge of their extreme age led to a richer aesthetic experience of what were initially for me "some nice foothills" in comparison to my reference point of the Rocky Mountains. Such knowledge of deep, or geological, time supplements my experience by adding additional temporal perspectives as well as a respect lacking in my initial experience of the mountains.<sup>1</sup>

As Patricia Matthews point out, it is important to note that the aim of engaging science in our aesthetic experience of nature is to make it possible for us "to perceive objects under categories, not simply to have information about objects" (Matthews 2002: 40). Scientific knowledge is thus aesthetically relevant because it affects and shapes aesthetic perception itself. Such shaping of one's aesthetic experience is often subtle and nuanced, as in the tidal basin example, but Carlson also claims that it can sometimes lead to dramatic shifts,

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<sup>1</sup> For more on the aesthetic implications of geological time, see Rolston 1995.

including the more controversial claim that everything in nature – when seen under the proper categories -- has positive aesthetic value.<sup>2</sup>

In assessing Carlson's analogy between art history and natural history, it is no doubt true that aesthetically appreciating an artwork often involves 'seeing' it under its appropriate art historical category, such as Cubism or Abstract Expressionism. Also, as Yuriko Saito notes, this idea echoes Leopold's claim that scientific knowledge can "promote perception" of nature, allowing us to look for, see, and appreciate what to the untrained eye is "invisible and incomprehensible" (Saito 1998(b): 145). Both of these claims are uncontroversial in the realm of art and both resonate with Enlightenment notions of taste -- training/calibrating one's aesthetic faculties so become a better judge.<sup>3</sup> Yet while correct as far as it goes, Carlson's description is incomplete as an account of the role now played by art history. Since the rise of theory-laden, self-referential artworks in the 20<sup>th</sup> century, a more common and significant role for art historical knowledge is to provide the context needed for interpreting the *meaning* of an artwork rather than assessing a work's conformance to stylistic norms. As Arthur Danto argues in *The Transfiguration of the Commonplace*, interpreting meaning may now be the fundamental mode of engaging art objects.<sup>4</sup> This interpretation involves engaging the art object's sensuous, 'exhibited' properties in tandem with a host of 'non-exhibited' properties, awareness of which comes mostly from art historical knowledge. These non-exhibited properties include the stylistic categories Carlson and Walton cite, but those are often much less significant than other non-exhibited properties, such as the artist's intentions and the work's place within art history.

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<sup>2</sup> The latter is known as 'positive aesthetics,' but it is not a view I endorse in this paper.

<sup>3</sup> More specifically, the latter corresponds to Hume's 'delicacy of the imagination' whereby no detail of an artwork goes unnoticed, while the former corresponds to his claim that persons of taste possess awareness of the aims/standards (i.e., categories) of the type of art under consideration.

<sup>4</sup> See (Danto 1983: 125) for his definition of an artwork as a functional relationship of an object under interpretation, which he symbolizes  $W=I(o)$ .

Given this shift in art toward cognitive claims of meaning, any analogy to the role of art history in our experience of art seems obliged to show that it can at least sometimes accommodate this more cognitive element in thickening our aesthetic experience of nature. This is especially true given that Carlson himself makes the strong claim that “our appreciation of nature is aesthetic and is analogous to that of art in both its nature and structure” (Carlson 200: 66) Taking Carlson’s analogy seriously thus requires examining whether aesthetic engagement of the sort Danto attributes to art is possible in our aesthetic experience of nature. Can nature ‘carry’ meaning in the way art carries meaning? And more to the point, can natural science provide the categories and context needed for interpreting such meaning?

## II.

So far I have presented Carlson’s original and most common formulation of his analogical argument – that the natural sciences provide categories for calibrating our sensory experience of nature. This is not to say Carlson has been silent on the issue of meaning, and clearly he is aware that the schema of using scientific categories to calibrate sensory experience is not the whole story when appreciating nature (or art) aesthetically. For example, consider his subsequent distinction between ‘design appreciation’ and ‘order appreciation,’ a distinction Carlson draws in the course of defending the view that aesthetic appreciation of art and of nature are fundamentally a single type of activity. Design appreciation is the paradigmatic mode of art appreciation, and it involves the

...appreciation of a thing as something designed and therefore as something that is the creation of a designer. To put it another way, appreciation of art *qua* art must be appreciation *qua* creation of an artist. (Carlson 2000: 120)

But while design appreciation is the paradigm of art appreciation, Carlson argues that it is not appropriate or even possible when engaging nature because nature possesses neither design

nor designer. But while design is out, Carlson argues that our aesthetic appreciation of nature does involve an appreciation of inherent order, making it – ironically -- similar in structure to our appreciation of certain *avant garde* artworks. For example, consider Abstract Expressionist action paintings, where the artist puts into play certain causal forces yet relinquishes direct control over the look of the final product. Essential to appreciating such works is a knowledge and understanding of the causal forces that led to its creation (e.g., Pollock’s embrace of the randomness and physicality of ‘dripping’ paint). Carlson argues that appreciating nature aesthetically often involves exactly this sort of order appreciation, order instantiated by ecological systems, biological organisms, and geological features. Just as fully appreciating Pollock’s painting requires knowing about the processes he used to create the work, aesthetically appreciating nature requires knowing the story of how it came to be. These are the stories provided by science, which “illuminate [nature] as ordered and in doing so give it meaning, significance, and beauty” (Carlson 2000: 120).

With his idea of order appreciation, Carlson clearly wants to leave room for claims of meaning from our aesthetic experience of nature. Yet while Carlson recognizes this possibility, writers such as Patricia Matthews have gone further in developing it. In presenting her own version of the natural science account, Matthews distinguishes between two models for using science to enhance our aesthetic appreciation of nature, which she calls the ‘perceptual’ model and the ‘linguistic’ model. The perceptual model roughly corresponds to Carlson’s original formulation (e.g., the ‘calibration model’) in which “our knowledge of the object functions as a category under which we perceive the object... and can change the aesthetic properties perceived” (Matthews 2002: 39). In contrast, the linguistic model is one whereby we strive to ‘read’ nature. Discussing a biologist’s aesthetic experience of a clutch of bird eggs, Matthews’ writes

The color of an egg tells a story about the evolution of birds and their nesting patterns. Although the biologist does not perceive the egg's color or associated aesthetic properties any differently than the average person, she connects the color with a range of knowledge. The biologist knows or suspects that the golden plover's eggs are colored for camouflage, and that most ducks have uncamouflaged eggs because the nests are hidden in dense vegetation and the females who lay them are already camouflaged. On this model, what counts is not the look of the eggs but the evolutionary story they tell, just as in a novel, what counts is not the shape of the letters, but the story they tell. (Matthews 2002: 39)

Another writer making claims of this sort is Holmes Rolston, III, who argues that something as initially repugnant to our senses as a rotting elk carcass filled with maggots can actually lead to an aesthetically positive experience when it is viewed as one element with the larger eco-systemic cycle of life, predation, decay, and rebirth. While the rotting elk may initially offend one's visual and olfactory senses, it can be aesthetically appreciable when viewed as one element within a larger 'dramatic play' of primordial forces that makes life possible.<sup>5</sup>

Rolston writes

If we enlarge our scope in retrospect and prospect (as ecology greatly helps us to), we get further categories for interpretation. The rotting elk returns to the humus, its nutrients recycled; the maggots become flies, which become food for the birds: natural selection results in better-adapted elk for the next generation. Every item must be seen not in framed isolation but framed by its environment, and this frame in turn becomes part of the bigger pictures we have to appreciate – not a 'frame' but a dramatic play. The momentary ugliness is only a still shot in an ongoing motion picture. (Rolston 1988: 239)

Between Matthews' focus on the 'evolutionary story' told by the egg clutch and Rolston's focus on the 'dramatic play' that frames our experience of the elk carcass, we have clearly moved closer to the kind of meaning found in artworks, especially literary works.

Determining exactly how close we have come to artistic meaning requires further inquiry, which I will pursue in the next section. But before taking up that task, we must first consider

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<sup>5</sup> Just as a particular scene in a play or movie may be gruesome yet contribute to the overall positive aesthetic value of the play or movie, so can particular unpleasant sensory experiences in nature sometimes be aesthetically appreciated when viewed from an eco-systemic perspective.

a challenge to Carlson's model that must be successfully addressed if it is to be extended into the realm of meaning.

Drawing the term from Ronald Hepburn, Glenn Parsons has dubbed this difficulty the 'fusion problem' (Parsons 2006). The fusion problem stems from a conceptual and phenomenological tension that exists between the sensory nature of aesthetic experience and the cognitive, theoretical nature of scientific knowledge. How can highly theoretical concepts from scientific fields such as ecology, biology, and geology inform (i.e., fuse with) our aesthetic experience of nature without fatally distracting from the fundamentally sensory nature of all aesthetic experience? Matthews implicitly points to this tension in her discussion of the egg clutch when she writes that "On this model, what counts is not the look of the eggs but the evolutionary story they tell" (Matthews 2002: 39). But if the look of the eggs is not what counts, then we must ask whether we are still engaging in the same aesthetic experience – or any aesthetic experience at all. It seems that the more one emphasizes the evolutionary/causal narrative, the further one moves from the very experience about which one seeks to attribute meaning.

Yuriko Saito also points to this difficulty in her critique of Holmes Rolston's argument about appreciating a rotting elk carcass. According to Saito

[E]ven if we agree that there is beauty in an ecosystem (due to its harmony, unity, and interdependence of parts), it is a highly conceptual one, experienced by most of us through verbal descriptions or a diagram... By stressing the aesthetic value of the whole ecosystem, the actual perceptual experience of the individual object seems to become unimportant. (Saito 1998(a): 104)

While not invoking the vocabulary of 'fusion,' Saito's critique echoes Hepburn's own thoughts about the role of metaphysical frameworks (scientific or otherwise) in our experience of nature. Hepburn argues that metaphysical frameworks serve as "an element of interpretation that helps to determine the overall experience of a scene in nature" (Hepburn

1996: 197). In this way, such frameworks situate our sensory experience within a larger context and thereby enhance aesthetic experience. However, invoking such frameworks also risks distracting us from the actual object of sensory experience. That is, it risks shifting our focus from the immediate sensory experience to the metaphysical framework itself – however fascinating or aesthetically elegant that may be. If the framework is not “fused with the sensory components” of the experience, then we risk the experience becoming an intellectualized set of “meditations aroused by” the sensory components rather than an integrated aesthetic experience (Hepburn 1996: 197). Said another way, we risk veering from aesthetic appreciation of the nature in front of us and into ‘meditations’ about our scientific knowledge.

For proponents of Carlson’s model, Glenn Parsons has offered the most promising route for navigating the fusion problem. His strategy involves accounting for how fusion occurs in our experience of art and then arguing that this account also applies to our experience of nature. Fundamental to Parsons’ analysis is an epistemological distinction between observational beliefs and theoretical beliefs. While not purely reports of sensory experience, observational beliefs “are about, and are justified on the basis of, sensory experience.” In our experience of art, observational beliefs include beliefs such as ‘this object is a painting,’ or ‘that painting depicts a bowl of fruit.’ In our experience of nature, examples include ‘that animal is brown’ or ‘that tree is dead.’ As such, observational beliefs are generally compatible with our aesthetic experience of both art and nature because they do not distract from immediate sensation and can actually help to focus our attention in ways supportive of aesthetic experience. In contrast to observational beliefs are theoretical beliefs, which are “not justified on the basis of sensations alone, but via (often complex) inferences from sensations and some body of theory” (Parsons 2006: 166). Fortunately, most theoretical beliefs involved with works of art “are compatible with, and perhaps essential to, their appropriate

aesthetic appreciation.” They include “beliefs pertaining to a work’s representational content” as well as “beliefs regarding its genre and style, its history of production, and the conventions that govern its appreciation” (Parsons 2006: 166). While not directly based upon sensory observation, such theoretical beliefs are not problematic because they exhibit two characteristics: (1) they are *about* the object of aesthetic experience (e.g., the belief that a particular painting is by Rembrandt); and, (2) they depend upon “only a small and uncomplicated body of theory” (e.g., knowledge of the defining characteristics of Cubism) (Parsons 2006: 167).

But the situation is much more problematic when the theoretical beliefs involved come from the natural sciences, because scientific beliefs are often anything but uncomplicated. In fact, Parsons admits that sometimes the relevant scientific knowledge is so complex and theoretical that fusion simply cannot occur. For example,

[A]nyone who claimed that his belief that diamonds have the molecular structure of a three-dimensional carbon lattice contributes to the aesthetic appeal of a particular diamond would stand accused of failing to appreciate the diamond itself. ... He may be deriving pleasure from contemplating this fact, or its inference from chemical theory, or from imagining what such an atomic structure might look like... but this pleasure would not be aesthetic pleasure because it is not pleasure taken in sensation. (Parsons 2006: 167)

Yet while not always possible, Parsons does think that fusion can indeed occur if two conditions are met. First, the theoretical beliefs involved must meet the two criteria described above (i.e., they must be *about* the object of aesthetic experience, and they must depend upon ‘only a small and uncomplicated body of theory’). Second, fusion requires -- like Hume’s person of taste -- habits of mind that are only developed through practice. That is, one must not only possess the relevant scientific knowledge but also possess sufficient experience and habituation in applying this knowledge such that “spontaneously upon undergoing sensory stimulation by the object” this belief is brought to bear on the experience (Parsons 2006: 168).

With these conditions in mind, we can see why Matthews' example of the egg clutch fares better than the diamond example cited by Parsons. Not only does the diamond example involve exceedingly complex and abstract theoretical knowledge, but it is also unclear the extent to which this knowledge can actually be connected with (is actually about) the object of aesthetic experience – e.g., a glistening diamond. Rather, it seems more likely that invoking this knowledge leads only to 'meditations aroused by' the sensory experience of the diamond. In contrast, the biologist is better able to immediately situate (i.e., fuse) the sensory experience of the eggs' coloration within the evolutionary narrative. The aesthetic experience of these colors now carries a meaning that it did not have absent the evolutionary theory. Unlike crystalline and atomic theory, the theoretical component from evolutionary biology is less abstract, more intuitively understandable, and more plausibly connected to the object of sensory experience. This is not to say that achieving such fusion does not require study, experience, and practice on the part of the biologist. Rather, it is to say that evolutionary theory, unlike crystalline/atomic theory, provides a graspable narrative structure that makes fusion possible and plausible.<sup>6</sup>

### III.

The foregoing analysis suggests that the fusion problem is not insurmountable and that attributions of meaning from our aesthetic experience of nature are possible (even if some types of scientific knowledge fare better than others in this regard). We can now return to the

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<sup>6</sup> In sorting out which sciences can and cannot succeed in in this regard, Saito (1998(b): 145) offers a persuasive analysis that draws on Eugene Hargrove's distinction between rationalistic sciences and natural history sciences. Rationalistic sciences are those associated with the early modern era, such as physics and chemistry, which seek to "reduce [nature] into quantifiable, simple parts." In contrast are the "the natural history sciences (such as geology and biology), which are based upon observations... and which are deal with objects and phenomena in their spatial and temporal context."

central question: to what extent are claims of meaning from nature really analogous to the sorts of meaning we attribute to works of art? In the examples offered by Matthews and Rolston, it certainly seems plausible to say that the coloration of the eggs carries additional meaning when viewed through the lens of evolutionary biology, and the rotting elk carcass takes on added meaning when viewed within the larger ecological context of life and decay. Yet these claims of meaning also feel somewhat distant, abstract, and theoretical when compared to the sorts of meaning we typically attribute to artworks. Part of this difference may stem from my own shortcomings in the requisite habits of mind needed to achieve fusion. For instance, while perhaps more accessible than atomic theory, evolutionary theory is itself complex and theoretical, and I may simply lack sufficient practice in the habits of mind needed to fuse it fully with my sensory experience. Yet I think the more fundamental cause is a basic difference between these examples and our experience of art, which is that when interpreting an artwork we typically place great emphasis on the intentions of the artist who created it. While a work's meaning may not be limited only to what the artist intended when making it, we certainly give the existence of such intentions special weight. And this is true even if we do not know the content of these intentions in a particular case. Simply knowing that intentional activity went into making an art object affects our engagement with it, and the examples cited by Matthews and Rolston contain nothing analogous to artistic intention. Similar to Carlson's notion of design appreciation, the assumption of intentional creation may well be a necessary condition of engaging an artwork *qua* artwork. If so, then aspirations for such meaning claims from our aesthetic experience of nature may be seriously challenged, especially if one follows Carlson (and I suspect most other proponents of the cognitive-scientific model) in assuming that nature has no designer (Carlson 2000: 120).

Fortunately, I think there is a plausible strategy for meeting this challenge and defending the stronger claim of meaning. The first step is to follow Nick Zangwill's suggestion that there

are distinct domains within nature that call for distinct modes of aesthetic appreciation.

Rather than theorizing about our aesthetic experience of ‘nature’-- a relatively amorphous abstraction -- he argues we should distinguish distinct aspects of nature and identify distinct modes of engaging each (Zangwill 2013). While Zangwill applies this strategy to focus on our aesthetic experience of inorganic nature (and emphasizing the formal aesthetic qualities of objects such as rocks and clouds), I propose focusing on what is for many persons an especially significant and moving aspect of engaging nature – the aesthetic experience of non-human animals. I agree with Stephen Davies when he calls it “quite astonishing” that the aesthetic experience of animals has received so little attention by philosophers, particularly

...given what a significant part of the environment animals, birds, and insects are, the power animals had over our cave-painting ancestors, their ongoing charm and fascination for contemporary humans, and the history of our dependence on them for food, tools, clothing, fuel, labor, sport and companionship. (Davies 2012: 65)

While Carlson and others have referenced animals in their work, these references have been mostly limited to the value of knowing a species’ formal characteristics (e.g., taxonomic category and standard morphological qualities such as shape, color, and size). But this emphasis leaves out much of what is aesthetically interesting about animals. Certainly for me, the aesthetic experience of a walk in nature is modulated often and very engagingly by encounters with animals, typically mammals and birds. In making the case for attributions of meaning from our aesthetic experience of nature, I propose narrowing the focus from nature as a whole to the aesthetic experience of animal behavior and movement. This narrowing of focus also requires a corresponding shift away from more inferential sciences such as chemistry and geology (and perhaps even evolution) and toward the narrower science of ethology, or animal behavior (sometimes called cognitive ethology). Ethology is especially suited for informing interpretations of meaning because it supplies knowledge of animals’

aims and motivations. Or, said another way, ethology supplies evidence of animal intentionality. This claim is not as controversial as it may initially sound, for as Derr and Thompson have pointed out, ethology and ethological terms are replete with claims regarding the intentionality behind higher order animal behavior patterns (Derr and Thompson 1993). Ethological knowledge about the intentions and motivations of particular animal behaviors are a big part of what makes it possible for us, as Davies puts it, to find “the social displays and interactions of animals intrinsically enthralling and beguiling,” and for such experiences to “arouse strong aesthetic feelings of wonder and delight, terror and awe” (Davies 2012: 75).

With these shifts in mind, consider the following example from my own experience hiking in the Appalachian Mountains. I first engaged with the majestic, soaring flight of a large raptor. Soon I identified the flat wing glide and white underbelly as indicative of a bald eagle rather than the more common turkey vulture. I admired its graceful flight tracking above the flow of the James River. Then, unexpectedly, the eagle assumed a steep dive toward the river, as if to catch prey; but as it descended I then became aware of a second eagle that had been flying below and parallel to the first, and that was the real target of this dive. As the first eagle approached the second, anticipation rose about what was about to happen – a territorial attack, perhaps? The pair continued this airborne maneuver from my left to right, and I watched as the downward flight path of the upper eagle angled to intercept the flight path of the lower eagle. As luck would have it, just before the moment of intercept the flight paths of both birds took them behind a crop of trees and out of my view. Yet I was amazed at what I had just witnessed! First one eagle, then two, then the drama of a mid-air nose-dive, followed by the anticipation of contact between the two. But the wow of my sensory experience quickly gave way to wonder -- what was that all about? What did it mean? As both eagles were white headed, I assumed both were male. And as it was spring -- mating season for eagles -- I assumed this was an act of male-on-male territorial aggression. Yet a

bit of reading later that night revealed that male and female eagles look virtually identical, and copulation often occurs while in flight. I thus revised my original reading of the scene, with it now likely I had witnessed a sexual overture. If I ever witness such a scene again, my initial read will be better informed, its interpretation of meaning more accurate.

Ethological knowledge has wide application in our aesthetic experience of nature, whether it be the melodious sound of bird song or the jarring crack of head-butting rams. It makes possible the wide range of aesthetic predicates applicable to our experience of animals, predicates that are strikingly similar to those used when discussing artworks, including fear, awe, loyalty, deception, sneakiness, empathy, and curiosity. Also, ethological knowledge is essential for the full aesthetic experience of various animal artifacts, such as bird nests and the remarkable constructions of bower birds. As with artworks, knowledge about the creation and function of these structures is essential to their full aesthetic appreciation, as this knowledge provides the rudimentary intentions behind their creation. For example, for many years early ethnologists believed that the bowers observed in New Guinea were constructed by indigenous humans. When subsequent observations revealed that the bowers were in fact made by birds rather than humans, this no doubt changed the aesthetic experience and meaning of these structures.

In addition to supplying the crucial element of intentionality, ethological knowledge seems much less prone to the fusion problem than sciences such as chemistry, geology, or even evolution. Ethological knowledge appears to meet Parsons' two conditions for a 'fusible' theoretical belief, i.e., that the belief is about the object of sensation and involves only a relatively simple body of theory. Rather than requiring extended inferences or a set of challenging habituated skills, ethological knowledge can be easily incorporated by a viewer and quickly called upon in the moment of aesthetic experience. This is because such

knowledge typically involves life-world concerns and motivations to which humans can easily relate, including survival, defense, mating, social ranking, and comfort. I would actually take things a step further and say that these beliefs come close to being not theoretical beliefs at all but observational beliefs, the type of belief Parsons associates with our experience of artworks. While incorporating animals' motivations may still be an instance of 'seeing with' scientific categories/concepts, it typically does not involve complex theory but straightforward claims that resonate with everyday life experience. Another reason ethological knowledge is less prone to the fusion problem concerns the temporal nature of the experiences involved. Unlike the challenge of incorporating deep geological time into our sensory experience of a rock formation, our experience of animal behavior typically involves our intuitive, everyday sense of time, or what might be called organismic time. Unlike rock formations, many animals (certainly birds and mammals) engage the world at similar temporal rates as do humans, making the requisite connections psychologically easier to achieve. In contrast, it is psychologically difficult for the human mind to meaningfully incorporate something as foreign to daily experience as geological or evolutionary time.<sup>7</sup>

One virtue of my account is that it lessens the risk of anthropocentrism plaguing most other attempts to attribute meaning to nature. As described by Simon James, most human attempts to attribute meaning to nature have been "perniciously anthropocentric" because, rather than being genuinely sensitive and attentive to nature itself, such attributions often just impose human meanings and sentiments – sometimes even moral prejudices – onto nature through personifications or allegory. While natural science is of course a product of human ego, my

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<sup>7</sup> A similar issue arises in the study of plants, leading some botanists to use time-lapse photography as a means of overcoming the differences between humans' internal sense of time and the much slower pace of 'plant time.'

account seeks out the best available evidence about what the animals themselves are doing rather than making claims based solely in human sentimentality, cultural myth, or religious belief. In this way it honors Davies' exhortation that our aesthetic appreciation of animals ought to be "in terms of their own biological agendas, rather than ours alone" (Davies 2012: 74). A second virtue of my account is that it allows for claims of meaning within our aesthetic experience of nature without reverting to pre-Darwinian talk of nature as the product of a supreme artificer. Quite understandably, most Western philosophers abandoned any talk of meaning in nature long ago because such arguments typically appealed to a supernatural creator, e.g., God as artisan, who imbued Nature with meaning through the intentional act of creation. I am not attributing that sort of broad meaning to nature as a whole, nor am I invoking anything supernatural. Rather, the meaning I refer to only emerges from the intentional activity of particular conscious organisms.

Of course, it could be argued that intentionality is about as thorny a concept to deal with as is God the artisan, so some clarification is in order. Here I follow phenomenologists such as Edmund Husserl and analytical philosophers such as John Searle in defining intentionality as a subjective mental state in which an organism's conscious awareness is directed upon a task or an object of experience (Husserl 1900; Searle 1980). It is a claim about the structure of consciousness experience -- that consciousness is always a 'consciousness of' something. Examples include the subjective mental states needed to accomplish tasks such as finding food and water, warding off an attacker, luring a mate, or protecting one's offspring. Of course, such intentionality does not entail that the organism has a conceptual understanding of the task at hand. For example, a tiger need not be able to conceptualize 'family' in order to act in protection of his/her family unit (nor do humans, for that matter). While human intentionality is often exceedingly complex and exhibits multiple levels of awareness, such complexity and awareness is not required for the basic intentional stance I am invoking.

Levels of intentionality no doubt vary greatly across species, from basic survival desires in perhaps all mammals and birds up to the more complex motivations driving more complex species such as primates and cetaceans. We obviously can't directly know what animals subjectively experience, and uncritical anthropomorphizing should certainly be avoided. Yet ethologists have gotten better and better at designing experiments to test animal cognition, and their experiments have produced compelling evidence for attributing complex mental processes to myriad species. In fact, primatologist Frans de Waal has recently argued that this impressive body of evidence has turned the denial of complex animal mentality into an implausible dogma of its own (de Waal 2016). It seems much more plausible to assume that there is much overlap in the basic phenomenological experience of humans and many non-human animals.<sup>8</sup>

If my argument is sound, then it adds support for Carlson's analogy between art history and natural history by showing that his model can in principle accommodate claims in nature analogous to artistic meaning, and that it can do so without running afoul of the fusion problem. I shall now offer several clarifications concerning my claims and then consider two objections to the argument. The first clarification concerns the status of Carlson's model generally, and it is that my argument neither claims nor assumes that the natural science model is the only valid model for the aesthetic experience of nature. Indeed, I believe there are other important and plausible models, especially Brady's (1998) model of 'imaginative seeing' and Berleandt's (1992) 'environmental engagement' model. I leave open whether Carlson's model is superior to these competing models, as well as the plausible idea that there exists more than one valid model.<sup>9</sup> Rather, my focus is the narrow one of evaluating the

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<sup>8</sup> For example, see Derr and Thompson (1993: 18-22), which argues that humans and animals share numerous phenomenological categories such as 'umwelt,' 'companion,' and 'search image.'

<sup>9</sup> That said, I do take it as a virtue of Carlson's model that it at least strives to engage nature without projecting upon it exclusively human concerns. This is not to say that natural science objectively reveals 'nature in itself,'

art history/natural history analogy underlying Carlson's model, a focus that is warranted by its influential role in the literature.

Second, I am not claiming that all aesthetic experiences of animals will support interpretations of meaning. In some cases, our aesthetic experience of animals will involve the traditional application of Carlson's model, in which conceptual categories from science help direct and calibrate our sensory experience. In other cases, our aesthetic experience of animals may not engage with scientific categories at all, invoking instead more traditional aesthetic categories such as the beautiful and the sublime. Examples include appreciating the patterns and color of a bird's plumage or being awed by the majesty and power of an alpha wolf or lion. Thus, only in a subset of cases will interpretations of meaning be appropriate or even possible, namely in cases where ethology provides the context and narrative for interpreting particular behaviors. In this way, my claims about meaning are intended not to replace but to supplement these other modes of aesthetically appreciating animals.

I would also point out that my argument rests on a relatively conservative assumption about the extent to which intentionality exists in nature. In this paper I am limiting my claims about intentionality to mammals, birds, and other organisms about which it is uncontroversial to claim (for behavioral and anatomical reasons) the possession of consciousness. Thus I am assuming consciousness to be a necessary condition for intentionality. Yet this assumption is not universally shared, and disagreement exists about whether conscious awareness is actually a necessary condition for basic intentionality. This idea is evidenced in human affairs by the extent to which our motivations can sometimes reside outside of our conscious awareness. More interestingly, it is evidenced in nature by animal artifacts such as ant

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nor is it to deny that natural science is itself a social construct. Rather, it is only to say that Carlson's model deserves credit for at least aiming to engage nature on its own terms (as revealed by scientific inquiry).

mounds. It is difficult to believe that ants have much if any subjective experience, yet they are able to construct mounds of amazing complexity and sophistication to support conspecifics in the colony.<sup>10</sup> For example, certain termite species build mounds that extend three meters above ground and incorporate a complex system of ventilation chambers that function as a natural system of temperature and humidity control within the mound. How are we to understand the complexity of such constructions in light of the apparent simplicity of ants' cognitive abilities? A common response here is to say that the ants are mechanistically following an innate genetic program to build the mounds that requires little conscious awareness. Yet while no doubt true to some degree, this move just shifts the problem of intentionality down to the molecular level and leaves the origins of such sophisticated, and seemingly intentional, behavior unexplained. Such concerns have led some to question whether consciousness is actually necessary for intentionality. For example, Derr and Thompson have defended a view called 'descriptive mentalism,' which asserts that intentionality is best understood not as a conscious causal event within an organism but "as an organization of events in space and time chosen by the animal's behavior" (1993:22). On this view, the intentionality of a behavior pattern "is not some hidden inner 'mental' state, but an empirically determinable feature of a complex, very high-level behavior pattern" (1993:22). Drawing on the work of pioneering ethologist Jacob Von Uexkull, Derr and Thompson propose that intentionality goes "deeply into the structure of the organism and its component parts," and that "the most central concept in behavioral biology – natural selection – is itself intentional" (1993:21). If such claims are anywhere near correct, they would significantly extend the range of situations in which my argument would support attributions of meaning in nature. These ideas about non-conscious intentionality are

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<sup>10</sup> My intrigue with ants runs deep, as can be seen in my work at [www.theantcar.com](http://www.theantcar.com).

fascinating and may well be correct, but because of their speculative nature I limit my argument to claims of conscious intentionality.

I now consider two likely criticisms of my argument. The first criticism asserts that even if it is possible to generate claims of meaning from our aesthetic experience of animals, this meaning is still the same sort involved in our engagement with art. This is an important criticism that deserves serious attention. Clearly there are differences between the meanings we attribute to artworks and the meanings we attribute to the behaviors of non-human animals. This is to be expected given the very different underlying objects and behaviors being interpreted. The question at issue is whether these are differences in kind or differences of degree. Determining this is complicated by the fact that any analysis will be greatly affected by the assumptions one makes about the nature of art. For example, the most challenging form of this critique comes from assuming one of the more cognitive theories of art, such as that offered by Arthur Danto. Danto argues that artworks are figurative (rather than literal) representations that possess the logical structure of metaphor. This makes them ontologically peculiar representations in which the artist not only presents a work's content but simultaneously says something about – expresses a stance toward – that content. As Danto puts it, an artwork “presents its subject and presents the way in which it does present it” (1983: 189).

If one assumes something like Danto's account of art, then the meaning I attributed to my experience of the eagles' soaring display may indeed be different in kind from the behaviors and meanings associated with artists making artworks. It would seem that the eagles' behaviors are neither metaphorical nor figurative (even if they may be playful, dance-like, or even possessive of a style). Rather, these behaviors are literal and straightforward expressions grounded in life-world motivations, and as such, they do not involve the level of

cognitive sophistication involved in creating a metaphorical representation. Further, metaphorical representation would seem to require cognitive abilities that most non-human animals likely do not possess, namely a consciousness capable not only of making representations but also of taking a higher-order stance toward – expressing something about – the contents of those representations.

Yet while granting all of this, Danto's is only one of many theories of art that could be assumed here, and it is a theory that developed in response to highly theoretical and confounding artistic movements of the twentieth century such as Dadaism and Pop Art. The situation appears much less certain when one assumes a less cognitive theory of art. For example, consider Tolstoy's popular view that artworks are emotional expressions grounded in everyday life experiences (Tolstoy 1897). While individual cases will vary, emotional expression seems much less dependent on the higher-order intentionality required for metaphorical representation. Further, and more importantly, most ethologists now consider it uncontroversial to claim that many non-human species can be motivated in their behavior by emotions arising from life-world experiences, such as fear and jealousy. Of course, emotional expression through artistic means is still more complex cognitively than non-reflectively acting from fear or jealousy, but this seems to be a difference of degree rather than a difference in kind. An apt comparison would be the difference between an actor crying while playing a character in a tragedy and that same actor crying in real life about a personal misfortune. These are surely different, but both are species of emotional expression. Or, turning to another theory of art, consider the classical conception of art as mimesis, or the imitation of reality. Then consider the amazing skills of mimicry exhibited by numerous non-human species, such as the Lyre bird's amazing ability to mimic virtually any sound it hears, not only the calls of other bird species but also the sound of chain saws, camera shutters, and car alarms. Of course, the Lyre bird employs mimicry to impress potential

mates rather than to create art, but these differing ends do not change the fundamental behavior as being a cognitively and intentionally sophisticated act of mimicry. Humans also use mimicry for reasons other than art-making (including to impress potential mates), but this does not show that such mimicry is different in kind from artistic uses of mimicry.

While a comprehensive examination of other theories of art would be needed to sort things out fully, this brief survey is suggestive. Clearly, the meanings we interpret from art and from nature are not structurally identical, and the case of metaphor shows that sometimes the differences may well constitute a difference in kind. On the other hand, when one makes less cognitive assumptions about art's nature, the differences appear to be less striking, more a matter of degree. And this is sufficient for my purposes, given that the burden of argument is only to show that Carlson's model can in principle generate claims of meaning from our aesthetic experience of animals, not that such meaning will be identical in sophistication to the meaning found in artworks. The question is not whether non-human animals can make art but whether Carlson's framework facilitates interpretations of meaning analogous to the meaning attributed to art. The answer to this is yes, even if these meanings are of a simpler, more literal sort than the meanings available from art.

A second criticism of my argument asserts that in interpreting meaning from animal behaviors I have strayed too far from the aesthetic appreciation of nature and into simple nature appreciation. In a way, this criticism is a reappearance of the fusion problem, for it essentially claims that appealing to the scientific study of animal behavior inevitably distracts one from the sensory experience and produces mere 'meditations' aroused by sensory experience. I concede that utilizing outside knowledge of any sort can distract us from the immediate aesthetic experience, but this is a challenge we can also face when engaging artworks. Maintaining our aesthetic focus, whether of an animal or an artwork, while

incorporating outside knowledge poses an ongoing challenge and requires concerted effort by the viewer. During any such experience, the aesthetic perspective may be achieved, then lost, and then achieved again. For example, during my experience of the eagles in flight, it is likely that my attention to the aesthetic qualities of their movement was not persistent and sustained throughout the experience but rather shifted from the aesthetic stance to the scientific stance (and back again, numerous times). With sufficient practice, I may well foster the habits of mind needed to sustain a distinct and enriched aesthetic stance that consistently integrates the two. But the fact that maintaining an aesthetic focus can be difficult and require intentional effort does not undermine my argument, for similar challenges arise in our experience of art, especially highly conceptual art, where conceptual elements of a work may predominate over aesthetic elements. It is enough for my argument that the integrated aesthetic stance is possible, and that it is distinct from the scientific stance. While an ethologist can provide a detailed scientific explanation of the behaviors of those two eagles, this explanation would never be equivalent to the sensory experience of those eagles' dynamic maneuvers fused with this ethological knowledge. One is a scientific explanation, while the other is an aesthetic experience imbued with scientifically-grounded meaning.

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