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Aesthetic Appreciation of the Natural Environment: Scientific Knowledge & the Extension from Aesthetics to Ethics

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AESTHETIC APPRECIATION OF THE NATURAL ENVIRONMENT:
SCIENTIFIC KNOWLEDGE & THE EXTENSION FROM AESTHETICS TO ETHICS

By

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Aesthetic Appreciation of the Natural Environment

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Aesthetics has played an influential role in how we ascribe value to the environment. Yet, it seems that if we are to take the beauty of the natural world seriously, certain aesthetics judgments must be better than others. The scientific cognitive model posits that the natural world must be interpreted through an understanding of biological and geological categories, which are provided by scientific knowledge and common sense. While there are clearly merits to this model, it is not without its own set of problems and limitations. These problems exist in both the model itself and with its extension to environmental ethics. This thesis functions as an analysis and critique of this particular model, suggesting that it should not be thought of as comprehensive in both a descriptive and a normative sense, nor relied on exclusively for environmental decision making. I suggest two other models of aesthetic appreciation that can and should exist alongside the scientific cognitive model, eventually settling on a position of constrained pluralism.

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Preface: Why an Aesthetics of the Natural Environment Matters

Beauty is one of the things we value most in this world. The aesthetic imperative, which has us preserve something on account of its beauty, arises both naturally and readily. It is used to warrant the protection of many things, from art to architecture to natural environments. There are many reasons why we value the natural world, and aesthetic reasons are some of the most important among them. A sense of the beauty of the natural world has played a crucial role in motivating a shift towards valuing nature non-instrumentally, instead of merely as a resource to be exploited. Aesthetics has shaped environmental policy from the very beginning and continues to shape it in more ways than we might imagine. Traditionally, aesthetics has played a predominant role in environmental preservation. The work of Muir and Burroughs, whose approaches can be largely categorized as aesthetic, strongly influenced the development of the environmental movement. In *The Yosemite*, Muir wrote, “Everybody needs beauty as well as bread...where nature may heal and give strength to body and soul alike”.¹ Evaluations such as theirs have shaped policy and management in North America from the beginning of the twentieth century, particularly in management of national parks and wilderness areas. When we consider which places to save, which to protect, which to restore, or which to use for other purposes, the beauty of the landscape is often a significant factor in these determinations.

Aside from its predominant role in preservation efforts, there is a more fundamental way in which the aesthetic experience incorporates itself in our relation to the natural world. Whatever our reasons for enjoying nature and working to serve and

protect it, an aesthetic response frequently underpins much of our motivation. Our primary means of experiencing the world around us is visual, and so it should come as no surprise that at least some of our initial valuation relates directly to the primacy of this sense. When we confront the world, judgments of taste or beauty are some of the most fundamental reactions we have. We all have an aesthetic reaction to the environment around us, and there is a very real sense in which this reaction can motivate and guide an appreciation. This reaction is common in both the most seasoned naturalist and the most secluded city dweller, albeit to varying degrees and with differing foci. Given that the aesthetic experience is foundational, pervasive, and influential, it is one we should take seriously.

From the recognition that aesthetics has played a significant role in our relationship and valuation of the environment comes the normative question of what an aesthetics of the natural world should be. It seems that if aesthetics is going to shape an environmental ethic it must be of a certain kind. There is a sense in which everything in the world is subject to aesthetic appreciation, but this clearly won't be helpful when aesthetics is meant to justify our protection of the natural world. For aesthetics to be a useful tool for environmentalism, certain aesthetic judgments must be better than others. There needs to be a certain level of objectivity in our evaluations, and these evaluations should be deep and serious rather than superficial. An aesthetic that is deep and serious goes beneath the surface of an object and is adequately informed by an appropriate understanding of the natural world. Furthermore, it should be based on more than the subjective whims of the viewer, who may or may not be an appropriate judge of aesthetic qualities. Janna Thompson explains it the following way:

The link... between aesthetic judgment and ethical obligation fails unless there are objective grounds - grounds that rational, sensitive people can accept - for thinking that something has value. If beauty in nature... is merely in the eye of the beholder, then no general moral obligation arises out of aesthetic judgment. A judgment of value that is merely personal and subjective gives us no way of arguing that everyone ought to learn to appreciate something, or at least to regard it as worthy of preservation.²

The question of objectivity is at once a question of guidance, and there is a sense in which in order to have guidance, a certain degree of objectivity must be maintained. Without any objectivity, aesthetic taste becomes entirely subjective and arbitrary, which is particularly problematic if it is going to aid preservation efforts. To connect aesthetic value to environmental thought and action requires a guidance which in a sense limits the aesthetic experience, but in another sense enriches it. Just how much guidance and objectivity is required is a significant debate among aestheticians of the natural world.

Introduction: An Overview of the Project

This thesis will examine one particular model of aesthetic appreciation put forth by Allen Carlson known as the natural environmental model or more generally, the scientific cognitive model. The model will not only be considered in the general realm of aesthetics, but also in its application to ethical obligation and environmental decision making. By this I mean protection, preservation, and other related environmental management decisions in which beauty might be a factor. When I talk about the extension to environmental ethics, I have these kind of decisions in mind, all of which depend upon the recognition of value in the natural world. I will consider the model beyond the way in which it is put forth by Carlson himself, looking at how it is utilized by other aestheticians, both in the aesthetic experience and in the extension to ethics. I will point to some of the inherent problems in Carlson's model, although much of my critique will focus on how the model is used. While there are clearly merits to Carlson's model, I will ultimately argue that it should not be considered comprehensive.

In place of an exclusive model, I am going to recommend a pluralistic approach to environmental aesthetics. As to whether Carlson wholeheartedly supports a pluralistic model himself isn't exactly clear. He is concerned with an aesthetics of nature that addresses "fundamental issues about the nature of the natural world and our place in it," suggesting that models that deal most directly with this issue deserve most of our consideration.³ He believes science is best at addressing these issues, and so the scientific cognitive model should maintain a particular centrality in the midst of other models. What the issues are that Carlson alludes to are not exactly clear, nor is the explanation for

why science is the best means for achieving them. The extent to which he believes other models can and should exist alongside, supporting his own, remains ambiguous. There are others such as Marcia Eaton, however, who believe the scientific cognitive model should be relied on exclusively if aesthetics is going to inform our environmental decision making. Marcia Eaton puts it the following way:

...if we want to develop a basis for rational evaluation of a landscape's ecological sustainability, I am convinced that we must stress the cognitive. A patch of purple loosestrife, with its brilliant color, may cause a lot of pleasure... A large expanse of closely clipped, deep-green grass may cause soothing flights of imagination. But all of these objects threaten certain biosystems, and only someone whose aesthetic response is based on knowledge will act in ways that are sustainable ecologically and, ultimately, aesthetically.⁴

In other words, only an environmental aesthetic informed by environmental knowledge should be the foundation for ethical obligations based on this type of value. Eaton admits that other factors such as imagination and emotion can factor into our experience of nature, but that they are unable to provide a deep and meaningful foundation on which the aesthetic response can rest. While she may not completely disregard all other types of aesthetic responses, she clearly believes only one that is driven by scientific knowledge can create the extension from aesthetics to ethics. Eaton, and perhaps Carlson, seem to believe other models should defer to a comprehensive, scientific cognitive model, allowing scientific knowledge to serve as the final arbiter in our aesthetic judgments. This is the view I will be calling into question. Thus, I will not be arguing against Carlson in this regard, but only against the notion that his model should be relied on exclusively, which is an issue separate and irrelevant to the extent that Carlson himself embraces this notion.

It is true that aesthetic value cannot be entirely subjective if it is going to play a role in environmental decision making. However, scientific knowledge is not the only way to achieve a more objective aesthetic. Other models such as Noel Carroll's emotion-based model and Emily Brady's imagination-based model can also offer an appropriate level of objectivity. In this regard I will support Ned Hettinger's constrained pluralism of aesthetic models and show how other models can and should exist alongside the scientific-cognitive. These other models do maintain a degree of objectivity that is needed in order to guide our aesthetic judgments. Carlson's model should be embraced, but not exclusively. To weaken the model's strict dominance in the realm of aesthetics of the natural world, my approach will be twofold. First, I will point out the problems inherent in the scientific cognitive model and show why the extension to ethics can be accomplished in other ways. To rely exclusively on this model is to place too much limitation on the aesthetic experience and diminish the support aesthetic value may lend our duty to protect the natural world. Second, I will show how objectivity can be maintained through other models of aesthetic appreciation and how these models can still provide the guidance and depth required of an environmental aesthetic.

In the first section, I will introduce the scientific cognitive model itself and situate it in the realm of environmental aesthetics. I will look at two other models of aesthetic appreciation, the object and landscape models, showing how they are problematic. I will look at how the scientific cognitive model offers a better alternative, providing an aesthetic that considers the environment at large. I will examine Carlson's development of this model as an extension of Kendall Walton's categorical interpretation from art to the natural environment. This will serve to establish the objectivity in Carlson's model,

allowing for correct and incorrect and better and worse aesthetic responses. I will then point to the more general aesthetic this model supports, one that regards an object of appreciation *as it actually is* rather than what may or may not be perceived in it. I will then look at how scientific knowledge can also direct our aesthetic experience in ways that uncover a certain depth and seriousness that may have otherwise been missed in the absence of such relevant knowledge.

In the second section, I will discuss the ethical implications contained not only in the model itself, but in its extension to environmental policy and management. I will continue to examine the underlying normative assumption that we should appreciate nature as it in fact is rather than as what it may appear to be. I will look at how categorical knowledge provided by science shapes the aesthetic experience in ways that have ethical significance. I will look at Sheila Lintott's notion of an ecofriendly aesthetic and how scientific knowledge factors into its achievement. I will consider how Carlson's model contributes to designing sustainable landscapes and examine the notion of aligning beauty with ecological health. Embedded in this discussion is an instrumental view of environmental aesthetics that justifies the positive relationship between appreciation and environmental protection. Scientific cognitivism underlies the aesthetic notions of Lintott and Eaton, as they both see science as a useful tool for bringing beauty and ecological health⁵ together. I will discuss this idea in order to later show why science may not always be so useful in making these determinations.

In the third section, I will examine the strengths of the scientific cognitive model more closely and begin to consider other alternatives. I will look at other ways of moving beyond a superficial aesthetic that can work to thicken or deepen our aesthetic

appreciation of nature without relying on scientific knowledge. These other approaches are still cognitive, but stress cultural and historical knowledge rather than merely the scientific. I will consider how the humanization and cultivation that qualifies these responses may also be present in the scientific cognitive model, questioning the concept of appreciating nature as nature. I will then reexamine the aesthetic experience itself by returning to Walton's categorical interpretation in order to show how scientific knowledge need not entirely form our aesthetic experience for it to be appropriate and meaningful. To do this, I will draw upon Nick Zangwill's concept of cross-category judgment to show that part of the aesthetic experience exists outside of category attributions. This will provide the ground for suggesting that categories are not the only means of gaining a meaningful and objective aesthetic response. This section will question the strengths and highlight the limitations of the scientific cognitive model and will show why it should exist alongside other models of appreciation and not be considered the only useful model in the extension to ethics.

In the fourth section, I will continue to find limitations with the scientific cognitive model in order to eventually question the notion that only an environmental aesthetic informed by environmental knowledge is one that can lead to sustainable care and protectionism. I will examine the values we ascribe to the natural environment and how beauty functions in our preservation efforts. I will show how the neutrality of scientific knowledge creates a significant problem for the coordination of beauty and ecological health. In other words, it isn't clear how an aesthetic based on scientific knowledge should direct us to an environmental ethic. This will be pointed out not to diminish the role of aesthetics in environmentalism, but mainly to show that other values

ultimately steer our policies in a way that should allow for other types of aesthetic experiences. I will ultimately argue that the aesthetic response can be useful in the extension to ethics not in the direct guidance it offers to environmental policy, but in the value it bestows upon an environment. This value can then be assessed alongside other ecological values, such as health and sustainability, in order to guide environmental policy. To illustrate this I will examine how scientific knowledge operates in our appreciation of beauty in two problematic cases: spotted knapweed (an invasive species) and a sunset affected by pollution.

Having pointed out some of the weaknesses of the scientific cognitive model and having questioned how scientific knowledge functions with the extension to ethics, I will introduce Hettinger's idea of constrained pluralism in the last section. I will examine how objectivity can still be maintained in other models, particularly Noel Carroll's emotion-based arousal model and Emily Brady's imagination-based model. I will argue that these other models can and should exist beside the scientific cognitive model in order to provide a more complete aesthetic experience. This in turn will be able to accomplish more for environmentalism by providing additional rationale for preservation efforts. I will show how this rationale is not arbitrary, given that it not only offers a certain depth in the experience, but that this depth is open to an appraisal that is both cognitive and objective. The kind of aesthetic objectivity gained in these models, though different, should be thought no less meaningful as that provided by the sciences. This notion should be embraced based not only on my prior critique of the scientific cognitive model's own claim to objectivity, but also through an examination of how objectivity functions in these models. Objectivity is not based on categories with these models, but rather on

alternative accounts of reasonability and justification that have to do with the appropriateness of an emotion or the imagination in a particular context. With appropriate usage, these other models should be able to provide additional support for our ethical obligation to the natural world and subsequent policy and management decisions.

I: The Scientific Cognitive Model of Aesthetic Appreciation

Knowledge of what to appreciate in the natural environment and how to appreciate it is perhaps less straightforward than knowledge as it relates to art. Traditionally, environmental aesthetics has consisted of a transference of sorts, where artistic paradigms are simply applied to the environment. The two most notable paradigms in this regard have been the object and landscape models of aesthetic appreciation. The object model entails abstracting a physical object from its environment and appreciating it as one might appreciate a sculpture, paying attention to the actual physical qualities of the object itself. These qualities are contained entirely in the object of inspection and need not relate to anything outside it, namely, its surroundings. For instance, one may look upon the sensuous qualities of a piece of limestone, noting its form, color, shape, etc, treating it as one would a sculpture. Objects viewed this way are completely abstracted from their environments with no representational tie to reality.

The landscape model of aesthetic appreciation entails viewing the environment as one might in composing a landscape painting. Visual qualities that constitute the environment are typically those which lend it the kind of aesthetic evaluation one would encounter in a landscape painting or a postcard. This model is grounded in the concept of the picturesque and cultivation of the scenic viewpoint. This is probably the most natural and common type of environmental aesthetic, one whose presence we cannot escape when thinking about beauty in nature. According to Carlson, there are both ethical and aesthetic reasons for finding these models objectionable. Here I shall briefly mention the

latter, before moving on to discuss what Carlson sees as the most plausible paradigm, the scientific cognitive model.

The main problem with the object model of aesthetic appreciation is that it profoundly limits the character of the aesthetic experience. To show why this is the case requires making the distinction between nature and the objects of nature. With the object model we are relegated to the latter and are unable to exercise a more indeterminate aesthetic judgment that concerns nature as a whole. When we remove objects from their natural surroundings we lose an important, immersive part of the aesthetic experience that acknowledges our presence in nature. Removing objects also limits appreciation to sensuous and expressive qualities, with no regard for the environment in which they are naturally displayed. Carlson rightly points out, these objects are contained in and have developed from the elements and forces contained in the environment, and to ignore these elements would be to neglect a large part of what constitutes the object's aesthetic character. Qualities found in a piece of driftwood are the product of the object's relationship with the environment. For instance, its smoothness represents the force of the ocean as well as a sense of time. Abstracting objects in nature and appreciating them as though they were a sculpture robs one of a more nuanced appreciation that observes the environment in which natural objects are both found and constituted.

The landscape model is problematic as well, forcing us to view the environment in scenes that are both static and alienated from their proper context. By reducing the environment to a scene or view, this model requires one to create a two-dimensional impression of the natural world. Framing a scene in nature as one would a painting or photograph severely limits the type of aesthetic experience one might have. Not only

does this model limit our appreciation to visual qualities related to the framing of a landscape, but it can mislead us as well. Focusing merely on what is picturesque would have us neglect a great deal of experiences of the natural world that might otherwise be considered aesthetic. So much of nature does not fall under the category of the picturesque, but there are still many reasons for its aesthetic appreciation. Our obsession with scenery also has ecological ramifications, which we will come to later on. Carlson's main concern with the landscape model is that it requires an appreciation that does not regard the environment as it actually is, but rather as something it is not. The environment itself is not a landscape painting, and to view it as such would be to ignore the nature of the natural environment. The object model suffers from a similar neglect, and the failure of the two has Carlson seek a model that truly takes the natural environment into account.

Rather than an aesthetic that merely takes objects into account, Carlson wants to consider a broader concept which observes the environment at large. The consummatory experience of the natural environment must influence our aesthetic experience, but if it is to do so, it must be ordered and interpreted in a certain way. The recognition and distinction of certain aspects of the environment as foci of aesthetic appreciation seems necessary if we are to have an experience that is not overwhelming or confusing. Carlson suggests there are natural foci that are appropriate to each environment, where appropriate knowledge constructs limits and boundaries in the experience. In the case of the natural environment, the knowledge that is relevant in providing these appropriate limits is provided by science and common sense. Scientific knowledge becomes a tool for what and how to appreciate nature, granting us appropriate foci in the natural world for

the aesthetic significance. This notion is what forms the basis of the scientific cognitive model, the foundation of which can be traced to Kendall Walton's *Categories of Art*.

Carlson's first task is to show that relevant knowledge of an object in nature can change our aesthetic appreciation of it by changing how we perceive it. He seeks a non-relative, objective view of aesthetic judgment, which regards the object (nature) as it actually is. To do this he creates an account of aesthetics with nature analogous to Walton's account of aesthetics with art. Walton's position represents the anti-formalist view of aesthetics, where aesthetic characteristics are contextual and/or representative. This means they are assessed within the context in which the representations are made, historical or otherwise, as well as with regard to the things in the world they actually represent. This position is contrasted to the formalist position, which places emphasis on the compositional elements of art (its form and visual aspects), without any reliance on outside knowledge. Walton wants to get rid of the notion that works of art should be judged simply by what can be perceived in them. He does not mean to suggest that the appearance of art is inconsequential, but merely that it must be judged in light of its contextual or cognitive counterpart. A work's aesthetic properties depend upon its non-aesthetic properties, where relevant knowledge about a work can change our aesthetic appreciation. For Walton, aesthetic judgments are best understood in terms of categories, and it is in this interpretation that we encounter objectivity in art. The rightness and wrongness of an aesthetic judgment depends upon correct category identification and not merely upon the viewer's discretion.

The category in which a work is perceived clearly affects one's aesthetic judgment of it. Categories function to give a better determination of what a perceived

object is, which then affects what aesthetic properties the object has. They guide our aesthetic appreciation by supplying standards that direct the way we see an object.

Walton uses Picasso's *Guernica* as an example, where perceptible qualities that render an aesthetic judgment true or false are based in the category in which the painting belongs.

In the case of *Guernica* this would be the category of cubist painting. If *Guernica* were perceived differently, say as though it were a realist painting, statements of form and representation (from the standpoint of a realist painting) would likely be inappropriate.

For instance, in failing to place *Guernica* in the category of cubist painting, one might see it as awkward, inaccurate, exaggerated, etc.

Walton refers to three kinds of perceptible qualities: the standard, contra-standard, and variable. If *Guernica* is perceived as a cubist painting, its cube-like shapes and exaggerated forms will be perceived as standard; yet, if it is perceived as a realist painting, these same shapes and forms may be perceived as contra-standard or variable. The reason this is important is that not only is the truth value of aesthetic judgments affected by non-aesthetic qualities, but by whether or not the work is perceived in its correct category. Perceiving a work in its correct category entails knowledge of the category itself (its history, characteristics, etc), as well as knowledge of how to perceive a work in this category.⁶ This, of course, requires more than reliance on the senses. This knowledge is the type gained by familiarity with art and art history, and so is perhaps best provided by the art critic or historian. Correct aesthetic appreciation demands knowledge of the relevant non-aesthetic qualities. In other words, there is a strong cognitive piece to the experience.

Aestheticians like Allen Carlson want to extend this interpretation to the natural world. Non-aesthetic properties of objects in nature that are informed by cognition can affect the aesthetic experience. In the case of nature, knowledge of these properties is provided by the natural sciences, the categories of which function in an analogous way to nature as art historical categories do to art. In transferring the category interpretation to the aesthetic appreciation of nature, Carlson asserts that the perceptions of certain categories of nature are correct while others are not. Nature and art differ in the clear sense that with the latter we can know about its origin and intent. Initially it seems we are in a better position to judge art aesthetically based on this knowledge and the prescribed intention of being perceived within a certain category. It is worth mentioning that Walton himself believes his category interpretation applies only to art, and that in this sense we are not really in a position to judge nature aesthetically. Carlson, however, believes the analogy works, pointing to the existence of categories of nature.

Carlson argues that even though nature is not produced with the intent of belonging to certain categories, as artworks are, we can inform our aesthetic appreciation of it with a system of categories. Human production is not the only way that something can come to belong to an aesthetically relevant category, and in the case of nature, it stands to reason that such categories would be discovered rather than produced.⁷ Discovered factors are what make aspects of nature and natural objects fall under certain categories. To make correct aesthetic judgments about nature requires knowing something about what is appreciated. This knowledge is provided by the natural sciences or common-sense, which create biological and geological categories. This knowledge works in a similar manner as knowledge about art, allowing us to judge a work (or

nature) in its appropriate context. With the scientific cognitive model, appreciating something in nature in its correct category entails placing it in its correct biological or geological category. Being able to place an object in its correct category allows us to avoid aesthetic omissions and deceptions. By omissions I mean what is left out of the aesthetic experience in the absence of relevant knowledge and by deceptions I mean the certain mistakes that may be made in the absence of this knowledge. Without the relevant knowledge and background of cubist paintings, one might see a Picasso as awkward, exaggerated, etc. In nature, without a correct understanding of categories one might come to find a moose as an awkward deer, if mistaken as such. These omissions and deceptions are the type inherent in the object and landscape models and are avoidable in Carlson's scientific cognitive model.

The general aesthetic this model tends towards is one where aesthetic appreciation is centered on and driven by nature itself, rather than our preconceived ideals or abstraction of its elements. In order for this to happen nature must be composed at some level and understood a certain way. The model suggests appreciation cannot be based on preconceptions or ideals, as was the case with the object and landscape models, but rather by the real nature of the object. Perception informed by scientific knowledge and common sense allows for the kind of objectivity that can place aspects of nature in correct categories and thus, ground appreciation in the real nature of the object. Scientific knowledge and common sense come together in such a way that informs our experience, making it both intelligible and meaningful. As Carlson puts it, "we must recognize the smells of hay and horse dung and perhaps distinguish between them; we must feel the ant at least as an insect rather than as, say, a twitch".⁸ This is why Carlson talks about both

scientific knowledge *and* common sense, for there is a way in which they are both operative in our identification of the ant.

Carlson is ultimately concerned with the distinction between an aesthetic that is trivial or superficial and one that is serious and deep. The seriousness and appropriateness of the experience for Carlson depends on whether it captures objects “as they in fact are and in light of knowledge of their real natures”.⁹ The former is attained by the correct category identification, and in the case of nature, this entails recognizing it both as natural and as an environment.¹⁰ Knowledge of an object’s real nature is, of course, best provided by natural science and common sense, whether that object is one found in nature or is nature itself. This general aesthetic (which applies to art as well) is one of the primary normative assumptions that underlies the scientific cognitive model. Regarding aesthetic models themselves more generally, there is a descriptive sense in which Carlson admits to other types of aesthetic experiences. In other words, we may have other means of finding beauty besides relying on scientific knowledge and cognition. However, these other means usually tend to be more superficial or arbitrary, and there is a sense in which to achieve the seriousness and depth required of an appropriate aesthetic experience we should embrace his model. Therefore, the more general normative claim is that the scientific cognitive model is what we should embrace if we are to take the beauty of the natural world seriously.

In addition to aiding an appropriate aesthetic appreciation of the natural world, scientific knowledge also affects the aesthetic experience in a more direct way, in many cases helping to uncover its beauty. Carlson would contend that scientific knowledge yields certain qualities in nature readily recognizable as aesthetic. “Scientific information

and redescription make us see beauty where we could not see it before, pattern and harmony instead of meaningless jumble.”¹¹ Scientific knowledge in this sense can transform the natural world by helping us to perceive beauty. Holmes Rolston supports this notion in the following way:

Ecological description finds unity, harmony, interdependence, stability, etc....¹² earlier data are not denied, only re-described or set in a larger ecological context, and somewhere en route our notions of harmony, stability, etc., have shifted too and we see beauty now where we could not see it before.¹³

Science helps us uncover an aesthetic value that relies, in a sense, on correct, informed, and relevant ecological knowledge. This knowledge provides foci of aesthetic appreciation which uncover aspects of the natural world that may be considered aesthetic when viewed appropriately. When viewing a tree, knowledge that pertains to its growth, survival, physical features, age, type, ecological function, etc functions to enhance the aesthetic experience. It provides for a depth of experience that would otherwise be absent without this relevant knowledge. Viewing a tree as an oak with a host of qualities and characteristics offers a better, more informed aesthetic experience than if the tree is merely viewed as a tree, with no knowledge of how it fits into its environment and what features it has. In order to appreciate what aesthetic qualities nature has, it is necessary to know how it is should be viewed, for the qualities depend on how they are perceived. Appropriate appreciation rests on perceiving objects of nature in their correct categories, and only in doing so will we uncover the beauty we might otherwise not.

Carlson’s model gives us reasons for why knowledge plays an important role in the aesthetic experience of nature. Additionally, it gives us normative reasons for why it should. The underlying assumption of the scientific cognitive model is that aesthetic

appreciation must be informed and directed to certain foci. Carlson believes knowledge of the natural environment can provide the appropriate boundaries for the aesthetic experience, informing not only what to appreciate, but how to appreciate as well. Scientific knowledge can help us discover what is aesthetically relevant about nature by focusing our attention on certain aspects. This model succeeds at lending aesthetics an objectivity which seems to give aesthetic considerations more relevance and importance in environmental assessment by grounding them in science rather than subjective whims. Appreciation is centered on and driven by the object of appreciation itself rather than preconceptions or ideals. As we will see, this model has ethical ramifications as well as aesthetic.

II: Ethical Implications of the Scientific Cognitive Model

Proponents of the scientific cognitive model regularly assert that if aesthetics is going to influence environmental decisions, the aesthetic model must be of a certain kind. In this section I examine why the scientific cognitive model is widely regarded as the most appropriate model in aesthetics for providing support for environmentalism and environmental decision making. I will start by examining how ethics is thought to function in the aesthetic experience itself, as well as the general aesthetic of appreciating an object as it actually is. I will then look at how the method of category interpretation applies to the natural world as well as why the deeper kind of aesthetic the scientific cognitive model enables can be useful for preservation efforts. Underlying this discussion will be the notion of aligning beauty and ecological health, which some believe to be possible only if our appreciation of beauty is informed by scientific knowledge.

One argument in favor of the scientific cognitive model is that an appropriate aesthetic appreciation of the natural environment informed by scientific knowledge guards against aesthetic omissions and deceptions. Such errors can have ecological ramifications, perhaps most explicitly with the landscape model of aesthetic appreciation. If we come to value nature that exhibits a picturesque aesthetic this may cause us to preserve land that has little ecological value, while neglecting high value lands. Wetlands and marshes do not contain aesthetic qualities associated with the picturesque and so may often be exploited in favor of less ecologically important, but more scenic, land. Basing an ecological ethic solely on notions of the picturesque cannot inform our environmental

decision making, and if aesthetics is going to do work for environmentalism and preservation, it must go deeper.

To show how ethics can often be wrapped up in the aesthetic experience let us look at Berkeley Pit in Butte, MT. The Anaconda Copper Company began open pit mining in Butte to extract copper from lower grade ore in 1955, when copper prices were the highest they had been since World War I. In its years of operation, 316 million tons of ore were mined from the Berkeley Pit. The Atlantic Richfield Company (ARCO) operated the mine until 1982, when it was shut down due to continual declines in copper prices. When the mine was closed the water pumps in the Kelly Shaft were turned off, and groundwater from the surrounding aquifers began to fill the pit. The water, with dissolved oxygen, allowed pyrite and sulfide minerals in the ore and wall rocks to decay, releasing acid. This acidic water contains high levels of minerals and metals, such as arsenic, cadmium, copper, zinc, calcium, magnesium, potassium, sodium, iron, manganese, aluminum, chloride, fluoride, and sulfate. The pH of the Pit water is 2.5 to 3.0, and the existence of the aforementioned acids are what give the water its unique color.¹⁴ It is possible to imagine a perspective from which one might appreciate the unique red, orange, and yellow water color of Berkeley Pit. Without any knowledge of what water should look like and what caused the water in Berkeley Pit to look that way, we may easily regard it as beautiful. Yet, this aesthetic judgment is certainly affected when scientific knowledge tells us the cause behind the coloration.

Categorical knowledge provided by science and common sense tells us what the color of water should be, and so when water fails to fit into this standard category (which identifies it as clear or blue, etc) this changes our aesthetic appreciation. Berkeley Pit

must be judged in terms of its background and context, which are non-aesthetic qualities. In this case these qualities have to do with the existence of heavy metals, their reason for being there, as well as the effect these metals have on their environment. Knowledge of the origin of the coloration of Berkeley Pit transforms our perception, and this perception ultimately has ethical implications. These implications are ultimately derived from an aesthetic experience that is morally engaged, which is the type Carlson and others seem to be directing us towards. This is also the way in which Eaton and others believe the scientific cognitive model provides an adequate foundation for environmental decision making.

Carlson and many others believe aesthetic appreciation plays a significant role in shaping and forming our ethical views. He believes that to keep the two in harmony we must perceive an object in its correct category. This kind of appreciation is driven by the object itself *as it actually is*. Carlson provides the example of the aesthetic appreciation of a *Playboy* centerfold model. If we are to aesthetically appreciate such a model, we are appreciating her not as what she actually is (in the category of human beings), but rather as what she appears to be (in the category of sex objects).¹⁵ This aesthetic appreciation, if positive, has ethical implications in that it supposedly engenders a sexist attitude towards women. The point of this example is to show that the aesthetic experience goes beyond the senses and is influenced greatly by our “emotional and psychological selves”.¹⁶ There is a sense in which ethics and aesthetics are both shaped and reinforced by one another in this example. We may already have sexist views before we start looking at the centerfold and appreciating her in the wrong category, but there is a sense in which our ethical views are reinforced by continuing to appreciate the model in the category of sex objects.

What and how we appreciate significantly influences our ethical views. Yet, there is a complex reciprocity in which our ethical views determine the content of our aesthetic appreciation. Aesthetics and ethics seem to be, at least at times, intimately connected with one another. Of course, one can deny that an aesthetic experience needs to be morally engaged, and a certain kind of detachment may enable such an experience. Yet, the overarching normative claim in this example is merely that we should appreciate the woman *as she actually is*, and this is in the category of human beings.

Carlson extends this notion to the aesthetic appreciation of nature. The underlying normative assumption the scientific cognitive model both addresses and achieves is that we should appreciate nature as it in fact is rather than as what it may appear to be. Carlson believes this type of aesthetic appreciation will affect our ethical views. “By aesthetically appreciating nature for what it is, we will shape our ethical views such that there is the best opportunity for making sound ecological judgments about matters of environmental and ecological concern.”¹⁷ He gives the example of the human-made coastline, and how perceiving it in its correct category (a human-made rather than natural coastline), may influence the land management surrounding it. In this example, our environmental and ethical responsibilities change depending on how we perceive the coastline. If the rate at which salmon spawn along the coastline is decreasing, viewing the coast as artificial may be conducive to promoting the construction of fish ladders to aid with spawning. If the coastline is considered natural, such infrastructure may be seen as out of place, and therefore as ugly. In this case, the particular action undertaken depends upon category identification. The judgment of the coastline as natural or unnatural is not an aesthetic judgment, but rather a nonaesthetic judgment which affects the aesthetic.

Carlson sees an ethical merit in the correct identification of the categories themselves, as well as in describing things as they in fact are. He believes that correct identification provides the foundation for aesthetics, ethics, and the natural sciences to come together in a way where they can reinforce one another.¹⁸ For Carlson, objectivity has ethical implications and this is why the scientific cognitive model appears to contain the necessary requirements of an aesthetic that can do work for environmental and ecological concerns. In addition to the objectivity gained in correctly appreciating nature in particular categories, scientific knowledge leads to aesthetic value in the natural world in ways that we might otherwise miss, which itself can aid preservation efforts. The deeper type of aesthetic appreciation science enables may allow one to recognize the beauty in the swamp through an understanding of the ecological role it provides. Similarly, as Sheila Lintott points out in her Austin bat example, a scientific understanding of the ecological role and biological attributes of bats may enable an aesthetic revolution. People who once found the creatures repulsive and ugly come to aesthetically value them by gaining ecological knowledge. In these cases, scientific understanding both promotes and supports an aesthetic interest.

Lintott supports what she terms an “eco-friendly aesthetic,” which gains its backing from scientific education. For her, it is important for us to learn how to generate aesthetic responses that lead to sustainable care. She too believes a large part of this depends on placing objects in nature within their correct categories. Lintott provides the example of the Venus flytrap, which may be considered ugly by a person who is not scientifically informed since jaws are thought to be a contrastandard feature of plants. With scientific understanding we can come to recognize the jaw-like apparatus as a

variable feature, irrelevant to the object's membership in a particular category.¹⁹

Scientific understanding will also show that carnivorous plants like the Venus flytrap combine features common to other plants in interesting ways. These realizations - grounded in scientific understanding - have the potential to promote aesthetic appreciation of a plant that might otherwise be ignored.

In her essay "The Beauty that Requires Health," Marcia Eaton looks at how Carlson's scientific cognitive model contributes to designing sustainable landscapes. She examines how knowledge influences our aesthetic experiences as well as informs the relationship between aesthetics and ecological health. Eaton believes knowledge contributes to sustainability and that what is seen as ecologically unhealthy can thereby be seen as aesthetically deficient. Eaton supports the anti-formalist notion that knowledge of non-perceptible qualities which cannot be immediately seen are a necessary part of the aesthetic experience. These extrinsic qualities gained from scientific knowledge can have an effect on the viewer's perception of intrinsic qualities. In many cases, as Lintott also pointed out, this can cause the viewer to notice things that may have otherwise been overlooked. She lists several examples, such as the aesthetic response to landscapes disturbed by fire as well as non-native species.

Burned landscapes can often appear devastated, and to the untrained eye, may appear ugly in their ruin. Yet, someone with knowledge of fire ecology will be aware of the succession of vegetation and the differences in undergrowth in the future. Regarding non-native species, Eaton asks if one should feel aesthetic repulsion at the sight of a one, since they can have devastating results for ecosystems.²⁰ In both cases Eaton wants to point out that our aesthetic experience is influenced by our cognition, leading to

experiences that are either better or worse based on the type of extrinsic qualities. In the case of fire, it is suggested that outside knowledge creates a better aesthetic experience. In the case of invasive species, it creates a worse experience. While she acknowledges the difficulty in determining what ecological health looks like, she wants to maintain that aesthetic and ecological well-being can and should be perceived simultaneously. In other words, she wants health and beauty to begin to come together in a way where they both inform and reinforce one another.

In considering the extent to which they do come together, Eaton suggests ecologists and aestheticians must consider the role categories of scale and landscape play in our experience. The context in which one has an aesthetic experience determines which values become relevant. In both ecology and aesthetics the positive and negative features of a particular locale need to be clarified for an appropriate assessment.²¹ For instance, we cannot expect to find certain ecological features in every location. Prototypes for what counts as healthy must be based on the socio-geographical locale being considered, for what counts as healthy and beautiful in one may not apply to others. Biology and scientific understanding, of course, play an important role in this determination, telling us how certain environments should look and what features they should possess. Eaton uses the scientific cognitive model in this sense to allow for a correct recognition of particular landscapes and their relevant features.

For each environment or locale, Eaton believes aesthetic and ecological inventories should be made. Certain properties need to be determined so that category mistakes don't take place. The roots of this notion seem to be best supported with Carlson's cognitive model, where scientific knowledge provides the foundation for

determining what constitutes a healthy - and therefore more beautiful - landscape or ecosystem. Eaton's discussion of the role categories play in determining health and beauty should provide further insight into Carlson's example of the human-made coastline. Category attribution is central to our experience of a given locale, and our environmental and ethical responsibilities depend on our categorically informed experience. Perceiving the coastline in its correct category, as a product of human intervention, has clear implications for the management decisions surrounding it.

For both Carlson and Eaton, knowledge works not only to help us perceive qualities that may have otherwise gone unnoticed, but to perceive these qualities in the appropriate category. Eaton and others believe someone whose aesthetic response is based on scientific knowledge will be more likely to act in ecologically sustainable ways.²² There is a certain reciprocity in her view, as landscapes that are ecologically sustainable are ultimately aesthetic as well. "Aesthetic and ecological soundness will be perceived simultaneously. The upshot will be, I hope, that health and beauty begin to come together. If this happens, then both aesthetic and ecological sustainability may result."²³ Eaton suggests that if we are going to develop a basis for rational evaluation of a landscape's ecological sustainability, we must stress the cognitive.²⁴ Eaton and Lintott both demonstrate how an ecological ethic can be rooted in a scientific cognitive model of aesthetic appreciation. As Ned Hettinger points out, Eaton maintains an instrumental view of environmental aesthetics, where the aesthetic response is justified to the extent that it has positive implications for environmental protectionism.²⁵ There is a particular consensus among aestheticians that for an aesthetic model to have these positive implications, and thus do work for ethics, it must be deep and objective.

III. Re-examining the Scientific Cognitive Model

The main strengths of the scientific cognitive model seem to lie in the objectivity and depth it grants to the aesthetic experience. It allows us to find beauty where we may otherwise have not in addition to deepening beauty that is already present. We may find a particular tree beautiful, but how much deeper and more meaningful would our appreciation of its beauty be if we considered it in a larger ecological context? When we become aware of the tree as a manifestation of evolutionary forces, taking note of things like its age and functions, we become capable of a richer appreciation. Relatedly, the scientific cognitive model also enables an objectivity that comes from correct category identification, allowing us to view an object as it actually is. This enables us to avoid aesthetic omissions and deceptions, giving us a way out of worrisome tendencies in aesthetics that may have us favor scenic landscapes over ones that are more ecologically beneficial. This kind of preference results from omissions in the aesthetic experience itself.

When we are confined to superficial assessments of beauty, absent of scientific knowledge regarding the ecological features, role and interest of a given environment, we typically overlay the aesthetic experience with the type of trivial aesthetic notions inherent in the object and landscape models. When we take the extension to ethics into account, this is clearly problematic. Carlson believes that by appreciating nature as it in fact is creates better opportunity for making sound ecological decisions. In this section, I will examine some of the scientific cognitive model's strengths, showing other ways we can be afforded a richer aesthetic experience as well as locating the problem with

categories. In doing so, I will call into question the idea of appreciating nature as nature as well as the scientific cognitive model's strong claim to objectivity. Ultimately, I will argue that the judgment of beauty should be in part something that resides outside of category attributions.

The scientific cognitive model is indeed capable of allowing for a deeper aesthetic experience. It accomplishes this by directing our attention to certain qualities in nature that we can begin to recognize as aesthetic. Scientific knowledge adds another layer to our aesthetic experience, enhancing our appreciation of nature. In her essay "Scientific Knowledge and the Aesthetic Appreciation of Nature" Patricia Matthews points to the distinction between thick and thin conceptions of nature, where the latter focuses on surface qualities and the former on the deeper and additional properties afforded by relevant knowledge. Matthews refers to Robert Stecker's notion that scientific knowledge can enhance our appreciation of nature by allowing us to perceive it in more complex ways.²⁶ Matthews' notion of thickness can be thought of as synonymous with Carlson's idea of depth in the aesthetic experience.

In this way, knowledge works to fill in gaps, thickening our conception of the natural world. These gaps are filled in by the discovery of certain properties in nature we can find beautiful. Rolston alludes to these in the aforementioned quote from the first section about unity, harmony, and stability, suggesting that science uncovers these aesthetic qualities in nature. Yet, this idea seems to be problematic. Even if we granted that these properties were always found in nature and that they served to enhance our aesthetic experience, this doesn't preclude many other kinds of knowledge from significantly enhancing the aesthetic experience in various ways. The scientific cognitive

model can certainly deepen our appreciation in certain respects, but it is not the only model that bears this distinction.

Other cognitive approaches to the aesthetic experience can thicken our conception of nature by uncovering additional properties through certain types of knowledge that can add depth to the experience. In her essay “Appreciating Nature on Its Own Terms,” Yukio Saito discusses an “associationist”²⁷ appreciation of nature, where historical and cultural knowledge play an important role in the aesthetic experience. While this model is not without its own set of problems, it does show how local traditions, literature, and history can enhance the aesthetic experience, serving as a compliment or alternative to scientific knowledge. She believes certain indigenous traditions can help us understand phenomena and objects in nature, influencing the aesthetic experience. It would seem that other types of knowledge can inform and deepen our appreciation of nature in much the same way that scientific knowledge can.

Certain objects in nature have historical and cultural significance, and our knowledge of this significance is certainly going to affect our aesthetic experience. The experience an American has when viewing a bald eagle is influenced by the fact that this eagle is representative of our country. The fact that the bald eagle appears on most official seals and on the back of several coins is very likely to affect an American’s experience in seeing one. Its particular reverence in our culture is going to shape our perception differently than if it were just another bird of prey. This cultural knowledge can direct our attention to certain qualities of the eagle, serving to thicken of conception of the bird by adding another layer onto the experience. This notion becomes even more relevant when narratives relate directly to perceivable qualities of an object in nature.

In the White Mountains of New Hampshire there used to exist a jagged resemblance of a face in a series of five granite cliff ledges of Cannon Mountain. This rock image was referred to as the Old Man of the Mountain, and has provided much cultural significance to the area. Scientific knowledge certainly contributes to one's appreciation of the formation, such as the recognition that it was carved by glaciers. Yet, this seems to be overshadowed by the historical knowledge and cultural significance given to the rock. This knowledge affords an aesthetic depth of experience, and like the scientific cognitive model, is able to go beyond the surface. In this case the aesthetic value relies on correct, informed, and relevant knowledge, the difference being this knowledge is cultural rather than ecological. This knowledge provides foci of appreciation that uncover aspects of the natural world that may be considered aesthetic when viewed appropriately.

There are many examples where an associationist appreciation of nature can deepen the aesthetic experience, adding layers to initially perceived surface qualities. This knowledge allows for a deeper appreciation, although in a different way than the depth arrived at with scientific knowledge. Relatedly, cultural knowledge can also help us to uncover a certain beauty where we might otherwise have not. Just like scientific knowledge, it can help us discover what is aesthetically relevant about nature by focusing our attention on certain aspects of an object. Where the two types of knowledge differ, as Saito rightly points out, is that scientific knowledge pertains to what the object is in its own right, without any kind of human intervention or deliberate cultivation. Carlson himself seems to admit that in some cases cultural associations can enhance one's appreciation. However, he also maintains that if aesthetic appreciation is to be serious, it

must appreciate nature as it in fact is. Cultural and historical knowledge found in an associationist appreciation of nature fails to appreciate nature for what it actually is. Clearly, there are other models besides the scientific cognitive that are able to provide a richer aesthetic experience that goes beyond mere surface qualities. Its unique strength, therefore, seems to lie in its objectivity and ability to appreciate nature as nature. Again, one of the underlying normative assumptions of the model is that the seriousness and appropriateness of the aesthetic experience depends on whether it captures objects “as they in fact are and in light of knowledge of their real natures”.²⁸ Thus, because the associationist model doesn’t capture nature *as* nature it may be considered less serious and less appropriate as a model for environmental aesthetics.

Yet, what does it mean to appreciate nature as nature? Clearly, when nature is humanized and cultivated through certain kinds of knowledge, it is not being appreciated for what it actually is. But this is not to say that scientific knowledge is the only way of responding to nature as nature. Noel Carroll makes this point in his essay “On Being Moved By Nature,” in his discussion of responding to nature emotionally. “If I am taken with the grace of a group of deer vaulting a stream, I see no reason to suppose that I am not responding to nature as nature.”²⁹ Carroll seems to suggest that a scientific understanding of the deer does not aid in his ability to appreciate them for what they are. For Carlson, placing the deer in its correct category via scientific knowledge is what enables us to appreciate the deer as it actually is. Carroll, on the other hand, sees the grace of the deer as a quality that actually exists in nature, a quality we can appreciate without having to place the deer in its respective category. He would argue that in doing so, we are still appreciating the deer as it actually is. Carlson may question this notion

based on the normative claim that we should appreciate nature as it is, rather than as what it may appear to be. Yet, it is questionable as to whether the scientific cognitive model is the only means of accomplishing this. Perhaps more importantly, it is questionable as to whether or not it even accomplishes this itself.

In his essay “Icebreakers” Stanley Godlovitch discusses the humanization that lurks in science, questioning its strict dominance in objectivity and ability to provide a nonanthropocentric framework. Godlovitch first mentions the challenges (albeit controversial) presented by Antirealists, Internal Realists, and Relativists. Despite their controversy, he believes they do awaken enough doubt to motivate the resistance of excessive reliance on science in the realm of aesthetic appreciation. In other words, strict scientific realism which posits objective truths across time has been called into question. This should at least awaken some doubts for basing all of our aesthetic notions on scientific categories and interpretations, which, for instance, may be relative to their time. He then refers to the history of science, suggesting that if one theory turns out to be false, this shouldn’t ruin one’s aesthetic appreciation.

The history of science is partially one of rejection, false hopes, vainglorious fantasies. Firm scientific categories have been mistaken; presumed natural kinds never have existed; stock theoretical terms failed to refer; grand theories have withered. Suppose your appreciation of some natural phenomenon rested upon what turned out to be a false scientific theory. What do you suppose would happen? Would your appreciation be dimmed? Would you marvel the less? I certainly hope not.³⁰

Perhaps most significantly he reveals the operative constraints of the scientific enterprise, the categories of which arise on our own terms through theorizing, measurement, and experimentation.³¹ The functional limits of science categorize and compose nature in a way that has us question whether it is appreciating nature on its own

terms. “If we look to science to give us those needed categories on which to hang our appreciation, we exchange but one form of human-centered cognition for another.”³²

Relatedly, social constructivism shows us how the concept of experiencing nature as nature can be problematic. It seems to be epistemically impossible to ever purely experience nature because we can only encounter it within a human framework or through a human lens. In experiencing nature from a human perspective it can be maintained that we are not really experiencing nature *as itself*, since we necessarily experience it through the transformative lens of our perceptual and cognitive apparatus. In Kantian terms, we are denied access to the “thing in itself”. Nature will never be unmediated by categories, and so at the level of knowledge and experience, nature will always remain at arm’s length. By interpreting reality through the very categories Carlson suggests we should use to influence our aesthetic appreciation, we are unable to get to nature itself. Scientific categories do not get us out of this predicament of being unable to treat nature as nature, but rather make it more explicit. Thus, it would seem that the fact that we are human could preclude us from experiencing nature as nature. Scientific understanding doesn’t seem to get us out of this predicament and, as Godlovitch points out, there is a very real sense in which science itself humanizes.

While the idea that science can tell us what nature “actually is” should be questioned, it should not be abandoned. Science may be limited in its ability to enable such appreciation, and so could potentially be supplemented with other methods. The main point of this discussion was to merely show the ambiguity of the concept of appreciating nature as nature. Given that science itself may fail to enable an aesthetic appreciation of nature as nature, we should ask why this is something we should strive for

in aesthetics. In other words, why is objectivity in the aesthetics of nature so important and why do ethical decisions rely on it so heavily? Carlson argues that correct category interpretations are an essential part of the aesthetic experience, ones that ensure a lack of aesthetic omissions and deceptions. These deceptions are supposedly problematic not only from an aesthetic standpoint, but from an ethical standpoint as well, since they can go on to shape environmental decisions. Thus, Carlson and many others believe that if aesthetics is going to do work for ethics, it must be limited and relegated to categories. I will revisit this notion later on, but first let us look at the aesthetic experience as it is confined to category interpretation.

It seems that aesthetic judgments can be made that do not rely on knowing an object's relational properties to others in its category. While knowledge can certainly affect our aesthetic experience, it needn't inform it entirely. To relegate aesthetic judgments to category interpretation seems to omit a large portion of the aesthetic experience. Aesthetic responses are complex and there are many other elements besides scientific understanding that factor into these experiences. We should have no reason for thinking that these other elements, both cognitive and non-cognitive, are less meaningful in our response, and certainly not that they are less useful for the extension from aesthetics to ethics. To show why the aesthetic response can and should extend beyond mere category interpretation I will return to the discussion of art and introduce Nick Zangwill's example of cross category judgments.

In *Categories of Art* Kendall Walton wants to suggest that all aesthetic properties we judge are dependent on the category in which they are identified. Zangwill provides a response which lies in the psychological process that occurs when we make cross-

category judgments. For Zangwill, categories can qualify our judgments, but do not completely underline them. While we may say that something is elegant for its category, this doesn't necessarily mean that our judgments are category dependent. This is sometimes just a way of making quicker and easier ascriptions regarding our appreciation as a matter of degree.³³ Zangwill wants to make the distinction between matters of degree and category-dependence. He uses the example of Minoan and Mycenaean seals and how we may judge that the former are more dynamic as a class than the latter. If there is a Mycenaean seal we judge to be dynamic for its class, and a Minoan seal that is not dynamic for its class, we may still judge the latter to be the more dynamic of the two.³⁴ While we here appreciate the Mycenaean seal compared to most others of its class, we may still judge it not to be very dynamic all by itself. Thus, while our judgments and ascriptions are often qualified by a category, it is because we are speaking in terms of relativity and matters of degree. Zangwill points out that this is not the same as judging it merely from the art-historical category. And so, "category-dependent judgments are only possible because of category-neutral ones."³⁵

In order to make comparisons, we must be able to judge the intrinsic aesthetic qualities of a work and this often does not depend on knowing its relational properties to other works. This allows us to maintain the notion that certain works are more or less dynamic than others, irrespective of its context and category. It is conceivable that Walton could make the rejoinder that if we consider something to be dynamic for a painting, but not overall, we are somehow invoking a broader category that includes painting and more dynamic art forms. Yet, Walton's categories do not seem to deal with attributes or judgments such as dynamism, but rather with the categories/mediums

themselves. In other words, the judgment of beauty or dynamism is one that must remain outside our notions of categories in art, as categories do not always affect such judgments.

Zangwill's main emphasis seems to be that we should not always assume aesthetic properties relevant to a work of art are dependent on their art-historical category. As Carlson extended Walton's categorical interpretation from art to nature, I would like to extend Zangwill's point in the same way. The category method of finding beauty doesn't appear to exhaust the aesthetic experience, nor does it necessarily trivialize the beauty which may or may not be present. Without categories or in moving beyond categories, Carlson sees a certain kind of trivialization taking place. Yet, is the beauty of a landscape necessarily trivialized when we compare it to another? What is important to grasp here is that the means for comparison often come to us in other ways besides categories. While knowledge of categories, both in art and nature, can influence an aesthetic experience, it does not provide its entire foundation.

In this section I have shown the limits of the scientific cognitive model and how many of its supposed strengths can be achieved through other modes of aesthetic appreciation. I have called into question the concept of appreciating nature as nature (or an object on its own terms), as well as the model's claim to a strict objectivity. Godlovitch's point about humanization at least shows that the objectivity found in the scientific cognitive model is of a certain, restricted type. This type, I will later suggest, is not superior to the type of objectivity at work in the models of both Carroll and Brady. In this section I have also shown how, in relying on a rigid set of categories, the scientific cognitive model limits the aesthetic experience, missing out on a fundamental element of

beauty and a means of its attainment. These limitations will be important to keep in mind when considering alternative modes of appreciating nature, both from an aesthetic standpoint and from the support this value lends to ethical decision making. I have set the foundation for showing how the scientific cognitive model narrows the aesthetic experience by limiting it to categories and if relied on exclusively, limits the work aesthetic considerations might do for preservation efforts.

IV: Further Problems for the Scientific Cognitive Model

We can find beauty in the natural world in a multitude of ways. The aesthetic response to nature is complex and to limit it to correct category interpretation based on scientific knowledge and common sense seems to rob it of something essential. There seems to be a certain level where appreciation of beauty goes beyond categories, a level that I would maintain is both serious and appropriate. I would also argue it is one that can still be useful for the extension to ethics. The scientific cognitive model leaves out a significant portion of the aesthetic experience and what it omits other responses can help illuminate. The aesthetic imperative which has us protect something because it is beautiful can be arrived at in various ways, and there is no reason for thinking other responses to the natural world may work to undermine this imperative. In this section I will provide the foundation for positing that other aesthetic responses to nature can still do work for ethics without compromising environmental decision making. I will show how scientific knowledge in the aesthetic experience doesn't always provide for clear cut decision making. This knowledge can be viewed in many instances as irrelevant to both aesthetic and ethical responses. Relatedly, we will investigate the type of value that takes precedence when beauty and ecological health fail to line up.

Carlson argues that correct category interpretations are an essential part of the aesthetic experience and ensure a lack of aesthetic omissions and deceptions. These deceptions are supposedly problematic not only from an aesthetic standpoint, but from an ethical standpoint as well, since they can go on to shape ethical obligations and environmental decisions. Recall Marcia Eaton's idea that the extrinsic qualities provided

by cognition can affect the viewer's perception of intrinsic qualities. This can lead to either a more positive or negative aesthetic experience as she shows with the examples of the burnt forest and invasive species. Eaton's goal, of course, is to bring health and beauty together, and she believes that only in relying on scientific knowledge and correct category perception can we begin to do so. Yet, in so doing I would argue that one is forced to rely on a value besides beauty. Eaton wants to equate beauty with health, but beauty is much more than merely health. Health is its own type of value, while beauty is another. At the very most, health is just one component of beauty. It seems even with scientific knowledge we may not find a swamp in New Jersey more beautiful than a mountain vista in Glacier National Park, despite the fact that the former may serve a more ecologically beneficial role or may, under certain circumstances, be a healthier ecosystem than the latter. In other words, preservation efforts in this case aren't dependent on beauty, nor should they be. The beauty in this case lies elsewhere, and it should be clear that scientific knowledge is informing environmental decision making without the use of aesthetics. This should come as obvious, but requires further discussion in order to provide a proper foundation for the incorporation of other of aesthetic models.

To further explicate this notion let us consider the example of an invasive species: spotted knapweed. Knapweed can have a profound effect on an ecosystem, altering its structure, organization, and function. Soil in areas that are dominated by this noxious weed can have lower amounts of organic matter and available nitrogen than soil that supports native plants. This weed alters the abundance of native plant species by outcompeting them, producing a greater abundance of seeds, growing faster, and draining the soil of water and nutrients. Knapweed has been shown to reduce biodiversity,

increase soil erosion, and replace wildlife and livestock forage on rangeland and pasture.³⁶ As Eaton pointed out, scientific knowledge about spotted knapweed and its ecological effects can have a negative influence on the aesthetic experience. This is, of course, the familiar idea that relevant knowledge of non-aesthetic properties should affect our aesthetic experience.

Yet, there is a very real sense in which despite this knowledge, one may still come to see a field full of these purple flowers as possessing beauty. Scientific knowledge is neutral and beauty is ultimately derived from the features of an object or landscape that one chooses to emphasize. We will consider this point more fully later on, but first let us examine the normative ecological ramifications of this particular aesthetic experience. Should we work to protect the knapweed and preserve it on account of its beauty? Certainly not. What this example illustrates is that a value other than beauty is being imported into ethical, value-based decision making. Rather than reinterpreting the beauty we see from an ethical standpoint based on scientific knowledge we should be able to acknowledge the beauty in a field of knapweed and base our decisions on values other than beauty, namely, the value of ecological health. To masquerade the latter as the former entails implausibly denying an essential part of the aesthetic experience.

Scientific knowledge serves to destroy the aesthetic experience in the case of the invasive species, but only in a limited sense. Correct category interpretation serves to identify the plant as an invasive species and make one aware of its harmful effects on the ecosystem in which it is contained. Yet, recall, as Zangwill showed in the last section, that a significant part of the judgment of beauty lies outside the realm of category identification. The aesthetic imperative that has us protect something because we derive

value from its beauty clearly falls apart in this case, although I would argue not because the knapweed is not beautiful. It falls apart because the value of whatever beauty the plant may or may not possess is insignificant when compared to the harm it causes the ecosystem. One shouldn't align ecological health and beauty in this case, but rather separate the two and acknowledge that the latter is more important to decision making.

The obvious reply from the scientific cognitivist in the case of knapweed is that relevant knowledge will automatically have a negative influence on the aesthetic experience, or at the very least, change the quality of the beauty. With this in mind, Patricia Matthews in her essay "Scientific Knowledge and the Aesthetic Appreciation of Nature" provides the example of a black eye on a child who was the victim of abuse. She points out that the bruise, if taken out of context and without relevant knowledge surrounding its color variation, might be found as beautiful.³⁷ However, once the bruise is determined to be a sign of abuse, and it is understood why a blow to the face might result in this kind of color variation, the viewer no longer sees it as such. At the very least, the quality of the beauty that it may still exhibit is utterly transformed into something of a more sad nature. "It is not just that the bruise is viewed as both sad and beautiful, but the sadness pervades the beauty and changes its aesthetic quality."³⁸

Matthews claims this same kind of change may happen with invasive species. Yet, while the quality of the beauty may change when we recognize the invasive as being harmful to the environment, there are no non-question begging justifications for preferring one type of beauty over another. The notion that beauty based on scientific knowledge is helpful in environmental decision making is problematic because science itself isn't as value-laden as Eaton and others might have us believe. Scientific

knowledge does not inform us as to why we should prefer a non-harmful indigenous species over one that is invasive and harmful. It merely gives us the means for distinguishing the two, and if we are still inclined to find the knapweed beautiful, science gives us no reason for thinking otherwise. The connection from beauty to ethics is not fully made, as scientific knowledge on its own doesn't provide us with clear-cut ethical decisions. The study of ecology may guide us to undertake certain actions when coupled with resource management and conservations goals, but this has nothing to do with beauty. If beauty is our concern, biological knowledge and appreciation of knapweed may interfere with the type of ecological knowledge that should supposedly engender a negative aesthetic response.

Yet, if beauty is still a relevant concern, recognizing knapweed as knapweed and being aware of its impact doesn't automatically lead to sound judgments about matters of environmental concern. In other words, it is not clear how scientific knowledge, in so far as it helps us to recognize beauty, should inform our environmental decision making. Scientific knowledge is neutral, and it doesn't seem to always be that helpful for our preservation efforts when beauty is the value driving these efforts. This is because scientific knowledge can lead to conflicting aesthetic responses. With spotted knapweed, scientific knowledge may inform the viewer of the plant's detriment to local ecosystems, but it may also uncover a wealth of aesthetic interest in the species itself. Knowledge of the plant's origin, reproductive efforts, and resiliency may just as easily provoke a positive aesthetic appreciation. The fact that the plant is harmful to its local environment is a fact science helps uncover, not a value that it helps support.

How science is used in the case of the invasive species is ultimately up to the subject assessing its beauty. One might recognize the plant as harmful, inducing a negative aesthetic response, while another may recognize the plant as an interesting example of how a species can thrive in the absence of native agents of control. Either way, scientific knowledge is not going to offer clear cut normative insights while under the umbrella of aesthetics. Even if science enables a positive aesthetic reaction, we are not going to preserve the invasive species. It would seem an aesthetic model that is so intimately connected to ethics would be able to rule this judgment out. Yet, with science's neutrality, no automatic response of this kind can come from this model. Another value needs to be imported for our decision making and this value - that of ecological health - ultimately resides outside of the aesthetic experience. Furthermore, it isn't exactly clear at what point ecological health and beauty line up, and each value seems to reside in a spectrum that makes their alignment a bit unclear. For instance, it isn't exactly clear as to what constitutes ecological health.

Consider the aesthetic experience of a sunset. Colors in the sky are determined by how sunlight interacts with nitrogen and oxygen molecules in the air, which deflect light in all directions. This is known as Rayleigh scattering. Colors with shorter wavelengths like violet and red are scattered most, indicating the existence of more particles in the atmosphere. Red sunsets are caused by aerosols, which are solid or liquid particles originated from both natural processes and human activity. Aerosols are produced when gas molecules enter the atmosphere and react with other chemicals. One such case is the burning of fossil fuels, which releases sulfur dioxide into the air which turns into sulfuric acid aerosols. Natural aerosols can come from a number of things, including forest fires,

sandstorms, and volcanic eruptions, the latter of which inject sulfuric acid droplets into the stratosphere.³⁹ Scientific knowledge, in the case of the sunset, reveals how the colors in the sky are determined as well as what is causing the sulfuric acid droplets to be there in the first place.

Knowledge of what makes a sunset red in both natural processes and human activity is based on scientific understanding. According to the scientific cognitivist, this understanding is meant to inform and ultimately shape the nature of the aesthetic experience. In both the case of a red sunset induced by a volcano and one induced by smog, one is confronted with sulfuric acid aerosols. In one case a proponent of the scientific cognitive model would maintain that scientific knowledge has a positive effect on the aesthetic experience, and in one case a negative effect, despite the fact the experiences may be perceptibly indistinguishable and that they both involve sulfuric acid. This is because knowledge of what produced the sulfuric acid is ultimately shaping both aesthetic and ethical judgment of the phenomenon. It should be clear that if we import scientific understanding, we are probably going to have a more negative reaction when looking at a sunset over Los Angeles. Common sense tells us there is a high concentration of pollution and man-made aerosols and scientific knowledge tells us how these aerosols affect the sunset. Relatedly, our experience of a red sunset caused by a volcano is bound to be of a more positive nature. Yet, it isn't exactly clear why this should be the case.

First, the existence of sulfuric acid in the atmosphere is no more detrimental in one case than it is in the other. If we are to align beauty with ecological health these two instances must remain virtually indistinguishable. Valuing one over the other merely

because it is natural involves importing a whole other set of values having to do with the natural and artificial distinction. The problems of this distinction are well known.⁴⁰ It isn't problematic to value one sunset over another because it is natural, but this entails importing another value besides beauty. Another, and perhaps more significant problem lies in the line that has to be drawn to distinguish one experience from the other. The example is clear cut in the case of an LA sunset, or perhaps even in the case of a remote volcano, but what about when the example is less obvious? It seems there could be many cases where the sulfuric acid that causes red sunsets could be a combination of man-made and natural aerosols. At what point and with what concentration is the experience made positive or negative? It would be an odd move to base an aesthetic experience off this determination and one can imagine a team of scientists working diligently to pin down the concentrations of natural and man-made aerosols before we can be in a position to appropriately judge the beauty of the red sky. Is this what is needed for a deeper, more serious aesthetic? I should hope not, and there is a sense in which science frustrates the ability to direct our ethical and environmental decision making when it is wrapped up in aesthetics.

In this section I have argued against the alignment of beauty and ecological health and have shown that scientific knowledge isn't always useful in locating a beauty that will provide clear normative insights for environmental decision making. I have treated beauty and ecological health as separate values, suggesting that if beauty conflicts with ecological health, it should be pushed aside. This is hardly a controversial claim. More significantly, I have shown that even when arrived at with scientific knowledge (via the scientific cognitive model), beauty can still conflict with ecological health. When this

happens our environmental decisions are informed by scientific knowledge, but knowledge that is clearly departed from the realm of aesthetics. Given that beauty is not the deciding factor we should be willing to consider other models of aesthetic appreciation. This is not to say that any model will do, as I still want to maintain that some aesthetic responses are better than others. The quality of the aesthetic response has nothing to do with the work it does for ethics, but should be deemed appropriate or inappropriate on its own right. This is important because beauty can be achieved in a multitude of ways and just because this value can be conferred doesn't mean it should be. Whether or not it should be has less to do with the ethical implications and more to do with the plausibility of the aesthetic model itself. This is, of course, a matter of the model's depth, seriousness, appropriateness, and objectivity.

V: The Move to Constrained Pluralism

It goes without saying that ecological decisions needn't rely on aesthetics. Relatedly, ecological health and beauty aren't always going to line up. The point of this discussion is not to suggest either of these notions, but merely to point out the move that takes place when they don't line up. This move, which pushes aesthetic considerations in the background, happens whenever ecological health outweighs aesthetic concerns. What this move suggests isn't that aesthetics should be completely ignored, but rather that there is always a certain kind of safety net ready to steer environmental decision making, no matter what the aesthetic value given to a segment of nature. Scientific knowledge may help to uncover an aesthetic beauty or interest in a forest decimated by a beetle population due to fascination with the beetle's ability to thrive, but this will hardly provide the impetus for preservation. Scientific knowledge doesn't provide any more grounds than any other model for thinking that aesthetics and ecological health need to line up.

The normative claim that comes from this is ultimately secondary and separate, and scientific knowledge is no more than a neutral bystander in this regard. There are some cases where beauty and ecological health come together, but there are also many cases where they do not. The worry for those like Eaton is that without science to guide aesthetics, we may end up with arbitrary judgments and therefore ecologically harmful decision making. The fact that a value lies outside of the aesthetic experience should guard against the worry that more subjective aesthetic experiences may be harmful. Relatedly, it isn't exactly clear why aesthetic judgments that aren't based on science are

necessarily arbitrary. In this section I will examine two other models of aesthetic appreciation and show why they may serve as compliments to the scientific cognitive model in order to provide further support for preservation efforts. To do this I will show how objectivity is still maintained in these models, which provides the means for better and worse aesthetic responses while guiding our experience in an appropriate manner.

Scientific knowledge provides one kind of aesthetic interest or value that is grounded in a certain kind of cognition. There is no reason to suspect that other kinds of interest cannot aid in preservation efforts as well, and do so in an appropriate manner. Just as focusing on the picturesque may have us neglect a great deal of experiences of the natural world that might otherwise be considered aesthetic, so too does relying solely on science. Furthermore, relying on science may cause us to miss other appropriate aesthetic responses. Some are concerned that without an aesthetic based on scientific knowledge and categories, aesthetics lacks a certain importance in environmental assessment, basing beauty's value on the whims of the viewer. Without this objective ground for aesthetics, some believe we are more subject to aesthetic omissions and deceptions that come from incorrect category interpretation.

In the previous section I explored how science itself may be limited in its objectivity. Relatedly, I have just discussed how when it comes to environmental assessment, other values besides beauty ultimately shape our decision making. Furthermore, the worry that these other models fail to appreciate nature as nature is problematic when it is questionable as to whether or not this is even possible with science. Thus, we may start to wonder why we need to worry about these other models if they are still ultimately producing value in certain environments. Is there a problem with

establishing ethical obligations to the environment based on a value that was achieved by more subjective means? We may wonder what this problem is if beauty is not the ultimate deciding factor for our environmental decisions. If objectivity is the main goal, it isn't clear that scientific knowledge needs to serve as the foundation of the aesthetic response. So what do these other responses to the natural world look like, and where might we locate their justification?

While maintaining that some aesthetic responses to nature are better than others, some have proposed to handle the issue of objectivity differently. Noel Carroll's emotional response model and Emily Brady's imagination based model attempt to keep objectivity in the aesthetic response, but through a means other than scientific knowledge. In his essay "On Being Moved by Nature," Carroll writes "any competing picture of nature appreciation, if it is to be taken seriously, must have a comparable means to those of the natural environmental model (scientific cognitive) for solving the problem of objectivity of nature appreciation".⁴¹ Rather than scientific knowledge, Carroll bases his objectivity on emotional arousal, suggesting that certain emotional states may or may not be appropriate. According to Carroll, we can be moved by certain encounters with nature without any knowledge of natural history. Furthermore, these types of aesthetic responses are no less appropriate than those based on scientific knowledge. In Carroll's mode of appreciation, less emphasis is placed on the intellectual elements, and more on the visceral and emotional elements that constitute the aesthetic response to nature.

Objectivity in Carroll's model depends on whether or not emotions can be determined to be appropriate or inappropriate. If they can be assessed on this ground, they are open to cognitive appraisal. Carroll uses the example of fear, suggesting that

such an emotion is appropriate for an emoter if the object of the emotion is considered dangerous. What determines the danger in this case is whether such a belief is reasonable for others to share. There must be some criterion to satisfy the appropriateness of a particular emotion and for Carroll this is generally thought to be determined by reason, consensus, and common sense. In this way he would argue there is a cognitive component to an emotion, albeit of a different sort. In another example, Carroll suggests it is appropriate to be moved and excited by the grandeur of a towering waterfall. If the belief of the cascade being large scale is one that can be reasonably shared by others, then the emotional response can be considered objective.⁴² But what if one agrees that the cascade is of a large scale, but is not moved by the waterfall? In this case, Carroll suggests we are simply going to find this response inappropriate. If the judgment is that the towering waterfall is not of a large scale, we are apt to conclude that the subject either does not understand the notion of large scale or is irrational to some degree.⁴³ This also may be due to the subject using the wrong comparison class, comparing the towering waterfall to something far larger, such as the universe rather than judging it in relation to the human scale.

It may at first seem that when Carroll invokes the notion of correct and incorrect comparison classes he is supporting Carlson's categorical interpretation. Yet, Carroll maintains that establishing the relevant comparison class does not depend on scientific categories. He provides the example of the blue whale, suggesting that one may still be moved by its grandeur while thinking of it as a fish. The same could be said of having an emotional response to mountains without an exact geological knowledge of their formation. There is a strong visceral and emotional component when we stare at the

Missions, regardless of our geological knowledge. The scientific cognitivist's response in this case should come as obvious, which will be to merely suggest that such aesthetic appreciation is of a more shallow and less serious nature. Carlson admits that we can simply enjoy nature, but that a serious aesthetic appreciation requires some level of objectivity. Carroll responds to this worry by pointing out that "if the test of whether our appreciation of nature is deep is whether the corresponding judgments are susceptible to objective, cognitive appraisal," there are some cases where an emotional response can pass the test.⁴⁴ Granted, the objectivity in Carroll's model is of a different variety than Carlson's, but he denies that this leads to a more superficial aesthetic. How depth in the response is measured isn't exactly clear. Carroll admits the depth gained in a scientific cognitive response may be different than that of emotional arousal, but this doesn't mean it is more important.

Emily Brady's imagination-based environmental aesthetic focuses on the significance of imagination in our aesthetic response. For instance, the awe we experience when looking at a very steep cliff is intensified when we imagine ourselves jumping off it. Brady emphasizes the importance of description in her aesthetic model. She believes that imagination plays an essential role in uncovering the aesthetic character of a place, and that once this character is realized and valued, we have further means for conservation. Imagination allows us to make links and associations to other things so we can get a better grasp of what we are experiencing. She provides the example of imagining a forest before and after it has been cleared which enables the viewer to "emphasize the empty, stark aesthetic character of the place".⁴⁵ This allows the viewer to incorporate some subjectivity into the aesthetic response while relying on a type of

cognition that isn't based entirely on scientific knowledge. There is a descriptive sense in which the aesthetic experience automatically draws upon memory and imagination as it makes associations with given phenomena. Yet, there also appears to be a normative sense in which such associations are useful for deepening the aesthetic experience and providing further means for valuing a particular landscape.

The imagination model initially seems to lead to a merely subjective, arbitrary aesthetic, but for Brady, not every imaginative response to nature is appropriate or relevant to the aesthetic appreciation at hand. She achieves a distinct kind of objectivity not all that different than Carroll's. Shallow and naive responses are to be avoided, and objectivity centers on judgments that are reasonable and justifiable.⁴⁶ The type of imagination involved in the aesthetic response must be of a very specific type. Brady suggests that we must "imagine well," which can be thought of conceiving of imagination as one would a virtue, where skill and appropriateness depend upon the context. In this way, Brady is able to refute the claim that her imagination-based model leads to an aesthetic that is entirely subjective and arbitrary. Imagination in this sense also requires the aesthetic notion of disinterestedness, which frees the mind from any self-interest or instrumental concerns that may incorporate themselves into the aesthetic experience. Aesthetic responses in which our imagination instrumentalizes nature are inappropriate. In addition to providing an objective ground for valuing aesthetic judgment, Brady's notion of disinterestedness can be useful for the extension to ethics. This alleviates worries which are tied to more subjective responses, for example, the attractiveness of a clear-cut forest in the eyes of a logging executive.

Aesthetic judgments for Brady must be reasonable, justifiable and disinterested, and because of this she is able to maintain objectivity in the aesthetic response while going beyond the scientific cognitive model. One can imagine Carlson responding to Brady in a similar fashion as he might have to Carroll, suggesting that such an aesthetic is superficial and more tied to the subjective whims of the viewer. However, while the objectivity of Brady's model is again of a different type than Carlson's, this should not lead us to deem it any less serious or appropriate to the aesthetic response. For one, the judgments of Brady's imagination model are also susceptible to cognitive appraisal. There remains a cognitive element in the aesthetic response of both Carroll and Brady given that emotions and imaginations are ultimately founded on thoughts and beliefs. Ultimately, it is reliance on this element of cognition that enables a certain kind of objectivity in the aesthetic response. Like Carlson, Carroll and Brady suggest that some aesthetic responses are better or worse than others, but want to point out that this can be determined on grounds other than science. These models show that at least a portion of the aesthetic experience resides outside of correct category identification, doing so in an appropriate manner. Because emotions and imagination can both be assessed by whether or not they are appropriate, they are open to cognitive appraisal and therefore retain a degree of objectivity.

In his essay "Objectivity In Environmental Aesthetics," Ned Hettinger proposes a "constrained pluralism" in environmental aesthetics, suggesting that various types of responses to the natural world can be useful for environmentalism. This pluralism is "constrained" in that it allows for more subjective responses, but still maintains some limitations in these responses. For one, they must maintain some degree of objectivity.

Hettinger suggests that some environmental responses are more appropriate than others and that a rejection of scientific cognitivism as the only appropriate model doesn't imply an arbitrariness of appreciation. Hettinger thinks we should find criteria for evaluating better and worse aesthetic responses, but that these criteria can come from a variety of sources.

Legitimate pluralism regarding environmental beauty does not prevent distinguishing between better and worse aesthetic responses. Environmental aesthetics contains numerous resources for objectivity that hold promise for justifying a significant role for judgments of natural beauty in environmental protection. A knowledge-based environmental aesthetic can be useful to aesthetic protectionism, but it is not the only useful environmental aesthetic, and it does not guarantee beneficial environmental results.⁴⁷

His position is one that falls between subjective and objective extremes, although he believes aesthetics needs some type of objectivity to be useful for environmental protection. Hettinger is inclined to regard Carlson, Carroll, and Brady's models as useful in this regard, acknowledging a certain subjectivity in a response since there is not only one correct way to appreciate nature (scientific or otherwise).

Regarding the extension to ethics, Hettinger does believe relevant knowledge, say of environmental degradation, should inform our aesthetic response. If we recall the example of Berkeley Pit, it is scientific knowledge and common sense that informs us of the pollution. However, this aesthetic response can be taken much further with both an emotional and imaginative component. For instance, if we imagine the 342 carcasses from the flock of snow geese that landed in the Pit while migrating in 1995, we are likely to have an aesthetic experience that is both relevant and appropriate in the face of such degradation. There is an emotional component to this particular imaginative process as well, which works to enhance our aesthetic experience of the Pit. It is important to note,

however, that the imaginative and emotional component of the aesthetic response doesn't necessarily guide us in our environmental decision making. Sometimes our aesthetic response will line up with the correct ethical or environmental decision, and sometimes it won't. Neither science, emotion, or imagination can guarantee that it will, and there are many cases where ecological health and beauty aren't going to line up. Nonetheless, scientific knowledge, emotion, and imagination can all function in a way that creates a more complete aesthetic response. This aesthetic response can be useful in the extension to ethics not in the direct guidance it offers to environmental decision making, but in the value it bestows upon a given landscape or environment. Hettinger's pluralism appears to be the surest way of providing a more comprehensive aesthetic response while remaining within the bounds of seriousness, appropriateness, and objectivity. Furthermore, it shows why an environmental aesthetic based on categories derived from scientific knowledge is not the only useful aesthetic for environmental protectionism.

Conclusion:

There is both a descriptive and normative sense in which the scientific cognitive model is not as comprehensive as some would lead us to believe. In being limited to categories it fails to grasp the entirety of the aesthetic experience. It holds no exclusive rights to engendering a certain depth and seriousness in the experience, and its claim to objectivity is neither certain nor unique. In the descriptive sense the model is inadequate in that it fails to capture the full aesthetic experience. There is also a normative inadequacy in this regard, given that the aesthetic experience should be complete and not neglect certain aspects that may still be considered appropriate. The general aesthetic Carlson's model strives for, one that treats an object as it actually is, or in the case of nature, appreciates nature as nature, is also questionable. On the one hand, it is unclear as to whether or not this is at all possible, while on the other hand it seems that if such a notion is achievable by science, it is surely achievable by other means. There are some inherent flaws of the scientific cognitive model itself, and the neutrality of scientific knowledge should have us question why the model should serve as the only viable foundation for an extension to ethics. I have argued that it should not be, but rather should be incorporated into the model of constrained pluralism that Hettinger envisions.

In addition to scientific knowledge, emotion and imagination can inform a significant part of the aesthetic experience. Carroll and Brady's models should not be thought to replace Carlson's, but rather exist along-side it. In some cases, value can be ascribed to a particular landscape through an emotional or imaginative response that normally would have been absent by strictly relying on scientific knowledge. Scientific

knowledge may render us indifferent to a particular landscape, while an emotional response to it can enable an ascription of value that may have otherwise been absent. This value can, of course, go on to inform our environmental decision making, providing an additional rationale for protection or restoration. We should have no reason for thinking this rationale less meaningful or arbitrary, given that it not only offers a certain depth in the experience, but that this depth is open to objective cognitive appraisal.

There seems to be just as little guidance offered with emotional and imaginative responses in the extension to environmental decision making, and so the value of the beauty produced by these other aesthetic approaches still needs to be compared to other values, such as ecological health. The value of beauty can function as a motivating force for environmentalism, but when it comes to actual environmental decisions, its role is secondary. I have already suggested why Eaton's strategy of equating health and beauty doesn't work, and because beauty can and should be thought of as a separate value, the means with which it is acquired seem to matter less than its actual realization. This is not to suggest that any aesthetic response will do, as some are more informed and serious than others. I wish only to suggest that the scientific cognitive model, with its own problems and limitations, should be accompanied by other appropriate models in order to achieve a more complete aesthetic. The more comprehensive aesthetic found in Hettinger's pluralism will not only enable aesthetics to do more work for ethics, but will give us a deeper and more complete aesthetic experience in our own appreciation of nature.

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