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SOME QUESTIONS FOR ECOLOGICAL AESTHETICS

A B S T R A C T

Ecology has become a popular conceptual model in numerous fields of inquiry and it seems especially appropriate for environmental philosophy. Apart from its literal employment in biology, ecology has served as a useful metaphor that captures the interdependence of factors in a field of research. At the same time as ecology is suggestive, it cannot be followed literally or blindly. This paper considers the appropriateness of the uses to which ecology has been put in some recent discussions of architectural and environmental aesthetics, and develops a critique of the differing ecological aesthetics of Jusuck Koh and Xiangzhan Cheng.

I. Introduction

The passion for knowledge and control of nature has been a persistent force throughout the course of world history. It led the Greeks to create elaborate mythologies describing divine explanation and influence, as well as to form the earliest speculative natural philosophies. It led to the creation of the great national folk epics from cultures in Asia, Africa, the Americas, and Europe,¹ fictitious historical narratives that provide a basis for ethnic identity and a justification for ethnic claims. Various rites developed that offered ways of attempting to influence natural events and processes. All these were followed, of course, by the emergence of early modern science and its more recent spectacular theoretical and technological developments that have provided the possibility of greater understanding and more effective control of natural forces and events.

Yet science is replete with concepts and constructions intended to help us grasp the invisible forces and powers at work in nature. Its modes of explanation are imaginative as well as rational. They lead us away from the directness and immediacy of perceptual experience and into the safety and solitude of abstractions and conceptual constructions. The history of modern science documents a remarkable cultural achievement that has transformed both human life and the planet.

In all this, the experience we call aesthetic has not fared well, though it has been recognized and valued, despite official suspicion and discouragement, from Plato to the present. 'Aesthetic' is the term generally used to denote the normative perceptual experience associated with the appreciation of art and of beauty in nature. Aesthetics is the study of such experience, a multi-disciplinary study that may be philosophical, psychological, sociological, or historical in its orientation. While there is general agreement on the meaning of 'aesthetic,' the accounts that guide its application to objects and experiences are heavily theoretical, influenced in the West by an almost two thousand year-old history of cultural thought and theory. So much is encompassed by the term 'aesthetics' that some reference works do not include an entry under that term because of the lack of general agreement on conceptual, theoretical, semantic, and

¹ *Wikipedia* lists twenty-five in Europe alone. [https://en.wikipedia.org/wiki/List_of_world_folk-epics, accessed February 11, 2016.]

empirical grounds.² I shall deal here mostly with the philosophical understanding of the aesthetic.

II. Aesthetic appreciation

Since early in the course of Western thought philosophers have recognized the power of people's aesthetic engagement with nature and the arts. The classical Greeks early noted that the experience we call "aesthetic" transcends the rational order. Plato acknowledged this reluctantly; his great suspicion of the arts came from a profound disapproval of the potent influence of this transcendent experience.³ Aristotle was less condemnatory and developed his theory of catharsis to account for the powerful effect of tragic drama on its audience.⁴ Throughout most of the subsequent history of the arts, suspicion and censorship predominated until modern times, although both Church and State readily turned to the arts to provide experiential support for their own purposes. Since the Renaissance, however, the arts have proliferated in variety and popularity, testifying to the fascination they hold and to their distinctive force. And while writers during the Classical period expressed admiration for nature, it wasn't until the seventeenth century that the natural environment was recognized by artists and writers as deserving both aesthetic appreciation and scientific understanding.⁵ Interest in the aesthetic value of the arts and of nature continued to grow over succeeding centuries. Why so much interest? Why so much concern for their influence?

While the arts have long been admired for their aesthetic attraction, the aesthetic appreciation of nature has developed more slowly. Natural beauty shares with the arts the appeal of a distinctive kind of pleasure. While aesthetic experiences have long been recognized, it was not until the eighteenth century that aesthetics began to be incorporated into systematic philosophical thought, acknowledging it as an identifiable and important area of philosophic study. The landmark event was the publication of Alexander Baumgarten's *Aesthetica* in 1750, and its definition of aesthetics cast the die for the work that followed.

² A notable example is the *Encyclopedia of Aesthetics* (New York: Oxford, 2nd ed. 2015).

³ See especially the *Ion*, but also the *Republic*. CHK *Phaedrus*.

⁴ *The Poetics*.

⁵ Marjorie Hope Nicolson, *Mountain Gloom and Mountain Glory* (New York: Norton, 1963, [c1957]).

Turning to the Greek term, *aisthēsis*, which literally means perception by the senses, Baumgarten defined aesthetics as "the science of sensory knowledge directed toward beauty," and art as "the perfection of sensory awareness."⁶ Kant's turn to aesthetics in the late eighteenth century for the completion of his philosophical system was the founding act of modern Western aesthetics and remains the dominant influence today.⁷ The crucial insight in this tradition is that aesthetic appreciation rests on sensory perception.

Yet Plato's suspicion of the aesthetic persists today philosophically as well as politically, and the history of aesthetics is replete with attempts to control the arts by political constraints and to enclose the aesthetic within an acceptable cognitive system. Sometimes this was a theological order that justified constraints on the aesthetic so that it would not exceed the boundaries of theological doctrine. Sometimes it was the social order that imposed conventions of moral propriety on the arts and their experiences. Sometimes the larger socio-cultural forces took form in a philosophical order that imposed limits on what was acceptable. Yet the aesthetic has continually broken out of such constraints, dismaying theologians, moralists, and philosophers, too.

It is clear that the dominant intellectual order of the modern world is scientific and, from the mid-twentieth century on, science became the model for much of Western philosophy, including aesthetics. Attempts to enclose aesthetic experience within scientific boundaries have taken different forms. Some use science as a cognitive model and emulate scientific method through careful definition and analysis of concepts and of language, itself. Various scientific disciplines have been taken as models to guide the investigation of aesthetic phenomena. Psychology is a notable example, ranging from experimental investigation in the second half of the nineteenth century (Fechner, Wundt, Helmholtz) and continuing in empirical studies of the arts, to the powerful influence of Freudian psychological theory in explaining creativity and aesthetic experience,⁸ and most recently, the popularity of neuroscience has led to its

⁶ While our perceptual experience is never pure sensation since it is shaped into complexity by previous experience, education, and cultural conventions, aesthetic appreciation nonetheless centers around perceptual experience.

⁷ Immanuel Kant, *Critique of Judgment* (1790).

⁸ An important mid-twentieth century study of the contribution of science to aesthetics was Thomas Munro's *Toward Science in Aesthetics* (New York: Liberal Arts Press, 1956), which ranges over psychology, sociology, and art history within a naturalistic philosophical framework.

application to aesthetic phenomena in and the development of the sub-discipline of neuroaesthetics.

A powerful influence on aesthetics in the past half-century and more has been the use of particular scientific theories as a key to understanding aesthetic phenomena. Marxism, with its mixture of science, history, economic theory, and philosophy is a continuing example. In recent years evolutionary theory has been prominent in accounting for artistic and aesthetic activity.⁹ Other writers make the general claim that scientific knowledge is necessary for the full appreciation of nature.¹⁰ Still others have taken the scientific theory of ecology as a model for the aesthetic appreciation of nature.¹¹ While there are suggestive insights in many of these efforts, all represent the effort that began with Plato to respond to the distinctive experience of aesthetic appreciation by making it subordinate to an intellectualist standard or model. While the recent turn to scientific explanation may be motivated by different concerns from Plato's, it represents the same effort to somehow subsume the perceptual experience of the aesthetic under the aegis of a cognitive model.

Scientific influence can assume very different forms. Such efforts are misguided when they turn away from the primacy of the phenomena of aesthetic experience by subsuming them under a scientific model. The scientific study of aesthetic phenomena, whether perception, experience more generally, or behavior patterns of individuals and groups, is a legitimate direction for research. It is essential, however, to avoid the misapprehension that such inquiry will explain these phenomena by considering them through the psychology of perception, biological processes, generalizable patterns of behavior, and the like. Another questionable use of science is in applying a credible theory such as evolution, causal determinism, relativity physics, or ecology to define, explain, or account for aesthetic phenomena or experience. The danger that lies throughout these efforts is in attempting to constrain or explain the distinctive power of the aesthetic by the order or model of some form of scientific cognition.

⁹ Some notable examples include Denis Dutton, *The Art Instinct: Beauty, Pleasure, and Human Evolution* (Bloomsbury Press, 2010); Stephen Davies, *The Artful Species: Aesthetics, Art, and Evolution* (Oxford University Press, 2015); and Katya Mandoki, *The Indispensable Excess of the Aesthetic: Evolution of Sensibility in Nature* (Lexington Books, 2015).

¹⁰ Allen Carlson is especially notable for his insistence, but Holmes Ralston III and Glenn Parsons should also be mentioned.

¹¹ Jusuck Koh, Zeng Fanren, and Xiangzhan Cheng are especially prominent in this effort.

The proposal in this essay to qualify the use of science in aesthetics by challenging its hegemony as a universal explanatory model is in response to certain influential efforts to use the dominant prestige of science to account for aesthetic appreciation. It applies to Carlson's imposition of scientific cognitivism on the aesthetic appreciation of nature. It qualifies applying evolutionary and ecological theories to the aesthetics of nature, resulting in aesthetics becoming a sub-field of evolutionary or ecological theory. This is not a question of the relevance or usefulness of science in aesthetics but a question of hegemony: Can the aesthetics of nature, for example, become a sub-field of evolutionary or ecological theory? The scope of inquiry that this question requires is equally broad, far more than can be pursued in a single paper. Let me, then, select one recent instance of the application of a scientific discipline to aesthetics: the use of ecology in accounting for aesthetic value. This will also allow us to consider the more general and critical question of the relation of scientific cognitivism to aesthetic appreciation.

III. Ecology and aesthetics

The tendency to turn to the biological sciences for a model of aesthetic practice is not surprising. Since evolutionary theory loosened the underpinnings of the medieval theocentric and anthropocentric world view in the mid-nineteenth century, the sciences have forced us to reshape our intellectual landscape. It is a process that continues, not without its benefits but not without some inherent problems. I should like to discuss here one such influence: ecological theory.

Ecology offers a holistic principle of explanation founded on a biological model by considering the interactions among organisms and their environment as interdependent systems. An ecosystem refers to a community of organisms and environment functioning interdependently as a complex system. Since its origin in biological science in the mid-nineteenth century, ecology has been a rich and productive biological concept applied to an endless range of scientific and humanistic disciplines: psychology, politics, philosophy, literature, and now aesthetics. Its application in the natural sciences has led to a wide range of scientific studies, not only in biology but in natural resource management, agriculture, and the like, where it lends itself particularly well to environmental sciences. What needs to be considered, however, is how well it applies to the social and human sciences, such as economics and psychology. In some of its uses, ecology has left the study of environmental systems far behind in becoming a generalized principle of explanation. Its application to the

aesthetics of nature is one of these, and the question needs to be asked of how suitable ecology is in these non-biological contexts? It is a question particularly appropriate for a perceptually grounded field of inquiry.

One of the seminal contributions in the recent turn to ecology in aesthetics was made by Jusuck Koh, who developed the idea of an ecological aesthetics in the early 1980s. Koh made a wide-ranging and inclusive case for a holistic conception of environmental design. In a paper entitled, "Ecological Aesthetics; A Holistic Evolutionary Paradigm for an Environmental Aesthetics,"¹² Koh articulated three principles of ecological design that he has continued to advocate. The first is inclusive unity as a principle of the creative process. This integrates form with its purpose and context and is, he argues, a necessary condition of the creative process in nature and in humans, and reveals an interrelationship between the creative process and aesthetic experience. Moreover, ecological aesthetics goes beyond the subjectivism of traditional Western aesthetics to rest on the human desire to be in unity with landscape. He associates this with an interactive relationship of persons and contexts, a unity of people and place, similar to Berleant's idea of an aesthetic field and Barker's idea of behavioral setting.¹³ Ecological design, for Koh, centers on designing human-environment interaction in which architecture is understood as environment and the role of ecological designers as concerned not so much with form and structure of objects or environments as on designing human-environment interactions.

A second principle of the creative process is the inclusive unity of form as a system with its purpose and context, a unity of environment and place, as well as with the users as participants. Inclusive unity, Koh argues, denies distance and separation between subject and

¹² Jusuck Koh, "Ecological Design: A Post-Modern Design Paradigm of Holistic Philosophy and Evolutionary Ethic", *Landscape Journal*, (Fall, 1982, v.1, n.1, 76-84), Madison: University of Wisconsin Press. Specific references are to this paper. Jusuck Koh, "An Ecological Aesthetic," *Landscape Journal* (1987) pp. 177-191; "Ecological Aesthetics", *Landscape Journal*, (Fall, 1988, 77-191) (first written in 1985); "An Ecological Theory of Form, Evolutionary Principles of Design," Proceedings of the 71st Annual Meeting of the Association of Collegial Schools of Architecture, 1983; "Seeking an Integrative Aesthetics," *Gimme Shelter: Global Discourses in Aesthetics*, 2009. International Association of Aesthetics, *International Yearbook of Aesthetics*, Vol.15 (2011).

¹³ Arnold Berleant, *The Aesthetic Field: A Phenomenology of Aesthetic Experience* (Springfield, IL: Charles Thomas, 1970); Roger Barker, *Ecological psychology: Concepts and Methods of Studying the Environment of Human Behavior* (Stanford: Stanford University Press, 1968); J.J. Gibson, *The Ecological Approach to Visual Perception* (Boston: Houghton-Mifflin, 1979).

object, man and nature. And a third principle is dynamic balance, a qualitative equilibrium that is concerned with ordering creative and developmental processes in and between organic and inorganic forms. Koh associates this with what he calls complementarity, a principle that overcomes the dualities that pervade our thinking about nature and the world. He stresses the indivisibility between subject and object, time and space, solid and void, as well as conceptual divisions of form and content, matter and form, romanticism and classicism, feeling and thought, conscious and unconscious. Complementarity is also an aesthetic principle, joining formal order with richness of meaning, inside with outside, eros with beauty.

Koh sees these three principles: inclusive unity, dynamic balance, and complementarity, as helpful in understanding both Western and Oriental art, fine and practical art, architecture and landscape design. Ecological aesthetics, he claims, is an inclusive paradigm in that it deals with the total perceptual experience, not just the visual, "and sees human and environment as a system. It is evolutionary because it focuses on processes and change as well as formal order, and "regards both the built environment and human perception of it as a creative, evolutionary, adaptive product and process."¹⁴

The idea of an ecological aesthetics as been taken up by a number of writers since Koh's work in the 1980s. Space and time do not permit me to review this literature, which includes contributions by Allen Carlson, Arnold Berleant, and Fanren Zeng. Let me turn, for contrast, to the recent development of this idea by Xiangzhan Cheng.¹⁵ After a comprehensive review of the development of environmental aesthetics and of ecological aesthetics, Cheng recognizes the distinctive approach of each but insists that the idea of ecological aesthetics be given a strict meaning based on ecological ethics, "treating the natural environment as a dynamic organic ecosystem and holding a respectful attitude towards the natural environment."¹⁶

¹⁴ "Ecological Aesthetics," Conclusion.

¹⁵ Cheng Xiangzhan, "On the Four Key Points of Ecological Appreciation," in X. Cheng, A. Berleant, P. Gobster, X. Wang, *Ecological Aesthetics and Ecological Assessment and Planning* (Henan People's Press, 2013).

¹⁶ Cheng Xiangzhan, "Environmental Aesthetics and Ecological Aesthetics: Connections and Differences," Ch. 1 in Cheng et al, p. 29.

In his essay, "On the Four Key Points of Ecological Appreciation,"¹⁷ Cheng emancipates aesthetics from its narrow focus on beauty in order to expand the notion of appreciation to include ecology, an idea he calls "ecological appreciation." Such appreciation joins an ethical dimension to the aesthetic and makes ecological awareness central. It uses ecological knowledge to stimulate imagination and feeling so as to go beyond anthropocentric values and preferences.

In a careful analysis, Cheng ascribes four points to ecological aesthetics. The first is that ecological aesthetics abandons the contrast or opposition between humans and the world, replacing it with aesthetic engagement to encourage their unity. In this Cheng is in full harmony with Koh. "Only through aesthetics of engagement that transcends the subject-object opposition can an intimate relationship between human and the world be established."¹⁸ Cheng's second point predicates ecological aesthetic appreciation on ecological ethics. He claims that ecological consciousness of ethical values is inherent in ecological aesthetic appreciation. This ecohumanism, recognizing the interconnectedness of humans, human institutions, and the non-human environment, is in direct contrast to the Western tradition in aesthetics that removes ethical values from the scope of aesthetic appreciation.

The third keystone of ecological aesthetics appreciation that Cheng identifies is the necessity of ecological knowledge for full ecological aesthetic appreciation. This challenges a fundamental issue in the tradition of Western aesthetics, its essential non-cognitivism, and it requires fuller consideration. It is well known that Kant, who claimed that judgments of taste have universal validity not on cognitive grounds but only subjectively,¹⁹ and Western aesthetics has followed doggedly in his footsteps. Ecological knowledge is fundamentally a scientific discipline claiming general validity on the basis of objective, empirical evidence. The study of natural processes is, to be sure, central to ecological science; the question is whether and how this is relevant for aesthetic appreciation.

¹⁷ "On the Four Keystones of Ecological Aesthetic Appreciation," Ch. 3 in Cheng et al, pp. 85-104.

¹⁸ p. 89.

¹⁹ Immanuel Kant, *Critique of Judgment*, § 8.

It is essential to confront the issue here squarely and directly. Cheng cites Leopold in a telling reference.²⁰ Of critical significance here is that Leopold emphasized the importance of the perception of natural processes. That is, whatever knowledge we have of natural processes is aesthetically relevant if it affects our perception and not as cognition in itself. Cheng's discussion falters here, for he refers extensively to Callicott's interpretation of Leopold's land aesthetic in which Callicott goes beyond Leopold's restriction of knowledge to its perceptual influence: As Callicott writes, "The experience of a marsh or bog is 'aesthetically satisfying' less for what is literally sensed than for ' what is known or schematically imagined of its ecology.' " ²¹ Cheng seems to agree to include non-perceptual ecological knowledge in ecological aesthetic appreciation. More on this in a moment.

The fourth and final keystone Cheng identifies in ecological aesthetic appreciation is the principles of biodiversity and ecosystem health. This brings to a point the issue of the relevance of ecological knowledge in aesthetic appreciation. That these principles are at the heart of ecological appreciation is clear and there are dramatic examples of the problems for ecosystem health caused by invasive species, one of which Cheng cites (i.e. eichhornia or water hyacinth). Here Cheng's moral concerns become paramount, for he insists that "love for the beautiful has to be founded on the respect for all things equally," which means that to appreciate the beautiful requires ecological awareness.²² It is not difficult to let one's knowledge of widespread ecological abuse and injustice become dominant, and we can sympathize with Cheng's intent to couple the ethical with the aesthetic, the better to support his moral perception. The question is whether and to what extent such an association is aesthetically relevant.

IV. Critical questions

It is instructive to compare these two outstanding efforts at establishing an ecological aesthetics, that of Jusuck Koh with that of Xiangzhan Cheng. In joining ecology with aesthetics, Koh emphasizes ecology's holistic, systemic character. The aesthetic character of environment

²⁰ Aldo Leopold, *A Sand County Almanac, and Sketches Here and There* (Oxford, UK: Oxford University Press, 1949).

²¹ *Ibid.*, p. 99. The reference is to B. Callicott, *Companion to A Sand County Almanac: Interpretive and Critical Essays* (Wisconsin: The University of Wisconsin Press, 1987).

²² "On the Four keystones of Ecological Aesthetic Appreciation," p. 102.

displays a unity of form and purpose, of creativity and aesthetic experience, but it goes beyond subjectivity in recognizing the human need to be in unity with landscape, a unity of people and place.²³ Indeed, such inclusive unity "denies distance and duality between the subject and the object," between man and nature, transcending dualism in recognizing the environmental engagement that is inherent in the dynamic balance of an ecosystem. Koh takes this as an aesthetic principle.²⁴ And by including the idea of complementarity as an aesthetic principle, Koh recognizes that aesthetic value can be achieved when meaning is integrated in aesthetic experience: "When the beautiful and the meaningful and the form and content are integrated, the aesthetic experiences are likely to be more intense, perhaps because human perception and cognition mutually complement [one another] and are indivisible...." ²⁵

Cheng's use of ecology is quite different. Going beyond Koh's unity and complementarity, Cheng asserts the necessity for ecological knowledge as the basis for aesthetic appreciation.²⁶ His argument is rich and complex, for it introduces the integral role of morality in ecological aesthetic appreciation.²⁷ The proper reference for such moral awareness is not humans alone but the entire biosphere, and this distinguishes it from traditional ethics, which is human-centered. He finds this broader scope not only in Leopold's thinking but in the long-standing Chinese tradition of recognizing the essential harmony between humans and nature, which is really an ecologically-based humanism.

Cheng goes further to develop at length what he calls "ecological aesthetic appreciation," arguing that ecological knowledge is essential to fully appreciate the natural environment.²⁸ He acknowledges his divergence from the Western aesthetic tradition that has been heavily influenced by Kant, who claimed that aesthetic appreciation is non-cognitive. Cheng derives his argument from Leopold's land aesthetic, observing that Leopold appealed to ecological

²³ "Ecological Design: A Post-Modern Design Paradigm of Holistic Philosophy and Evolutionary Ethic", II, 1, 2.

²⁴ *Ibid.*, III, 2.

²⁵ *Loc. cit.*

²⁶ *Ibid.*, p. 96.

²⁷ *Ibid.*, p. 91.

²⁸ *Ibid.*, p. 98.

knowledge to enhance "the perceptive faculty." However, Cheng diverges from Leopold's association of cognition with perception to follow the argument that Carlson uses to justify what he calls 'aesthetic cognitivism:' just as background knowledge of art history is necessary for art appreciation, so knowledge of nature is necessary for nature appreciation.

While this analogy may seem plausible at first, it is actually fallacious. Knowledge of art history can, indeed, enhance our appreciation of art, but it does so not by adding cognitive content to our perceptual experience but rather by sensitizing us to perceptual features and details that we may have overlooked or not understood. Thus, understanding the theory of cubism enables us to visually apprehend a cubist painting as presenting multiple views of objects on the same picture plane, thus enhancing our perceptual experience. Similarly, knowing the theory of light and color that guided the Impressionists, and the aesthetic theories of the expressionists, abstract expressionists, color field painters and other movements enables our visual apprehension of what might seem chaotic or confusing to the uneducated eye. The point here is that knowledge of painterly techniques and artistic styles can enhance our perceptual sensitivity and thus our aesthetic appreciation. Such information may be satisfying in itself but, if taken alone, it is aesthetically irrelevant.

There are instances, to be sure, in which ecological or evolutionary knowledge can help free our perception from irrelevant considerations. Leopold calls this "the mental eye." Yet at the same time he retains the tie with aesthetic experience by joining such knowledge with perception. Unfortunately, Cheng turns to Callicott's interpretation of Leopold's land aesthetic to support his ecological cognitivism. This is regrettable because Callicott is not sensitive to Leopold's careful practice of associating such knowledge with perception, and it is only this tie that validates such an ecological aesthetic. As Cheng relates it, Callicott holds that "the experience of a marsh or bog is 'aesthetically satisfying' less for what is literally sensed than for what is known...of its ecology."²⁹ This leads Cheng to give surpassing importance to biodiversity and ecosystem health, important considerations for ecosystem appraisal but perceptually irrelevant. And it brings Cheng to conclude that "the two guiding principles of ecological value for ecological aesthetic appreciation are biodiversity and ecosystem health."

²⁹ *Ibid.*, p. 99.

Unfortunately, Cheng is guided here by ecological and ethical values rather than by aesthetic ones. Yet at the same time he cites Leopold approvingly, Leopold who required sensible perception in environmental aesthetic appreciation. There may well be an equivocation here in determining which is essential and has primacy: ecological knowledge, ethical value or aesthetic experience. Indeed, it seems that by emphasizing biodiversity and ecosystem health as principles of ecological value, Cheng has entirely overlooked the aesthetic. Indeed, Paul H. Gobster, in his contribution to the same collaborative volume as Cheng's essay, considered various conditions under which conflicts between ecological and aesthetic values may occur. He calls this an "aesthetic-ecological disjuncture" and concludes that "Aesthetic quality and ecological quality are conceptually separate dimensions of landscape quality...and it might make more sense to deal with them in separate assessments."³⁰ I deliberately overlook here cases, such as the effluvium of a festering bog, in which the health of an ecosystem entirely contradicts experiences of beauty and aesthetic delight.

V. Conclusion

These issues, in short, suggest the need to recognize values in environment that are important though different: ecological values, ethical values, and aesthetic values. Ideally, we might wish these values to be mutually complementary, for all are important factors in the human world. At the same time, candor requires that we acknowledge their differences, and it does nothing to resolve those differences to simply assert their compatibility in an ecological aesthetics or an ecological ethics. There is no *a priori* necessity that these values harmonize with each other. Indeed, the very fact of their frequent conflict raises the possibility that they may at times be incompatible.

Appreciation is a valuing experience and, as we have seen, it can be based on different things, such as identifying important ethical considerations, recognizing and valuing the understanding that ecological and other scientific knowledge can provide, or experiencing the aesthetic qualities of a situation. When Cheng speaks of ecological appreciation, he is referring to a cognitive value, not an aesthetic or an ethical one. It is therefore misleading to speak of "ecological aesthetic appreciation" as if these two forms of appreciation are joined or even

³⁰ X. Cheng, A. Berleant, P. Gobster, X. Wang, *Ecological Aesthetics and Ecological Assessment and Planning* (Henan People's Press, 2013), p. 99; Ch. 4, esp. p. 145.

necessarily compatible. There are instances, not that common, in which both cognitive, ethical, and aesthetic values, though different, can be combined in enlightened land use planning, zoning, or social and environmental policy. There are cases, more common, in which they are in conflict.³¹ This points up the confusion in the very idea of a cognitive aesthetics, which Cheng seems to join with Carlson in advocating, for the concept of "cognitive aesthetics" is actually an oxymoron. That is because aesthetic values are grounded in perception and cognitive ones are conceptual, both entirely different, as Kant reminded us. One must hope that by developing an awareness of these values and of their differences, we will encourage the greater collective normative realization.

Perhaps ecology may best serve as a metaphor for the holistic, contextual character of environmental aesthetic experience. Such a sign of the unity of humans and environment in the experience of aesthetic engagement is close to what Koh has consistently urged and, in fact, is in harmony with traditional Chinese thinking. Science can contribute much to our understanding and appreciation of environmental experience and values. To the extent that scientific knowledge sensitizes us perceptually to our environmental transactions, it is aesthetically relevant and can enhance appreciation. To the degree to which ecological and other scientific information enlarges our intellectual appreciation and admiration of nature by expanding our perceptual awareness and acuity, it offers cognitive value that has aesthetic consequences. Thus, for example, relativity physics has transformed our understanding and our perception of the physical universe. Using this knowledge in recognizing the relativity and legitimacy of our spatial experience has enormous aesthetic significance for it enables us to apprehend environment always in relation to the participating perceiver. Similarly, when our knowledge of evolution sensitizes us to the perceptual details that accompany adaptive changes of fauna and flora to changing environmental conditions of light, wind, climate, and ambient temperature, this

³¹ Normative contradictions are, unfortunately, far more common than agreement. These include a festering, organically productive bog, whose rich effluents create a repugnant stench, the proposal to fill in a coastal wetland that provides a buffer for storm surges and a haven for migrating waterfowl in order to provide a site for vacation houses with a scenic vista, a plush, silk oriental rug whose thousands of knots were tied by children's fingers, and the most obvious instance of all, the Pyramids, an architectural and engineering marvel built by slave labor.

may be aesthetically relevant and significant. Moreover, there is important scientific research on perception that has direct implications for aesthetic theory.³²

This critique of the important theories developed by Koh and Cheng can help us identify the conceptual errors and methodological misapplications that occur in some recent efforts to develop an ecological aesthetics. None of these values--ethical, scientific, or aesthetic--is necessarily dominant in any particular environmental complex. Most often they constitute a normative complex in which their relative importance is determined by the unique character of the situation and by the judgment of those making the assessment. It is more justifiable to argue for a respectful acknowledgement of the important contributions of each, of ethical scientific/ecological, and aesthetic dimensions in environmental experience and understanding. Environmental appreciation must be understood, I believe, by a philosophically-guided study of appreciative, that is, normative experience on its own terms, whether scientific or aesthetic. I call this "philosophically-guided" because philosophical assumptions play a central role here, and uncovering such assumptions is both clarifying and liberating.

I hope that this critique has outlined a broad field of inquiry that needs to be pursued further both theoretically and in particular environmental complexes. Enthusiasm for the rich possibilities of ecological awareness should be balanced by recognizing its differences with ethical and aesthetic interests and values. A proper application of scientific knowledge in environmental experience must be accompanied by recognizing the ethical values inherent in particular environmental situations along with their possibilities for aesthetic appreciation, together with a careful consideration of situations in which they are joined. My hope is that this discussion has helped by clarifying how these values may be recognized and how, while different, they may be compatible.

³² See references in endnote 13.