

# Contemporary Aesthetics (Journal Archive)

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Volume 2 *Volume 2 (2004)*

Article 6

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2004

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### Recommended Citation

Saito, Yuriko (2004) "Machines in the Ocean: The Aesthetics of Wind Farms," *Contemporary Aesthetics (Journal Archive)*: Vol. 2 , Article 6.

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## Machines in the Ocean: The Aesthetics of Wind Farms

*Yuriko Saito*

### Abstract

This is an exploration of the aesthetic opposition lodged against wind power facilities. Taking the recent controversy regarding the proposal of a wind farm off the coast of Cape Cod as an example, I analyze the opponents' claim that such a construction "ruins" or "spoils" the otherwise pristine landscape. After suggesting some strategies of making the structure more aesthetically positive purely on the sensuous level, I propose that this specific issue must be discussed in the context of larger issues: civic environmentalism and the aesthetics of sustainability.

### Key Words

environmental aesthetics, wind power, landscape appreciation, eyesore, technology, civic environmentalism, topophilia

### 1. Introduction

There is a storm brewing off the coast of Cape Cod -- a storm of controversy, that is. It regards the wind power company Cape Wind's proposal to erect 130 wind turbines, each one 260 feet, in the Nantucket Sound. It will be the first offshore wind farm in the United States and the biggest in the world. It will also become the world's eleventh largest skyline.<sup>[1]</sup> The site was chosen as the best location in New England because of its constant and strong wind, sufficient open space, and relative ease of transmitting the generated electricity, as well as for its easier accessibility, in comparison with other possible locations, such as on a mountainside in northern New England. Just as with inland wind farm projects, this proposal generated vehement objections from Cape Cod residents, many of who pride themselves as committed environmentalists, including Robert Kennedy, Jr.

Very few people dispute the environmental benefits of wind energy, but, while becoming more common particularly in places like California and Texas and definitely in Europe, wind power facilities have always been met from the outset with opposition, and one study indicates that the NIMBY phenomenon is greatest regarding wind farms among all utility facilities.<sup>[2]</sup> The initial problems concerning noise pollution, harm to birds, and the danger of unstable structure have since been addressed by better technology. In the case of Cape Wind, the possible negative environmental impact, such as disturbance to area fish as well as to migrating birds, and interference with seafaring route and airplanes' flight paths, seems to have been adequately answered. So what is the source of the opposition? Aesthetics.

One thing that can never be changed, even with better technology, is the turbines' visibility. They cannot be hidden; nor can they be camouflaged like cell phone towers and satellite dishes.<sup>[3]</sup> So they are almost invariably decried as "marring," "spoiling," "ruining," and "intruding on" the otherwise relatively natural landscape, such as desert, open field, mountainside, and in this case ocean, and for creating an "eyesore." Walter Cronkite, a part-time resident of Martha's Vineyard, for example, worries that "it will be most unsightly for what is now open bay. Everyone will see it, anyone who wanders on the water, who has a home that faces the water."<sup>[4]</sup> Furthermore, though environmentally benign, the turbines represent technology, which in general is regarded as incompatible with, or incongruent in, a relatively uncultivated landscape setting. But by necessity, wind farms have to be located on open, unhindered lands. As a result, they are viewed as machines intruding in a garden, to borrow Leo Marx's imagery.<sup>[5]</sup>

### 2. Strategy to transform the aesthetics of wind farms

#### a. imaginative comparison

Generally, it is easy to argue that some human products or artifacts are "eyesores" when they symbolize ecological harm or disrespectful attitude toward the environment. So, our negative aesthetic judgments on littering, belching black smoke from factories, strip-mining, and clear-cutting are generally easy to justify and relatively uncontroversial, despite their possible appeal strictly on the surface

level.[6] Even when the environmental harm is not apparent, obtaining such information cannot but modify our initial attraction, such as in the case of smooth, luscious, velvety, weed-free lawns sustained by a toxic brew mixed with inordinate amount of water. Such an attractive green carpet may not necessarily turn ugly with knowledge, but it may start appearing somewhat sickly and garish; at the very least, it will not remain innocently and benignly beautiful.

A typical argument goes something like this: the aesthetic of the object/phenomenon in question must be based not only upon its pure sensuous or "thin" qualities, to use Allen Carlson's terminology, such as color, shape, texture, and the like, but also upon its "thick" life values, in this case its environmental significance.[7] When we know the negative environmental value of the object or phenomenon, it cannot but negatively affect the object's purely sensuous qualities. In our aesthetic experience of everyday objects and phenomena, we have to incorporate their direct and literal effects on the qualities of our life and the world. In short, our knowledge of the negative environmental impact of the object or phenomenon interferes with and transforms its purely sensuous appearance in a negative manner.

However, the case of the wind farm challenges this view by providing an opposite case: the object in question is, by all accounts, environmentally positive. But this does not seem to transform its aesthetic value accordingly, from negative to positive. What should we make of this challenge then? Does it indicate a kind of asymmetry, in that environmental values are aesthetically relevant only when they are negative but not when they are positive, so that they can uglify but not beautify, so to speak? Or is there still room for modifying and possibly transforming the opponents' aesthetic judgments? If so, what sort of argument has to be developed to educate, convince, and finally convert the naysayers? Or, does this case indicate the limit of the aesthetic discourse, so that the argument in support of the wind farm has to proceed *despite* its negative aesthetic values and exclusively on the basis of its ecological benefit, along the lines of "eat your spinach" mode of persuasion?[8]

I do believe that there is a limitation to the extent to which environmental values can positively affect aesthetic values. For example, particularly with respect to a more body-oriented sensation, smell, I think there is a threshold of what we can tolerate. Even the die-hard environmentalists among us will be hard pressed to tolerate the odor caused by composting. Does the objection to wind farms, which is directed strictly toward its visual aspect, also pose the same limitation?[9]

Vision has traditionally been regarded closest to the intellect, rendering it more receptive to modification by conceptual considerations. So there seems to be a *prima facie* hope for converting the Cape Wind opponents' view. I would like to take up the challenge and explore possible strategies to overcome, or at least challenge, their negative aesthetic reactions.

One strategy might be to urge the opponents to imaginatively compare the wind farm in the sea with something else located at the same site but with *negative* environmental connotations. Let them imagine a series of oilrigs, or a nuclear power plant or a factory with belching toxic emission constructed on an artificial island. [See photos.] I assume that there will be a consensus that those objects will be both environmentally *and* aesthetically unacceptable. Then let them compare their reaction regarding these hypothetical cases to their reaction regarding the wind farm. Even if their aesthetic response is still negative toward the wind farm, at least they will admit that it is not as strong as their reaction to these hypothetical examples. Their negative aesthetic reaction here will then be *mitigated* by their positive response to the wind farm's environmental benefit. So, a case can be made that the aesthetic status of the wind farm is *less bad* than some other cases.

A similar strategy also requires an imaginative thinking of another hypothetical case. We may ask potential opponents to imagine an ultimate consequence of not pursuing this kind of clean energy. Assuming that our reliance on unsustainable forms of energy continues, we will need to build more power plants and transmission lines for harvesting and transporting more oil, natural gas, and uranium, all of which would exacerbate the destruction of natural habitats and landscapes, create pollution, and increase the possibility of environmental

catastrophes, such as oil spills and nuclear accidents.[10] In fact, Cape Cod residents themselves had to contend with an oil spill from a leaking barge in April, 2003.[11] Even if their own water view is unaffected, other parts of their landscape would be negatively affected. So this wind farm will be a small aesthetic price to pay, in comparison with future landscape destruction on a global level.[12]

Of course, these strategies are based upon choosing the lesser of two evils, and are not effective for *transforming* the negative aesthetic value of a wind farm to positive. The opponents could still claim that, although it is not as bad as the aesthetics associated with oilrigs and more power plants, the aesthetics of wind farm are still

negative and their approval of this form of clean energy is not sufficient to overcome the aesthetic drawback.

#### b. historical precedents

At this point we may resort to another strategy by invoking past examples of changed aesthetic response from negative to positive and by arguing that the opponents' negative reactions are not so much against the pure aesthetics involved in this issue but are rather based on a knee-jerk reaction to something new and unfamiliar. It is widely acknowledged among cultural geographers and landscape designers that we tend to be rather conservative about the landscape we live with and generally resist change, particularly if the change is brought about by something associated with technology. However, it is also generally recognized that, given enough time and history, what was once considered as an intruder, spoiling a landscape, will eventually be assimilated into an integral part of the landscape. For example, we now look upon windmills as a familiar, appropriate, and almost romantic ingredient of a farmscape. But there is some evidence that those windmills that we now appreciate with nostalgia were not uniformly accepted when they first started appearing in farms.[13] Even in the Netherlands, where the landscape is inseparable from windmills, the residents' reactions to them have not always been uniformly positive.[14] We can also point to the Parisians' initial uproar against the Eiffel Tower, without which we cannot even picture Paris today. *And* we still vividly remember the vehement objections to the ugly V-shape scar and wound on the earth that became the Vietnam Veterans Memorial. Even the Golden Gate Bridge, when new, was decried as an "eye-sore to those living and a betrayal of future generations." [15] So it is conceivable that what is today considered a state-of-the-art machine can become an object of nostalgia and affection in the future.

Indeed, past examples of wind farms in Europe and United States indicate that such a change is already taking place: there seems to be an increasing acceptance of the appearance of wind turbines in the landscape. If this trend continues, eventually a new aesthetic sensibility embracing the aesthetics of the wind farm may emerge, eliminating the necessity for engaging in an aesthetic debate surrounding this issue. I am and want to be optimistic about this possibility, but I believe that it has to be part of a more general, larger aesthetic movement, which I will take up later. For now, however, we have to admit that this "test of time" argument will not quell the opponents' concern because, while they may agree with the possibility of the change in their aesthetic judgment, nobody can predict whether and how soon it will happen, and in the meantime they will be forced to live with what they consider to be a ruined seascape. Furthermore, history does not lack examples which make us question in retrospect: "What were we/they thinking about?" One writer thus reminds us that "the test of time works both ways." [16] So, is there a strategy that argues for the positive aesthetic value of wind farms now?

#### c. analogy to art

One possibility might be to draw an analogy between this project and some examples from earth art. There are successful cases of unfamiliar and new constructions "intruding on" or "invading" a landscape yet with positive aesthetic results. A number of projects by Christo immediately come to mind, such as *Valley Curtain*, *Running Fence*, *Surrounded Islands*, and *Umbrella Project* ([www.christojeanneclaude.net](http://www.christojeanneclaude.net)). [17] *The Running Fence* is perhaps the most interesting example because of the fierce opposition he received from the farmers

and ranchers whose fields were going to be affected by the project. His persistence eventually convinced them not only to approve, but also to participate in the project, and the end result was a breathtaking view of the rolling hills of California, the contour of which was accentuated by the white curtain. Even the roughneck farmers and ranchers were captivated and mesmerized by what should have been the most familiar and everyday landscape of their lives made both prominent and fresh by the project.[18] This and other works by Christo illustrate that something seemingly foreign and unfamiliar added to a landscape does not necessarily "ruin," "spoil," or "destroy" it; if anything, it *can* enhance its aesthetic values by highlighting, illuminating, or intensifying some of its features.

Another example is Walter de Maria's *Lightning Field* ([www.lightningfield.org](http://www.lightningfield.org) and [www.usc.edu/schools/annenberg/asc/projects/comm544/library/images/797.html](http://www.usc.edu/schools/annenberg/asc/projects/comm544/library/images/797.html)). Though the real focus of this work is the phenomenon of lightning captured by metal poles, which of course occurs only sporadically and unpredictably, we can also appreciate the flatness and wide openness of the site made more prominent by the rows of poles placed with geometric precision.

Granted, there are important differences between these earth works and wind farms. For example, Christo's projects are temporary installations[19] and *Lightning Field* is located in a remote area, not affecting people's everyday landscape. In addition, the design of Christo's projects changes from place to place, reflecting its local characteristics, but the design of wind turbines cannot respond to the sense of place.[20] Further and more importantly, these art constructions do not serve any utilitarian function and are not regarded as "machines." However, they also suggest a possibility that human constructs *can* enhance the aesthetic of a landscape.

In his discussion on the "aesthetic guidelines for a wind power future," one commentator illustrates different ways in which the design and arrangement of wind turbines can detract from or enhance the aesthetics of the landscape. For example, the following will generally take away from the aesthetic value of the existing landscape: visual clutter resulting from inadequate spacing between individual wind towers; unsynchronized directions of the movement of the blades; mixture of two- and three-blade turbines; inconsistent height, color, and design of the turbines; neglect of broken blades; un-reclaimed access paths for construction vehicles; application of colors incongruous with the surrounding; and general neglect of the surrounding space strewn with construction debris, broken parts, etc. On the other hand, it is possible to create an aesthetically pleasing effect by choosing the color, shape, and height of the turbines appropriate and responsive to the particular landscape, making them uniform in their appearance and movement, and spacing and arranging them in proportion to the landscape. Indeed, one writer admires the windmills in Sweden as "graceful objects" because "the slender airfoils seem both delicate and powerful at the same time while their gentle motion imparts a living kinetic nature." [21]

These are indeed useful guidelines and some localities have in fact created ordinances to regulate the appearance of wind farms in their communities.[22] With the Cape Wind project, however, I think there is a particular disadvantage, because it is located in the ocean at some distance from the shore, five miles from Hyannis, to be exact. As such, the wind turbines viewed from the shore will be one-half inch above the horizon. Our visual experience will then lack perspective, distance cues, or a sense of gradual progression enjoyed by successful inland projects. Inland projects, at least theoretically, are always possible to be viewed from varying distance and directions. Furthermore, it is possible to live in proximity with them, as we walk or drive on the road, or literally have them in our backyards. Offshore projects, in comparison, are at a disadvantage because it is much more difficult and impractical to provide different perspectives and distances from which to view the structures. As a result, the residents' experience is confined to a bunch of small spokes sticking out of water in the distance, or a bunch of blinking lights above water at night, neither of which is likely to help enhance and highlight the wide expanse of the ocean. Although I am not a specialist in environmental perception, I believe that, while there must be better or worse design and arrangement of turbines from the aesthetic point of view, it is nonetheless more challenging to make offshore wind farms aesthetically positive than inland wind farms.

#### d. civic environmentalism

Since the design strategy to improve the aesthetic value understood in the "thin," surface sense seems to have limited effectiveness regarding offshore wind farms, let us revisit the "thick" sense of aesthetic value and the life values embodied or expressed by them. The problem with the "thick" sense of aesthetic value is that this is where the ultimate disagreement lies concerning the object's symbolic import. For the proponents, wind farms express values such as "stewardship," "appropriateness," "progress," "safety," and "cleanliness," while for opponents they represent "clutter," "conspicuousness," "monstrosity," or even a "threatening" feeling of militaristic power,<sup>[23]</sup> and they resent the way in which their landscape is "marred," "spoiled," "ruined," "scarred," and "destroyed" by this intrusion. This kind of disagreement is not unique to wind farms; in fact, such clashes of basic values that lead to aesthetic controversies are quite common, ranging from the gentrification of urban areas to the Wal-Martization of dilapidated downtowns, from utility facilities and highway infrastructures to gated communities of gorgeous estates.<sup>[24]</sup> One's aesthetic assessment of these phenomena is largely determined by one's economic, social, political, moral, and cultural orientations, and the values associated with these are as individual-dependent as aesthetic values. Though perhaps not as a way of resolving disagreement and settling disputes, I offer two possible ways in which we as a society can and should proceed.

First, when I think of the notions such as "marring," "spoiling," or "ruining" otherwise pristine and beautiful surroundings, I wonder how much of this negative reaction is based upon an underlying feeling of resentment that the project was concocted by outsiders and "imposed" upon those affected by them. If the residents do not feel they are a part of the process, they do not have ownership of the project; in short, they feel alienated. What if, hypothetically, they took part in designing the structure, placement, and arrangement of the turbines? Of course, this scenario is implausible because the residents would refuse to participate in a project which they are opposed to from the outset. Furthermore, unlike many other community-initiated projects, such as creating a community garden or rehabilitating an abandoned building, a wind farm by necessity has to be constructed by a utility company because of its sheer scale, technological complexity, and connection to the regional or even national, utility grid system.

However, what I am exploring is whether the residents' aesthetic judgment that the ocean view is spoiled, destroyed, ruined, or marred by wind turbines remains the same if the whole project was *their* idea, *their* initiative, and *their* design. If we subscribe to the traditional, art-oriented aesthetic theory, our personal relationship to and stake in an object should be irrelevant to its aesthetic value. For example, the fact that my friend composed a particular piece of music is irrelevant to its musical merit; similarly, the fact that a particular landscape photograph depicts my hometown in Japan has nothing to do with whether or not it is a good photographic work. We certainly do not want art critics and art historians to bring in their very personal associations and investment to bear upon their professional aesthetic judgments of a work of art.

However, I don't think that what is appropriate and expected in the field of art is readily applicable to our aesthetic life outside the realm of art. A cultural geographer, Yi-Fu Tuan, for example, explains with his notion of "topophilia" that our appreciation of a place cannot be dissociated from the personal, as well as cultural and societal, relationships we have with it.<sup>[25]</sup> Particularly when planning and designing a structure which affects and alters a landscape, this affective dimension of our landscape experience should not be ignored, but rather should be addressed, possibly with the hope of turning it into an asset.

Very often our direct involvement in altering a landscape seems to generate our affection and attachment toward the landscape that results, which then leads to positive aesthetic appreciation. A well-known anecdote related by William James describes how "coves" in North Carolina, recently cleared fields left with charred tree stumps and irregularly planted corn, which to him were "unmitigated squalor" and "a mere ugly picture on the retina," were a landscape redolent with pride and dignity to the residents because it symbolized "a very paean of duty, struggle, and success" based on their honest sweat and labor.<sup>[26]</sup> I believe that a similar observation can be made with the way in which urban dwellers take pride and find aesthetic appeal in what otherwise may appear as a crude-looking, amateurish

community garden.

So one effective way of ensuring a positive aesthetic experience of a particular environment is for us to be participants in creating it, which would generate our affection and attachment. Particularly regarding environment, I believe such a personal relationship and affective response is inseparable from its perceived aesthetic value. And this "topophilia" resulting from people's involvement and engagement should be fully attended to and utilized.[\[27\]](#)

My thinking here stems from a newly emerging environmental ethic called civic environmentalism, which recognizes and emphasizes that solutions to various challenges facing the environment need the citizens' commitment to better their environment. That is, no matter how environmentally sound and well-meaning a certain goal, policy, or project may be, if it is perceived as something imposed on citizens from above or outside, such as by a government or an outside environmental organization, its success and cultural sustainability are doubtful.[\[28\]](#) Citizens need to be enfranchised, and this sense of empowerment will positively affect their aesthetic experience of the object and project.[\[29\]](#)

But, as I mentioned earlier, wind farms in general do have disadvantages compared to community projects. We can "engage" with them only visually, but not literally.[\[30\]](#) Offshore facilities have further disadvantages compared to inland facilities because there are very few possibilities for each resident to actively interact with the structures. It is not impossible, however. For example, the residents can be a part of the process of choosing colors, spacing, and arrangement. They can also act as a distant and visual caretaker by reporting damaged or malfunctioning turbines. Or, after the example of Austin, Texas, which made a tourist attraction out of a bat colony, this seascape with wind farm, the first in the United States and the biggest in the world, could be promoted as a new tourist destination.[\[31\]](#)

A potential pitfall of this strategy of community involvement is that it may create the unwelcome mentality that all we care about is our own community or those projects with which we are personally or communally engaged. It may encourage our civic-mindedness on a micro-scale at the expense of its application on a macro-level. In addition, it may encourage, rather than discourage, the NIMBY mentality and environmental racism. I do believe that we have to be wary of this potential danger always lurking in the background. But the following two considerations may help mitigate, if not eliminate, this possible problem.

First, if each of us cared about, and cared for, our respective community environment, the cumulative results would go a long way toward covering many parts of habitable environment. Second, like the saying goes, in order to cultivate a civic and green sensibility with a truly global perspective, we have to "think globally, act locally."

Ultimately, however, this case of wind farms should not be addressed as a unique, isolated issue, but rather be thought of as one example of larger aesthetic, environmental, and social concerns. That is, if we are to respond to various environmental and ecological challenges and problems with sustainable designs, and if the social acceptability and cultural sustainability of green design are partly dependent upon its perceived aesthetic values, then it is our responsibility, both as designers/creators and as users/viewers, to clarify and formulate our aesthetic vision of what our world should be like. Do we want to hang on to the long-held ideal of a picturesque landscape and keep creating velvety-smooth, lush green lawns adorned with exotic plants? Do we also want to maintain a pastoral ideal by hiding machines as much as possible?

Once we become aware of various harms and losses incurred by these aesthetic ideals, it does, and should, become more difficult to maintain them. I would like to think we are in the midst of an aesthetic paradigm shift. What then would the new aesthetic paradigm look like?

### **3. The aesthetics of sustainability**

Some ingredients have already been proposed by those who advocate and promote sustainable design, wind turbines being one example. Robert Thayer, for example, claims that "landscapes that create an illusion of a better world while depriving us

of the actual means of achieving it are not sustainable" and that "the emotional state provoked by the landscape's *surfaces* should be congruent with and not contradictory to the manner in which the *core* properties of the same landscape provide for our functional needs and well-being."<sup>[32]</sup> If a landscape is unsustainable because of the incongruity between the surface value and core value, then, I would add (and Thayer would agree) that such a landscape is not aesthetically appreciable. In the same vein, David Orr, in his recent work on the nature of design, is even more radical in defining what he calls "a higher order of beauty" needed today as something that "causes no ugliness somewhere else or at some later time."<sup>[33]</sup> So, what this kind of aesthetic sensibility requires is that we judge the aesthetic value of an object, like a wind farm in the ocean, in an even larger spatial/temporal context. It is decidedly a movement away from simply attending to the "thin" sensuous qualities of the landscape with this structure. A wind farm will then be experienced as "appropriate" or "congruent" with its surrounding, because not only does it not pollute the air or water nor harm creatures, but because it also is gratefully accepting and deriving maximum benefit out of the site-specific gift nature is providing - wind and open space. And we can witness this nature's gift at work in the movement of the blades.

In promoting this new aesthetic sensibility of sustainability, Thayer insists that we make embodiment of sustainable design fully visible and accessible, contrary to our usual tendency to hide signs of technology. That is, this new aesthetic sensibility should be facilitated and nurtured by our experiencing and living with those mechanisms which are its major players, such as wind turbines, solar panels, constructed wetlands, and natural storm drainage.<sup>[34]</sup> Thayer calls these "conspicuous nonconsumption" and regards them as "essential markers along the road to a more sustainable world."<sup>[35]</sup>

As I discussed earlier, this new aesthetic sensibility does not deny the relevance and importance of "thin" surface considerations - some colors, shapes, sizes, and arrangements of wind turbines and solar panels are aesthetically more pleasing than others. But the aesthetic debate concerning these objects responsible for determining the qualities of the environment, the world, and our life cannot be adequately addressed by simply working out better sensuous appearances.

Is this new aesthetics of sustainability asking us too much in way of conceptual knowledge (because we have to know the environmental impact and implications of the object in question)? Is this paradigm shift feasible? My own tentative answer is no and yes, respectively. No, I don't think it is expecting too much of our conceptual understanding, provided that there will be more societal effort to improve our ecological literacy and associated aesthetic sensibility. Implicit in Aldo Leopold's argument for the necessity of nature study, in particular ecology and natural history, and for promoting what he calls "perception" or land aesthetic sensibility, is a hopeful optimism that the general populace *can* be educated to hear a "marshland elegy," "the song of a river," and "the speech of hills and rivers."<sup>[36]</sup> Plus we engage in a conceptually-based aesthetic appreciation with works of art all the time - by taking courses in music, art history, and literature, and by reading program notes, reviews, and exhibition catalogues. It is just that we have not developed an equivalent formal discipline or discourse guiding our aesthetic appreciation of nature, environment, and designed objects.

And, yes, I believe this paradigm shift is already occurring, evidenced by a number of reports from the United States and Europe regarding wind farms. They invariably state that the initial aesthetic objections not only subsided but also changed into positive responses, embracing and celebrating the altered landscapes. When there are enough cases of such aesthetic endorsement, landscapes with wind farms will become integrated into our aesthetic vocabulary through what Thayer calls "an accrual of positive environmental symbolism"<sup>[37]</sup> and add to the cumulative and collective memories of our cultural landscape. The Cape Wind project can be a part of that process.

## Endnotes

<sup>[1]</sup> Pointed out by Elinor Burkett in "A Mighty Wind," *New York Times Sunday Magazine* (June 15, 2003). Details of this project, accompanied by a map and visual simulation of the wind farm can be found at [www.capewind.org](http://www.capewind.org).



[2] Cited from "Consumer Attitude and Choice in Local Energy Development," by Robert Thayer and Heather Hansen, Department of Environmental Design, University of California - Davis, May 1989, in Paul Gipe, "Aesthetic Guidelines for a Wind Power Future," in *Wind Power in View: Energy Landscape in a Crowded World*, eds. Martin J. Pasqualetti, Paul Gipe, Robert W. Righter (San Diego: Academic Press, 2002), pp. 173-212; ref. on p. 178.

[3] For example, Charles Komanoff characterizes the opposition as "NIMBYs everywhere: "Even Wind Power Can't be Invisible," the title of his article in *The Providence Journal* (June 6, 2003). The visibility problem is also pointed out by Robert W. Righter in "Exoskeletal Outer-Space Creations" (p. 29) and Martin J. Pasqualetti in "Living with Wind Power in a Hostile Landscape" (p. 161), in *Wind Power in View*.

[4] Quoted in Burkett, *op. cit.*

[5] Leo Marx, *The Machine in the Garden: Technology and the Pastoral Ideal in America* (Oxford: Oxford University Press, 2000). In the case of the Cape Wind project, there is an additional social/political dimension which complicates the aesthetic debate. That is, many of the homeowners whose ocean view will be affected by this project are wealthy people who use their beach houses only as summerhouses for vacation. Part of the appeal of the beachfront properties, of course, is the unobstructed ocean view, but, unlike other wind farm projects on the land, their everyday lives are not going to be profoundly affected by these machines in the water. After all, many of them are not even year-long residents of the area and do not live with this oceanscape year-long. I do believe that there are important qualitative differences between the residents' reactions and part-time residents' or outsiders' reactions, that affect the aesthetic debate, but for the purpose of this paper, I will not address this issue.

[6] For example, a series of John Pfahl's photography depicting the smoke coming out of a steel factory smokestack and David Hanson's aerial photographs of coal-mining landscape are eerily beautiful on the surface level.

[7] I am here following the argument formulated by Allen Carlson. The best account of this argument can be found in the chapter on "Environmental Aesthetics and the Dilemma of Aesthetic Education" in his *Aesthetics and the Environment: The Appreciation of Nature, Art and Architecture* (London: Routledge, 2000), as well as in "On Aesthetically Appreciating Human Environments," *Philosophy and Geography*, 4, 1 (2001), pp. 9-24.

[8] In my past writings I have always used this "eat your spinach because it's good for you (don't mind how it tastes)" mode of persuasion in characterizing one way of encouraging us to recognize the value of ecologically-sound objects, landscapes, etc. I was intrigued when I found the same reference used by Gordon G. Brittan, Jr. in the same context: "the grudging 'You must eat your spinach' directive works only slightly better with children than with adults, particularly since there seems to be a clear alternative, namely to put the turbines anywhere else but 'my' view." P. 62 of "The Wind in One's Sails: a Philosophy," included in *Wind Power in View*.

[9] At the initial stage of wind power development, the whirling sound of the blades was another problem. However, with improved technology that problem seems to be overcome; plus, it would not be a problem with the Cape Wind project because of the distance between the turbines and the shore.

[10] One cartoon which recently appeared in *The Providence Journal* depicts a sinking tanker with oil spill all around and an oil-covered sea gull's comment is captioned as: "Oh, yes, much better-looking than wind turbines."

[11] Indeed, in his letter to the editor entitled "While Tilting at Windmills, Consider the Aesthetics," Robert Skydell asks: "Did we already forget last year's spill of nearly 100,000 gallons of light crude oil into the waters of Buzzards Bay?" *Martha's Vineyard Gazette* (Nov. 11, 2003).

[12] Another layer of this issue is so-called environmental racism. That is, those places that host various utility and resource extraction facilities (which cause environmental harm) are usually located in or near impoverished communities dominated by minority residents. One critic of the opponents of the Cape Wind

project thus points out: "Nor does it seem to them that other precious - *albeit less prosperous* - places, from West Virginia mountaintops to Wyoming sandhills, are sacrificed daily to yield the very fuels that the wind farm would displace." Komanoff, *op. cit.* (emphasis added).

[13] Documented by Righter, *op. cit.*, pp. 25, 27-8.

[14] Pointed out by Robert W. Righter, *Wind Energy in America: A History* (Norman: University of Oklahoma Press, 1996), p. 286.

[15] Cited by Virginia Postrel, *Substance of Style: How the Rise of Aesthetic Value Is Remaking Commerce, Culture, & Consciousness* (New York: HarperCollins, 2003), p. 156.

[16] *Ibid.*, p. 157.

[17] I thought of this possible analogy before researching the literature on wind power, but it was interesting to discover in my subsequent research that some people dealing with this issue also made the same analogy. See, for example, Righter, "Exoskeletal," pp. 33-34.

[18] A documentary film captures the farmers- and ranchers- change of attitude quite nicely. See *Running Fence: Christo's Project for Sonoma and Marin Counties, State of California* (New York: Maysles films, 1978).

[19] Wind turbines obviously are not meant to be temporary structures in the same way Christo's works are. However, Martin J. Pasqualetti points out that, in comparison with dams, mines, and nuclear waste sites, wind turbines *can be* dismantled and removed, rendering their alteration of landscape reversible. He concludes from this fact that "wind power need not produce a lasting landscape legacy" and he takes "this positive trait" as "one of the most conspicuous environmental advantages of wind energy." Pasqualetti, *op. cit.*, p. 167.

[20] The impossibility to design turbines themselves site-specific is pointed out by Brittan, *op. cit.*, p. 71.

[21] Skydell, *op. cit.* The fact that these "thin" surface aesthetic considerations do make a difference in the overall aesthetic value of an object challenges what I would call ecological determinism, which renders the aesthetic value wholly dependent upon the object's ecological value, so that anything with negative ecological significance is deemed automatically aesthetically negative and anything with positive ecological significance is deemed aesthetically positive, *regardless of* its sensuous appearance.

[22] Riverside County and Palm Springs, both in California, have regulations regarding "height, noise, and color" of turbines. In addition, "advertising and logos are prohibited, and electrical distribution lines must be buried underground." P. 145 of *Aesthetics, Community Character, and the Law*, Christopher J. Duerksen and R. Matthew Goebel (Chicago: The American Planning Association, 1999).

[23] These are culled from a number of academic writings, as well as from newspaper and magazine articles on this issue.

[24] Some of these and similar examples are explored by Carlson, *op. cit.*, and Dureksen and Goebel, *op. cit.*

[25] Yi-Fu Tuan, *Topophilia: A Study of Environmental Perception, Attitudes, and Values* (Englewood Cliffs: Prentice-Hall, 1974).

[26] William James, "On a Certain Blindness in Human Beings," in *Talks to Teachers* (New York: Henry Holt and Company, 1915), pp. 231-4.

[27] The importance of attending to people's attitude toward their landscape is explored by Laurence Short in "Wind Power and English Landscape Identity," included in *Wind Power in View*. For example, he claims that "the wind industry must respect our cultural connection to the land, an attachment to the landscape that has been reaffirmed in the United Kingdom as a metaphor for national identity." (p. 57)

[28] I am here using the notion of "cultural sustainability" proposed by Joan

Nassauer. An object (in her case a constructed landscape) is culturally sustainable when its features make people take notice, develop an affection, as well as a caring and protective attitude toward it. Even when an object is ecologically sound, if it does not thus appeal to people, it will not be culturally sustainable because people do not care about it and end up neglecting it. For the articulation of this view, see her "Cultural Sustainability: Aligning Aesthetics and Ecology" in *Placing Nature: Culture and Landscape Ecology*, ed. Joan Iverson Nassauer (Washington, D. C.: Island Press, 1997), pp. 67-83.

[29] The importance of empowering citizens in a project like a wind farm is stressed by a number of writers in *Wind Power in View* (Short, Brittan, Pasqualetti, Gipe).

[30] Brittan points out that wind turbines "preclude engagement. The primary way in which the vast majority of people can engage with them is visually. They cannot climb over and around them. They cannot get inside them. They cannot tinker with them." Brittan, *op. cit.*, p. 71.

[31] I thank Sheila Lintott for this reference. There are also precedents for marketing wind farms by using them as a backdrop for advertising or a film scene. See Brittan, *op. cit.*, p. 63, Pasqualetti, *op. cit.*, 165, and Robert L. Thayer, Jr., *Gray World, Green Heart: Technology, Nature, and the Sustainable Landscape* (New York: John Wiley & Sons, 1994), p. 131.

[32] Taken from *Gray World* and included in *Theory in Landscape Architecture*, ed. Simon Swaffield (Philadelphia: University of Pennsylvania Press, 2002), 189-196; ref. on pp. 189, 190.

[33] David Orr, *The Nature of Design: Ecology, Culture, and Human Intention* (Oxford: Oxford University Press, 2002), pp.185, 134.

[34] In addition to these, Thayer includes material recycling facilities, minimum tillage and organic farming practices, drip irrigation systems, bicycle transportation networks, and multipurpose wastewater treatment wetlands which double as wildlife reserves or recreation areas. *Gray World*, p. 126. I thank my student, Erica Chung, for calling attention to the city of Los Gatos, CA, which recently enacted an ordinance, in pursuit of "architectural excellence," cracking down on the placement of solar panels on top of the buildings that "threaten(s) to make their upscale Silicon Valley village an ugly place." "When Solar Clashes with Aesthetics," *San Jose Mercury News* (Aug. 5, 2003) reprinted in *EV World: People & Technology* ([www.evworld.com](http://www.evworld.com)).

[35] Taken from *Gray World*, included in *Theory in Landscape Architecture*, p. 192.

[36] The importance of developing "perception" is discussed in "Conservation Esthetic," in Leopold's *A Sand County Almanac: with Essays on Conservation from Round River* (New York: Ballantine Books, 1977). "Marshland elegy" is a title of a section in "The Quality of Landscape" and he also describes a marsh chorus in pp. 65-6. "The song of a river" and "the speech of hills and rivers" are discussed on p. 158.

[37] Cited by Righter, *op. cit.*, p. 36.

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