

DOWNLOAD PDF EXOSKELETAL OUTER-SPACE CREATIONS ROBERT W. RIGHTER

Chapter 1 : Table of Contents: Wind power in view :

1 EXOSKELETAL OUTER-SPACE CREATIONS ROBERT W. RIGHTER Driving through Altamont Pass with the setting sun over your shoulder, you see opening up before you the vast Central Valley of California, and with luck the serrated crest of the Sierra Nevada mantled in snow.

Farmer takes his inspiration from the famous "lost" colony of Roanoke, Virginia, where the first white baby in North America, Virginia Dare, was born. All of these people are settled on a planet named Dare, the "second planet of a star classified as Tau Ceti by the moderns. Farmer then picks up the story with the Roanoke descendants. Dare is a world where such mythological creatures as dragons, werewolves, unicorns, and humanoids with horsetails still exist. Jack Cage gets involved almost simultaneously and by chance with the horstel killers and a beautiful member of the native species. The background is well developed, the action competently handled. The main problem is that the plot runs continuously and dangerously close to standard cowboys and Indians. There are some good science fictional ideas, notably a huge underground being in whose "horns" one can live symbiotically, and there are some rather charming intelligent dragons, but none of these are integral to the story. Nothing interesting goes on between the people involved. The Roanoke colony was spirited off to the stars, it seems, for reasons never quite made clear. Also, for unclear reasons, the descendants of the settlers seem to be Roman Catholics and used to hearing masses in Latin, even though , the year the colony was "lost" was also the year of the Spanish Armada, and being a Catholic in Protestant England was less fun than being a Communist in America in Of course, the book maintains a certain level of readability, but Farmer has done a lot better. First hardcover edition; library binding and good paper. This is his "World of Tiers" series. These began in and numbered five books altogether. Ace Books, in its most welcome new policy of putting the best of its backlist out again rapidly, is now issuing the series on a one-a-month basis. These books deal with a decadent race who once mastered all science. Each Lord, as he calls himself, can now literally build himself a private universe - a pocket universe, as it is called - to his own design and with its own laws of physics. The first book shows us Robert Wolff being called into one of these universes - a world laid out something like a Babylonian ziggurat. The Lord had peopled it with all sorts of mythical beings, abducted from Earth or created. And now the Lord is missing, and the universe is going to hell in a hurry. Wolff and the mischievous Kickaha the Trickster set out to rescue damsels and restore order. After that, the second book takes off on another wild romp as the Lords fight each other in their own vicious way through a perfidious ubiquity of pocket universes. The books are totally lacking in significance, relevance, or symbolism - and they are just pure fun to read. An abridged version of this work, called The Gate of Time, was published in by Belmont. This is a parallel universe story in which Roger Two Hawks, a World War II bomber pilot, is transferred into a similar, although less technologically advanced, "Earth. Mediocre fare, of interest only for Farmer enthusiasts. But the last halves of both sections are integrally related and powerfully modeled, in full depth and dimension. My paperback copy is falling apart. Limited edition, good paper. In Seekers of Tomorrow, Sam Moskowitz credits work like The Lovers and the stories collected in Strange Relations as the cause of a "traumatic revolution contributing toward the maturation of science fiction". In Night of Light , Farmer combined his use of sexual material with an equally unaffected use of religion. Carmody experiences gods, demons, archetypes, symbols, and mythical realities sufficient to cow Freud, Jung, and Campbell. In the first half of NIGHT OF LIGHT he is close to his best which makes the book well worth attention , but in its second half he gives us merely a series of violent adventures which add nothing that could not have been said in five or six pages. Weinkauff from which I learn that Farmer writes "mythic fiction If you do, you can defend them. To have swashbuckling adventure you have to have phoney swashbuckling, adventurous heroes and villains. All three are in print from Ace right now, or at least Bookmaster has all of them displayed. In any case, the whole series is worth reading. Farmer has constructed his world in tiers, each tier with more area than an Earthly continent and with its own distinct civilization s ,

each people patterned after some people on Earth or from some other sf or fantasy series. Farmer has lifted elements from just about all his competitors, and manages to use each element as well or better than its originator. Then there are the Gates—teleportation devices built by the Lords—which allow his heroes to pass from one tier to another and allow the Lords to get around behind the scenes. And there is some indication in Cosmos that the fourth book of the series will be set, at least partly, on Earth. The real fantasy element is the science of the Lords, who are portayed as the typical hedonistic, lazy, and generally neurotic descendents of the creators of all the shiny machines. For instance, A Private Cosmos starts on the Amerind level of the Tier World and is peopled with Amerinds of various types, from tribes of Plains Indians to the more civilized Tishquemetmoac, who seem to be patterned after the Incas. The rest of the details are straight anthropology, history, archeology, etcetera. As I say, a good deal of the appeal of the series comes from sorting out the various details and trying to figure out which element is based on fact, which is lifted from a particular piece of fiction, and so on. In any case, the elements are fitted together reasonably well. Of course, virtually all the action is deus-ex-machina: He always triumphs in the end, but his actions from beginning to end are all defensive. The details of background keep the inquiring part of your mind busy, so reader identification is almost total, which is about the best the writer of adventure fiction can hope to achieve. And to a person who can see only the sex in a book where sex is used as a tool, then the issue is settled and the work labeled. Except that Philip Jose Farmer is not a simple man, not is he a simple writer, and any book he writes is always more than it seems. The Image of the Beast begins sometime after with the city of Los Angeles covered by a penetrating green smog. Private detective Herald Childe is in the folm room of the L. The film ends with the message: The film has been mailed to the police. Herald sets out to find the weird killers. On the surface this is a grotesque private-eye story. Yet what are we to think of a name like Herald Childe? And on the title page the book is ammended: What happens when Childe finds the mand the woman of the film in an old, secret-passaged mansion in Beverly Hills? He encounters a very horny ghost, a woman with an incredible snake-like creature living in her womb which emerges to enter her throat during a solitary sex act, plus assorted werewolves, witches, vampires. Is there erotic sex in the book? Mostly the sex is too strange, and humorous, and grotesque, and mind-stopping to be arousing. He is using sex as a tool, perhaps as a weapon, as symbol; using it The book ends with death and destruction of the mansion by fire. Herald kills or causes to be killed most of the supernatural creatures in the old house, yet the book is obviously only an episode, part of a larger whole, because so many, many questions are left unanswered, and in the end Childe is marked for further contact with the Outside forces. There are indications that the supernatural creatures are aliens who come into our universe through cracks, rifts, "gates" in the "walls. In a postscript Theodore Sturgeon mentions shock at encountering in the book the woman who has sex with the creature in her womb. He had never run across an image of that nature before. There is more to it, I suspect, than meets the eye. Perhaps more to it than meets the mind. A terrible smog holds Los Angeles in its grip. Harold Childe is a private detective, and he was about to ditch his partner. But, stomach still writhing from his viewing of the film, he vows to get the person or persons unknown who have done this terrible thing. He is working with a cop named Bruin. He was your partner, right? But you was going to split up, right? In his eloquent, if misplaced, postscript to the book, Theodore Sturgeon asks that we not label — ah, Label — this book. To begin with, there is the label the publisher has placed on the book. Opening the cover we find a page on which the sole legend, in very black type, reads "This is an original Essex House book — the very finest in adult reading by the most provocative modern writers. A much better case could be made for the actual value of pornography, qua pornography, than the present-day hypocritical stand these publishers so half-heartedly pursue. And after all, the book does indeed contain a number of sex scenes, all of them written with exactly the same monotonous attention to lubricious detail which the sex-book reader has come to expect in his purchases. But what about that "living connective tissue" of which Sturgeon spoke? Dreary pickings, actually, and the quote from Officer Bruin should tip a hint in that direction. Farmer is a classical case of the "uneven" writer. Whatever the causes, he manipulates his characters unmercifully, often in flagrant contradiction of the

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motivations he has previously established for them, or "as in the case of this book" he sets them to walking woodenly through his plot without the whisper of life to them. Harold Childe a name only slightly less ham-handedly Symbolic than Bruin is explained to us on several occasions, but never demonstrates the slightest personality, talent at his profession, or intelligence. He is a faceless automaton despite the fact that everyone notices his resemblance to Lord Byron, of all people! Unfortunately, the story itself is cobbled together from some pretty hoary old plot ideas, as previously noted, and Farmer tells it without a sense of pace, movement, style or color. What could at least have been passed off as "camp" is merely dreary. Under the circumstances, what fare best in the book are the sex scenes. In his descriptions of mutilation, torture and horror, Farmer evokes the psycho-sexual with a vivid imagination the implication of which I will leave for others to analyze. But nobody ever told Farmer that sex could be realistically described in terms not weighted with all the cliches of hackwork pornography, and so even these, his best scenes, suffer from inept writing. Thus, in the long run, not one, but two reputations will suffer from the publication of *The Image of the Beast*. This one is called "Image of the Beast". In "Image," which may be one of a series if the faithful buy it, private eye Herald Childe sets out to find out what manner of monsters killed his slob of a partner by, among other things, biting off his penis in a moment of good fun. Said monsters turn out to be strays from that old stereotype of SF, the parallel universe.

Exoskeletal outer-space creations / Robert W. Righter Wind power and English landscape identity / Laurence Short The wind in one's sails: a philosophy / Gordon G. Brittan, Jr.

Please contact mpub-help umich. 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: Introduction There is a storm brewing off the coast of Cape Cod -- a storm of controversy, that is. It will be the first offshore wind farm in the United States and the biggest in the world. 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. So what is the source of the opposition? They cannot be hidden; nor can they be camouflaged like cell phone towers and satellite dishes. Everyone will see it, anyone who wanders on the water, who has a home that faces the water. But by necessity, wind farms have to be located on open, unhindered lands. Strategy to transform the aesthetics of wind farms a. 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. 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: 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: 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? 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? 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? 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. Photo illustration by Reid Hitt Photo illustration by Reid Hitt Photo illustration by Reid Hitt 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. 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. So this wind farm will be a small aesthetic price to pay, in comparison with future landscape destruction on a global level. 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. 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. 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. Indeed, past examples of wind farms in Europe and United States indicate that such a change is already taking place: 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. Furthermore, history does not lack examples which make us question in retrospect: There are successful cases of unfamiliar and new constructions "intruding on" or "invading" a landscape yet with positive aesthetic results. 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. 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. 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: 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. 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. 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. 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, [23] 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. 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. 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. 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. 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. 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. 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. We can "engage" with them only visually, but not literally. 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. It may encourage our civic-mindedness on a micro-scale at the expense of its application on a macro-level. 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. 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? The aesthetics of sustainability Some ingredients have already been proposed by those who advocate and promote sustainable design, wind turbines being one example. 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. 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. 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.

Chapter 3 : Machines in the Ocean: The Aesthetics of Wind Farms

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Renewable energy technologies appear attractive because they Wind Turbines and Invisible Technology: Energy consumption has been tied to economic and public well-being for decades, and policymakers have generally felt that economic growth drove increased energy consumption and viceversa. As Langdon Winner presciently noted in , an obsession with economic indicators and costâ€”benefit analyses among policymakers obscures historical and social concerns that influence energy policy. In short, Winner argues that energy policy remains shortsighted about noneconomic considerations. Richard Hirsh is a professor of history and science and technology studies at Virginia Tech. He writes and speaks extensively about the history and management of the electric utility system. For decades, especially before the energy crisis, many researchers believed in the strong correlation between overall energy growth and economic growth. These studies have noted that the energy policy community continues to downplay the importance of social science methods and concepts, and that many energy problems continue to be described, analyzed, and understood in ways that reflect a preoccupation with an economic model of rational behavior. Consequently, these participants lose effective representation as regulators or legislators invalidate their opposition to policy proposals. Providing context, we first offer a brief history of wind turbines and a discussion of some of their presumed benefits. While we acknowledge several conventional reasons for the oppositionâ€”such as avian mortality associated with wind turbines and objections based on aestheticsâ€”we add to the discussion by positing subtle and perhaps subconscious explanations for animosity toward the technology. For in-stance, we note that the siting of turbines on rural mountaintops intensifies the already existing conflict between rural landowners and urban customers. More originally, we opine that opposition to visually obvious and numerous wind turbines stems, at least in part, from the long and successful history of an electric utility system that made its product largely invisible, both in its manufacture and physical manifestation. See, for example, Christopher A. Other discussions dealing with democratic deliberations in the technical realm and the value of expertise in making policy decisions include E. But the existence of tall, spinning silhouettes at the top of mountains or a few miles offshore uncomfortably reminds observers that electricity does not emanate magically or inconsequentially from wall sockets; rather, electricity must be created in ways that require painful choices pitting an energy-intensive, high material standard of living against large-scale environmental damage. The previous achievement of the electric utility system in making its infrastructure relatively unnoticed, in other words, sometimes works in an ironic sense to spur objections to wind turbines. Our exploration of antagonism toward wind-turbine technology has value for historians and nonacademics alike. The Environmental Complexities of Wind Energy At the most uncritical level, wind turbines offer significant potential and real benefits. To the vast majority of Americans who support the technology, turbines contrast favorably with fossil-fuel and nuclear power plants, which require raw materials to be extracted from underground, from mountains, and from ocean beds and therefore cause impacts to natural ecosystems. Misa, Philip Brey, and Andrew Feenberg, eds. Investigations applying this concept of invisibility to energy systems include Jane Summerton and Ted K. Renewable energy technologies appear attractive because they eliminate impacts like annihilated mountaintops exposed to enable coal mining and radioactive by-products, and they make electricity from a never-ending, free supply of natural energy. On a deeper level, the benefits of wind turbines expand greatly. For example, power providers can often build the devices more quickly than larger-capacity conventional generating plants, thus enabling them to meet incremental demand growth with less economic risk. In March , for example, the Gallup organization reported that 71 percent of Americans think that the country should place more emphasis on wind energy. Sovacool and Charmaine Watts. John Christensen et al. These data describe the nameplate capacity of the machines, a number that usually refers to the maximum

rated output of a generator. For wind turbines, that capacity is reached when the wind blows at the optimal speed for their specific design. At lower wind speeds, the power output in megawatts declines and the so-called capacity factor drops, typically to about 30 to 40 percent, even in areas of good wind resources. A survey of American wind projects in revealed production costs of less than 5 cents per kilowatt-hour kWh , making wind turbines more attractive than natural gas in many markets at the time. To harvest the abundant wind resources at Buffalo Ridge in Minnesota, for example, Xcel Energy constructed a set of transmission lines from through the end of the decade. Some of the enthusiasm for wind may be dispelled by the growing use of low-cost natural gas for power generation. Congress, Energy Policy Act of This report notes, for example, that in , China had more wind-turbine capacity than the United States approximately 62, to 46, MW. In , the countries with the most installed wind capacity were China Opponents point to avian mortality as among the most critical. Even close to newer turbines, whose blades turn more slowly than those of the first-generation machines of the s, birds die occasionally during migratory flights, and especially when turbines operate in poor weather and at night. Bats also suffer when they fly into the flow pattern of turbine blades, where reduced air pressure disorients them and causes internal hemorrhaging. To address the issue of avian mortality, some turbine operators shut down their machines in poor weather, at night, and during periods of known migrations. Responding to similar concerns, the U. Department of Interior has drafted guidelines for minimizing impacts to wildlife through improved site selection, construction, and operation of energy facilities. Some of the best offshore wind potential in the United States, for example, exists along the eastern seaboardâ€™on coastlines valued for their unblemished views, abundant fishing resources, and recreational uses. Piner, and Pamela J. More than thirty-five years ago, Robert J. Klug, and Robert M. Sovacool and Richard F. Their legs are frozen in concrete, stationary but seemingly kinetic. However, they have also become much larger: They often elicit a negative response because they do not fit into a preexisting sense of where similar large-scale industrial technologies belong. Often, policymakers do not consider the significance of these symbolic meanings, largely because few people express them cogently. On the one hand, wind turbines have become popular symbols of progress, modernity, and environmental consciousness; they serve as backdrops to advertisements of environmentally preferable hybrid vehicles, such as the Toyota Prius, and even beauty products. See photographs of Prius cars and wind turbines at [http: Postal Service commemorated Earth Day with its wind-turbine cancellation mark](http://Postal Service commemorated Earth Day with its wind-turbine cancellation mark)³⁹ figs. On the other hand, huge wind turbines have gained a different symbolic meaning to many people, as the devices intrude on what had been a relatively unspoiled and natural environment. After all, urbanites have a history of adopting unusual and alien forms of architecture. Using a similar logic, residents of the isolated Scottish Isle of Lewis opposed the introduction of as many as turbines that would have reached meters in the sky. Since rural customers do not in aggregate use as much electricity, they resent the fact that they suffer the consequences caused by turbine installation while urbanites gain the benefits of increased Postal Service stamp commemorating Earth Day, April Arguably ethical, the situation imposes the costs and potential mishaps upon one set of the population while another group reaps the benefits. In a related manner, rural people often feel that they have little sway in the policy-making, permitting, or siting processesâ€™processes that city developers and their hired consultants and lawyers use to exploit rural resources. Of course, one must avoid generalizing the views of all country folk. In many rural communities, people have become accustomed to resource extraction because of benefits that accrue to stakeholders, such as extra income for farmland owners, increased real-estate tax revenue for municipal governments, and greater employment opportunities. Among some Midwestern farmers, the placement of wind turbines on flat, monotonous, and wind-swept properties signals modernity and progress while also allowing them to reap royalties or rent payments from turbine operators. Rather than viewing turbines as a symbol of industrialization blighting a bucolic rural landscape, both likeminded farmers and nonfarmers in these areas view wind turbines as the latest version of state-of-the-art farm equipment rendering the land more productive. Pasqualetti, Paul Gipe, and Robert W. These concerns are also exacerbated by views that rich city dwellers impose themselves on their poor rural cousins, who have less at stake in the turbines

than do urban business people. The observation comes from Virginia Tech graduate student in science and technology studies Josh Brinkman, whose family has farmed large expanses in the Midwest for generations. The English countryside, for example, still remains largely desirable, despite centuries of human planning, as historian Robert Righter observes: Winding roads, curving fences, wooded hills, hedge-rows, and green pastures combine to render our ideal of an aesthetic landscape. The combination of natural elements gives the illusion that nature does the planning here. Obviously, there is human order, but it is subtle, hidden from view. What does come to mind is harmony: It is as if people and the land have coexisted here in the past, in the present, and will continue in the future. In recent decades, academics have focused more scrutiny on how humans perceive and deal with nature, and how they use technology to mediate it. For example, psychologist Peter H. Sherry Turkle, meanwhile, has written about the relationship between humans and technology, although she focuses more on how the technology mediates relationships among people. Conservation and environmental psychologists have asserted that people make emotional connections with nature, which obviously affects their views of how it should be developed. Canter and Kenneth H. For discussions of the rich set of interactions among nature, landscape, and technology, see David E. Earlier, people considered many elements of valued infrastructure as symbols of modernity or of yielding benefits that vastly outweighed their aesthetic costs. Perhaps they retain the same perspective when holding generally positive views toward the construction of tens of thousands of cell-phone towers during the last few decades. While one can debate whether people interpret cell phones as progressive and wind turbines as regressive, the two technologies differ significantly in the fact that the latter demonstrate movement. Just like other animals, humans perceive moving things as more significant than static entities. Because of evolutionary pressures, most animals detect motion as a means of identifying biologically important stimuli, such as predators, potential prey, or their own kind. To some people, the spinning blades serve as annoying distractions and symbols of rural-urban conflicts, along with subtle, difficult-to-express antagonisms toward exploitative urbanites. Consequently, the hardware reminds people or introduces them to the notion that their existence in a technologically intensive world requires them to depend on the plentiful supply of electricity- an almost magical and largely unsensed substance. Moreover, for better or worse, the system that produces and distributes that substance has remained essentially invisible as well, further clouding the popular understanding about electricity and the social, economic, and political challenges Dittrich and Stephen E. The prominent existence of wind turbines destroys that invisibility and causes people to confront difficult choices. For the most part, the sources of electricity- power plants- have been exiled to rural, low-population regions of the country, although not always. When electric utility systems emerged, soon after Thomas Edison demonstrated one in New York City in , generation stations remained near their customer bases. Producing direct current, the first plants could distribute power no farther than a few miles from their sources, thus requiring dirty, throbbing, and noisy stations to locate conspicuously within cities. The situation changed, however, as evolving alternating current and transformer technologies enabled the transmission of power over great distances. Power could, therefore, emanate from remote hydroelectric generators, as demonstrated in by a plant at Niagara Falls, twenty-six miles away from its predominant electricity consumers in the city of Buffalo. Throughout the century, such plants employed turbine generators that grew from 3. The American Electric Power Company, for example, installed a series of 1, MW units in Winfield, West Virginia, a town of 2, people according to the census within a county having a population of 55, and located about twenty-five miles from the state capital.

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Chapter 4 : WIND-WORKS: Contents

A landscape of power / Martin J. Pasqualetti, Paul Gipe, Robert W. Righter --Exoskeletal outer-space creations / Robert W. Righter --Wind power and English landscape identity / Laurence Short --The wind in one's sails: a philosophy / Gordon G. Brittan, Jr Wind landscapes in the German milieu / Martin Hoppe-Kilpper Urta Steinhäuser --Society.

Paul Gipe "Wind Energy in America: A History" by Robert Righter. In this case Herbert was trying to use the power in the wind to liberate him from feudal despotism. Wind energy, says Righter, has always lent "itself to individualism and decentralization" and as such has often been seen as a tool of emancipation by the downtrodden. This unfortunate outcome illustrates that the use of wind and other forms of renewable energy is far from assured and certainly not inevitable. For even today the progress made in California and elsewhere across the country is threatened as the U. The latter permits Americans of any class, color, or creed to install their own wind turbines much like Herbert of Bury had attempted to do. The struggle between democratic and centralized control of energy continues. Righter examines this and other weighty subjects in the first book length treatment of the development of wind energy in the United States by a professional historian. He is best known among historians and environmentalists for his insightful book, "Crucible for Conservation," which describes the fifty-year effort to create Grand Teton National Park. He is the first writer from outside the field of wind energy to bring his talents to bear on this subject since Volta Torrey, a NASA science writer, published "Wind Catchers" in , and T. As a historian, Righter treads on treacherous academic turf because his book covers the tumultuous s "wind rush" in California and includes interviews with many participants who are still living. Traditionally, historians confine themselves to long-forgotten events or to public figures that are safely interred. He himself asks rhetorically, "When does history end and current events begin? Using his investigative skills as a professional historian, Righter has unearthed some original and intriguing material relating to the role--and the promise--of wind energy in the United States. Though the book concentrates on wind-generation of electricity, Righter also discusses the important role of the water-pumping windmill in American culture. But the rancher quickly set him straight by explaining that the tower "once held a wind turbine and that for some years it had supplied his family--himself, his wife, and children--with electricity. The journey led to "Wind Energy in America. Whatever the mistakes of the past, the first phase of the wind energy story is at an end. There is the feeling that the nation drinks from a never-ending fountain of energy. Thus, the visionary ideas of engineers such as Palmer Putnam and Percy Thomas were blithely cast out by politicians and scientists who placed inordinate faith in nuclear power," he says. And nuclear power according to Righter was merely "another version of the myth of energy superabundance," a source too cheap to meter. Righter sounds a warning about the future of wind energy in the United States. It would abandon any concept of stewardship, leaving the fate of the world to chance rather than sensible planning. Robert Righter, "Wind Energy in America: The book contains 41 illustrations, including several previously unpublished photos of early American wind turbines. Wind Energy in America: A History can also be found on Amazon.

Chapter 5 : Full text of "Starlog Magazine Issue "

This chapter introduces the aesthetic context of present-day wind developments that early citizen reactions at Altamont helped produce. The worldwide use of wind energy, although expanding, has.

Chapter 6 : The Official Philip Jos© Farmer Web Page | Reviews

Martin J. Pasqualetti, Paul Gipe and Robert W. Righter ; Exoskeletal Outer-Space Creations / Robert W. Righter ; 2. Wind Power and English Landscape Identity /.

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Chapter 7 : Wind power in view (edition) | Open Library

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.), in Wind Power in View.

Chapter 8 : Wind Turbines and Invisible Technology - calendrierdelascience.com

Righter, Robert W. "Exoskeletal Outer-Space Creations." In Wind Power in View: Energy Landscapes in a Crowded World, edited by Martin J. Pasqualetti, Paul Gipe, and Robert W. Righter, San Diego: Academic Press,

Chapter 9 : WIND-WORKS: Wind Energy in America: A History by Robert Righter

Relates the history of the efforts to capture the power of wind for electricity, from the first European windmills to California's wind farms of the late twentieth century.