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FACT AND FICTION, FEAR AND WONDER:  
The Legacy of Rachel Carson 

Lisa H. Sideris 

"The real world around us" is a recurring phrase in the writings of Rachel Carson. Carson is best known as the author of *Silent Spring* (1962), the lyrical yet fact-based exposé that alerted Americans to the dangers of chemical pesticides in the environment. But Carson’s name was already familiar to many in the 1950s and 60s, owing to her best-selling books on the sea and sea life. In those earlier works, Carson evokes a reality that is best apprehended not through facts but as an experience of enchantment and mystery, a sense of wonder or reverence that is more real than facts. Throughout much of her writing, including passages in which she reflects on herself as a writer, Carson clearly delineates reality from factual knowledge. Facts teach us little about the essence of life and ultimate cosmic realities, and can even obscure comprehension of our world. 

This close association of reality with mystery pervades much of Carson’s work. The exception is *Silent Spring*, where terms such as enchantment and mystery take on a decidedly sinister flavor. Elsewhere portrayed as an inferior form of knowing, factual knowledge is foregrounded in *Silent Spring* and presented as a corrective to dangerous and destructive forms of enchantment. An analysis of this shift in Carson’s writing is helpful in understanding associations of her work both with quasi-religious, apocalyptic fear and with a form of natural wonder and awe that borders on religious. In the last few years, the association of Carson with apocalyptic, irrational, fear-driven environmentalism appears to have gained ascendancy in American culture, judging from the numerous and unabated attacks on Carson’s work and 

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credentials emanating from internet websites and the popular media. Carson, who died in 1964 amid a deafening chorus of public praise as well as condemnation, has perhaps never been so honored and so vilified as she is today. Environmental educators and parents applaud Carson’s concern for future generations and her methods of exposing children to the wonders of nature and the wholesomeness of outdoor play; meanwhile, missionaries and aid workers in Uganda and elsewhere accuse Carson of murder, of knowingly exposing children and pregnant women to the ravages of nature. (If the murder charge surprises you, try entering a Google search with the terms “Rachel Carson” and “DDT.”)

In 2007, amid nationwide centennial celebrations of Carson’s 1907 birth, and again in 2009, when Carson was chosen by the National Women’s History Project as their honoree and “iconic model,” the vitriolic and hyperbolic rhetoric in newspaper editorials and internet weblogs reached a fevered pitch, resembling in tone and content the attacks on Carson and Silent Spring in the 1960s. Much of this new wave of criticism holds Carson personally responsible for millions of human deaths from malaria in the developing world, owing to the discontinuation of DDT as an anti-malarial. Earth Day is now countered with World Malaria Day (in 2009, a mere three days separated them). Not unlike those of Carson’s era, modern critics often evoke scenarios of apocalypse, secular or religious, and turn these visions against Carson, Silent Spring, and the eco-colonialism and hysterical chemophobia that her work allegedly spawned. One thing that differentiates these criticisms from those of 40 years ago is that they align Carson’s warnings about chemical pesticides with the current generation’s allegedly unfounded fears of widespread environmental catastrophe, particularly its preoccupation with climate change. Carson’s dire predictions never came true, critics contend, and neither will those of Al Gore, the self-appointed Rachel Carson of Global Warming. When the alarm sounds this time around, we are advised to hit the snooze button.

Carson was an extremely careful researcher and writer. Her creative decisions — her use of particular images, myths, and other literary devices — have played a crucial role in readers’ reactions, be they wonder or fear. Some of Carson’s stylistic choices certainly contributed to readers’ ongoing, intense reactions of fear and anger in response to Silent Spring, perhaps more than she intended, though she did, I believe, intend to alarm. In what follows, I give sustained attention to the apocalyptic narrative and imagery of Silent Spring and to a subset of the numerous, and fascinating, counter-narratives the book has generated. Along the way, I consider claims that the environmental movement as a whole is a dubious form of religion and that the threats environmentalists perceive are a matter of fiction or false belief. Carson herself is often identified by critics as the prophet of a false and dangerous religion, the founder of a “murderous church” (Lehrer).

Ultimately, I aim to shed light on why these strong negative reactions continue to surround Carson’s work, even while I maintain that the theme of wonder rather than fear remains, or ought to remain, the overarching message of her work and worldview. In order to appreciate what Carson intended to achieve with Silent Spring, it is necessary to understand the trajectory of her work as a whole. I contend that wonder at natural processes, as well as fear of the consequences of tampering with and destroying those processes, both have an important role to play in the environmental movement and in moral motivation that engenders environmental action, individually and collectively. Taken as a whole, Carson’s work stands the test of time because, from a scientific standpoint, she correctly understood many aspects of nature; perhaps more importantly, it endures because Carson, as a gifted writer, also understood much about human nature.

NATURE-STUDY, AND CARSON’S EARLY WORK

We begin by looking at Carson’s understanding of categories such as mystery, reality, and fact, and how these evolved over time. Carson’s alignment of reality with mystery was significantly shaped by her childhood exposure to the nature-study movement. When Carson writes, for example, that the natural scientist is never bored by her studies because “every mystery solved brings us to the threshold of a greater one” (Lost Woods 159), she echoes the convictions of early twentieth-century nature-study advocates such as Liberty Hyde Bailey who wrote that “for every fact that scientists discover they turn up a dozen mysteries” (Bailey 44). Proponents of nature-study were at pains to distinguish their curriculum and goals from mechanical memorization and fact-based teaching of biology or natural history. Like environmental
education initiatives popular today, nature-study aimed to counter the effects of urbanization and technology on young children. It was hoped that a scientific and sensory acquaintance with natural realities, gained in childhood, would help sustain one’s sense of wonder and empathy with other lifeforms well into adulthood. Nature-study advocates such as Bailey understood that for the child, the real world and the enchanted world are one and the same; they sought to capture the child’s imagination and feed his curiosity at a formative stage in his development.

The teachings of nature-study mingled readily with the Scottish Presbyterian ethos that permeated Carson’s childhood home (Sideris “The Secular and Religious Sources”). A devout Christian and an outdoors enthusiast, Carson’s mother taught her daughter to love and respect nature. Carson always considered her mother her chief ally in her crusade (a term she occasionally used) to protect the natural world from human destruction. Religious instruction and love of nature were also intimately linked in the particular genre of literature that Carson imbibed as a child. With roots in the Victorian tradition of children’s literature, nature-study sought to inculcate moral virtue, civic responsibility, aesthetic appreciation, and respect for life through stories, essays, poems and especially direct encounters with nature. “Embracing the ideas of natural theology that by studying nature, the intricate design of the Creator would become visible, the nature-study movement taught that nature was holy” and that protecting it was “a divine obligation” (Lear 14).

Certain quasi-Calvinist themes are evident in Carson’s views of nature and human nature, as well as her commitment to civic engagement and moral activism (Sideris, “The Secular and Religious Sources”). Chief among these was Carson’s lifelong suspicion of humans taking on an idolatrous role vis-à-vis nature and God; Carson believed that the study of nature, and science generally, can foster arrogant and hubristic tendencies that warrant our constant vigilance. But so long as knowledge remains tethered to an attitude of piety and humility, wonder at the world around us is never dispelled but only enhanced. As she matured as a writer and a thinker, Carson was also increasingly drawn to the theology and ethics of Albert Schweitzer, whose philosophy of “reverence for life” strongly resonated with Carson’s own worldview. She framed her arguments in Silent Spring with Schweitzer’s philosophy and activism in mind, and the book bears a dedication to Schweitzer “who said ‘Man has lost the capacity to foresee and to forestall. He will end by destroying the earth’” (v).

In general, Carson believed that the best antidote to our destructive impulses was never to lose touch with the mysterious realities of the world around us. “Mankind,” she wrote, “is intoxicated with his own power. . . But I believe that the more clearly we can focus our attention on the wonders and realities of the universe about us, the less taste we shall have for destruction” (Lost Woods 168). Carson retained a sense of enchanted and mysterious reality well into adulthood, and she implicitly or explicitly encourages an adult audience to cultivate, or perhaps recall, childlike engagement with nature. A portion of her writing was specifically devoted to helping parents instill a sense of wonder and enchantment in children. The Sense of Wonder succinctly and eloquently articulates the nature-study agenda that strongly influenced Carson’s own childhood years. Published posthumously in 1965, the book began as an essay that appeared in the Woman’s Home Companion in 1956 titled “Help Your Child to Wonder.” There Carson laments that most of us have lost children’s “instinct” for wonder, their sensory and emotional engagement with nature, long before we reach adulthood.

An observation attributed to D.H. Lawrence captures well Carson’s sense of wonder at nature and its relationship to facts: “Water is H2O, hydrogen two parts, oxygen one, but there is also a third thing that makes it water and nobody knows what it is.” That is to say, Carson believed that scientific explanation, crucial as it is, does not exhaust the meaning of the thing we study, that in explaining it, science does not explain it away. For Carson, mystery and wonder were not merely terms denoting temporary states of ignorance, or “problems” to be solved by progress in science. These were essential, enduring categories of the natural world. Science may edge us closer to certain mysteries, allowing us to know them more fully, but it could only increase, never displace, wonder, reverence, or awe. Carson summed up her adherence to evolutionary theory in these terms: “it is a method so marvelously conceived that to study it in detail is to increase — and certainly never diminish — one’s reverence and awe both for the Creator and the process” (qtd. in Brooks 9).
Yet an inordinate focus on factual details can damage perception of natural realities — the natural processes and the relationships that obtain between entities, living and nonliving, in the natural world. Carson advocated exposure to nature using all the senses, rather than laboratory studies that isolate an organism from its ecological context. “Any concept of biology is not only sterile and profitless,” Carson argues, “it is distorted and untrue, if it puts its primary focus on unnatural conditions . . .” (Lost Woods 193). Like Bailey, Carson worried that a diet of facts introduced too soon and too forcefully in the child’s life might stunt her sense of wonder and mystery and turn her away from nature study. Echoing Bailey’s lament that we “stuff our children so full of facts that they cannot digest them” (Bailey 48), Carson argued that it is better to “pave the way for the child to want to know than to put him on a diet of facts he is not ready to assimilate” (The Sense of Wonder 56). Drawing on a different metaphor, she writes: “If the facts are the seeds that later produce knowledge and wisdom, then the emotions and the impressions of the senses are the fertile soil in which the seeds must grow” (56). Once sparked, children’s curiosity will lead them to inquire about facts and details, but a young student “should first become acquainted with the true meaning of his subject through observing the lives of creatures in their true relation to each other and to their environment” (Lost Woods 193). Reality for Carson means what is most “true.” But what is most true cannot be known through facts alone.

Adults who, as children, never received the nature education Carson recommends in “Help Your Child to Wonder” were by no means beyond redemption. In accepting the John Burroughs Medal for nature writing in 1952, Carson chided fellow nature writers for their lack of faith in a public capable of sharing their sense of natural wonder — or a public in whom, at the very least, that sense could be cultivated with a little effort. “I am convinced that we have been far too ready to assume that these people are indifferent to the world we know to be full of wonder,” she ventured. If the public seems indifferent to nature’s wonder, she continued, “it is only because they have not been properly introduced to it — and perhaps that is in some measure our fault.” She concluded this speech with a reference to the inseparability of mystery and reality: “For the mysteries of living things, and the birth and death of continents and seas, are among the great realities” (Lost Woods 95-96).

MYSTERY AND WONDER IN CARSON’S SEA WRITING

For Carson, proper introduction to nature began with exposing the fundamental reality that humans are but a small part of the natural world and natural history. How better to illustrate this point than with reference to the vast and ancient ocean? The first book in Carson’s sea trilogy, Under the Sea-Wind, looks and reads rather like a child’s book, featuring animals as main characters and numerous line drawings of sea life. Carson attaches personal names — Silverbar, Rynchops — to the shorebirds and sea creatures whose day to day lives and frequent adventures comprise the book’s plot. For the most part, the narrative voice emanates from the perspective of the sea creatures themselves, with occasional use of omniscient narration. Carson’s rationale for this approach is explained in detail in a marketing questionnaire for Under the Sea-Wind: “The ocean is too big and vast and its forces are too mighty to be much affected by human activity,” she wrote. “So I decided that the author as a person or a human observer should never enter the story . . . I wanted my readers to feel that they were, for a time, actually living the lives of sea creatures” (Lost Woods 55-6).

Carson’s efforts to present the sea world from the standpoint of its inhabitants recalls a distinction in nature study literature between “intrinsic” and “extrinsic” forms of knowledge, as Bailey termed them (130). The student was urged to imagine the world from the perspective of the organism — the intrinsic perspective — in order to attain greater sympathy, but also in order to reinforce the message that the natural world does not revolve around humans and their concerns. Extrinsic knowledge was largely discouraged, as it was motivated by a desire to locate the function or usefulness of things in nature relative to humans. Bailey, like Carson, considered such knowledge largely unreal. “The long-continued habit of looking at the natural world with the eyes of self-interest — to determine whether plants and animals are ‘beneficial’ or ‘injurious’ to man,” Bailey argues, “has developed a selfish attitude toward nature, and one that is untrue and unreal” (114). Carson often strives to adopt the intrinsic perspective, as in one passage that describes owls as their prey know and fear
them — “the feathered ones that strike from the sky” (Under the Sea-Wind 52).

Carson’s second, and hugely successful, book The Sea Around Us abandons this narrative style but places similar stress on the insignificance of humans and human perspectives, compared to the vast and ancient oceans, while emphasizing our connection, evolutionarily, symbolically, and subconsciously, with ocean waters. We are children of the “mother sea,” Carson writes. Water, she reminds us, was once the medium of every human life, and a part of us senses this still. Alluding to a recapitulationist version of evolution, she explains that, “as life itself began in the sea, so each of us begins his individual life in a miniature ocean within his mother’s womb, and in the stages of his embryonic development repeats the steps by which his race evolved, from gill-breathing inhabitants of a water world to creatures able to live on land” (14-15). Our longing for the sea is thus a primal longing to return to an early stage in our development, both as individuals and as a species. In the closing paragraphs of The Sea Around Us — where the world mystery appears three times in three short paragraphs — Carson reiterates her central tenet of faith: “Even with all our modern instruments for probing and sampling the deep ocean,” she writes, “no one can now say that we shall ever resolve the last, the ultimate mysteries of the sea” (212).

The final book in Carson’s sea trilogy, The Edge of the Sea, is a study of shoreline. Superficially it resembles Under the Sea-Wind with drawings of shore creatures so dynamic and lifelike they seem to scuttle and dart around the page. But the style has something of a field guide flavor, with frequent first person accounts of Carson’s own explorations and adventures. Here we find familiar themes of enchantment and mystery that are bound up with nature’s true reality. Carson also evokes childhood and childlike associations — fairy creatures and children’s stories. Her description of a rockweed cluster recalls one of her favorite authors: “It is a fantastic jungle, mad in a Lewis Carroll sort of way” (75). She stresses the ephemeral and mutable quality of life at the sea’s edge, in contrast to the stability and constancy of the open seas. Journeying into what she terms a “magical zone” of low water at spring tide, she uncovers a “fairy cave” full of creatures who seem too fragile and ethereal to live. “In this enchanted place on the threshold of the sea,” she writes, “the realities that possessed my mind were far from those of the land world I had left an hour before” (5). Perhaps nowhere in Carson’s writing is the association of mystery and magic with the unveling of elemental and essential realities more pronounced than in The Edge of the Sea. She recounts a particular night time excursion where, flashlight in hand, her discovery of a single ghost crab has the force of a revelation: “I have seen hundreds of ghost crabs in other settings,” she writes, “but suddenly I was filled with the odd sensation that for the first time I knew the creature in its own world — that I understood, as never before, the essence of its being” (5; emphasis mine). Here too we encounter her conviction that mystery continually outstrips scientific knowledge: Carson writes of a certain “elusiveness of meaning” that “haunts us, that sends us back again and again into the natural world where the key to the riddle is hidden” (7). In the spirit of nature-study, The Edge of the Sea discourages preoccupation with mere facts and names. The book’s preface makes this point clearly: “To understand the shore it is not enough to catalogue its life . . . to pick up an empty shell and say, ‘This is a mussel,’ or ‘That is an angel wing.’” Carson does provide an appendix for those who, as she puts it — with perhaps the slightest note of derision — “like to pigeonhole their findings neatly in the classification schemes the human mind has devised” (xiv). These classifications may tell us more about the human mind than about the realities of nature as Carson understands them. To apprehend and appreciate science is not necessarily to apprehend and appreciate nature.

With Silent Spring I believe, Carson was forced to rethink this portrayal of mystery, enchantment, and reality — and to reconsider the importance of factual knowledge in educating readers. With her decision to write this book came a dawning recognition that efforts to draw the public into a world of natural enchantment were not sufficient to motivate an immediate response to the dangers of pesticides. At the same time, Carson’s own beliefs about the possibility that humans could alter and destroy nature — including the seemingly inviolate seas — were undergoing dramatic change. By the late 1950s, Carson no longer held that humans were so small and insignificant compared to the vast, eternal forces of nature that they could not inflict irreparable damage. Humans were dominating not only earth but space as
well. "It was pleasant to believe," she wrote to a close friend, "that much of Nature was forever beyond the tampering reach of man ... Of course, in pre-Sputnik days, it was easy to dismiss so much as science-fiction fantasies. Now ... man seems actually likely to take into his hands — ill-prepared as he is psychologically — many of the functions of 'God'" (qtd. in Freeman 249). To be sure, she maintained throughout her writing that humility and wonder were wholesome and necessary, but the urgency of her task in Silent Spring forced her to give prominent place to facts — many of them quite alarming — and to expose what she saw as new and questionable forms of enchantment.

**Silent Spring**: From Enchanted Forest to Poisonous Forest

The least fable-like of all Carson's works, Silent Spring nevertheless begins like a child's fairy tale, with its once-upon-a-time opening. "There was once a town in the heart of America," Carson writes in her opening "Fable for Tomorrow," "where all life seemed to live in harmony with its surroundings." But it quickly becomes apparent that this fable is not meant to enchant the reader but to jolt him out of enchantment. It is a cautionary tale depicting an "imagined tragedy" on the verge of becoming a "stark reality" — a town in which "some evil spell," some mysterious malady, "had settled on the community," silencing and stifling life. The evil-doers, it turns out, are not witches, supernatural agents, or even human enemies. The truth is simpler and more terrifying: "The people had done it themselves" (2).

Fables often involve animal characters and present general, edifying truths rather than factual accounts. Presumably, readers of fables (particularly adults) encounter the text with the understanding that it is not based in fact. Yet Carson concludes her fable with an abrupt shift to reality: She inserts what seems an unnecessary disclaimer — given her clear identification of the story as a fable — that this is an *imagined* tale, that no single town has suffered all of the misfortunes she describes. The fabled town is a composite sketch of actual disasters occurring in communities all over America, she explains, and so it is not quite factual but neither is it a fabrication. It is the sort of "science-fiction fantasy" that Carson now fears is possible.

In the more than forty-five years since its publication, Silent Spring has been praised repeatedly for its literary flair, its moving and effective blend of science and poetry, fact and emotion. But in fact, the blunt and sometimes strident rhetoric of Silent Spring presents a stark contrast to the sublety and graceful eloquence of Carson's other writing. She all but abandons her previous appeals to childlike wonder and mystery or primal longing. Instead, Silent Spring urges greater maturity and accountability: We need to wake up, to grow up, to evolve. We must break the spell and curb our primal urges. She castigates the atavistic, caveman-like mindset that unleashed an indiscriminate chemical barrage on the natural world. She indulges in a bit of sarcasm, mocking the missionary zeal of the weed control expert bent on total eradication. "We would seem deplorably weak that we can tolerate the sight of such 'weeds,' that we do not rejoice in their eradication, that we are not filled with exultation that man has once more triumphed over miscreant nature" (72). This is Carson angry.

Silent Spring exposes a kind of infantilized state or drugged stupor into which the public has fallen: "the public ... is fed little tranquilizing pills of half truth," she claims. "We urgently need an end to ... the sugar coating of unpalatable facts" (13). She chastises citizens who place childish trust in authority, whether the authority of the chemical engineer or the government that condones mass spraying campaigns. She is aware too that, once published, her exposé will likely bring on even heavier "doses of tranquilizing information, designed to lull the public into the sleep from which Silent Spring so rudely awakened it" (Lost Woods 203). A diet of facts is now deemed salutary, for facts are the wake-up call, the antidote for our tranquilized and "mesmerized state" (Silent Spring 12).

Readers did indeed find the book sobering and alarming, not just because of what Carson said but because of the particular way that she said it. For example, Carson lays bare the workings of the food chain and the bioaccumulation and biomagnification of toxins in human and nonhuman bodies. The facts, she suggests, are clear and straightforward. Yet Carson does not always present these facts in an utterly straightforward fashion. This is not to say that she distorts or exaggerates. But she often cloaks her facts in myths and fairy tales, as in her opening fable; at times she even personifies certain chemicals, and attributes to them...
personalities or motive, much as she did for the sea creatures in her earliest writings. Such literary devices hold the reader’s interest and may make the facts more memorable and meaningful. But they also have the effect of heightening and intensifying the sense of danger and fear. In *Silent Spring*, mystery, enchantment, and the unknown carry sinister connotations and consistently signal danger far more than wonder. Her descriptions imply that the chemical realm is a place of dark magic, where threats to life remain largely invisible to us. Chemicals in our environment “pass mysteriously by underground streams” and emerge, through “an alchemy of air and sunlight” (6), in new, dangerous and “devious” forms (33). Carson describes the chemical aldrin as a “somewhat mysterious substance” that acts as “alter ego” to dieldrin, to which it is linked by “alchemistic transformations” (26). In the “unseen world in our bodies, the same chemicals bring disease and death in ways we do not understand and cannot control” (189). The products of these new forms of sorcery — chemical pesticides — are “elixirs” not of life but of death.

References to children’s stories, fairy tales, and myths are relatively sparse in *Silent Spring*, but they nearly always foretell doom or expose disastrous folly. In making the rather dry scientific observation that “the toxicity of an organic phosphate can be increased by a second agent that is not necessarily an insecticide,” Carson suddenly parallels with “the sorceress Medea” from Greek mythology. In a jealous rage, Medea creates a robe with magical properties that brings violent death to its wearers, including her own children. “This death-by-indirection,” Carson warns, “now finds its counterpart in what are known as ‘systemic insecticides,’ chemical that can ‘convert plants or animals into a sort of Medea’s robe by making them actually poisonous’ (32). This “weird world” of insecticides “surpass[es] the imaginings of the brothers Grimm . . . it is a world where the enchanted forest of the fairy tales has become the poisonous forest in which an insect that chews a leaf or sucks the sap of a plant is doomed” (33). Carson draws on a child’s nursery rhyme to describe the step-by-step process by which poisons move up and accumulate in the food chain, consumed by successive organisms: “It was a house-that-Jack-built sequence,” she writes, “in which the large carnivores had eaten the smaller carnivores, that had eaten the herbivores, that had eaten the plankton, that had absorbed the poison from the water” (48).

In *Silent Spring*, allusions to nature’s mysteries serve to underscore dangerous unpredictability rather than the power of nature to allure and enthral. What makes these forms of enchantment unwholesome is that they are, at root, enchantment with ourselves, with human creations. The mysteries that now confront us are mysteries of our own making, not the eternal mysteries — and verities — of nature. Quoting Schweitzer once more, Carson laments that we can hardly recognize the “devils” of our own creation. To suggest that pesticides are diabolical might seem excessive, but the positive press these chemicals were receiving at the time was equally hyperbolic. In advertising campaigns and newsreels, pesticides were lauded as nothing short of magical and miraculous: DDT was a “wonder chemical” that “made the dream of a pest-free world realistic” (Russell 170). If DDT was a thing of wonder, Carson would recast it as an object of fear, reclaiming wonder for nature. In her mind, these chemicals and the claims made on their behalf were symbolic of human arrogance and hubris, and excessive faith in scientific and government authority was a kind of idolatry. Humans now threatened to take center stage and had set themselves on a path of destruction.

**Silent Spring and the Apocalyptic Imagination**

As noted above, *Silent Spring* has often been characterized as an apocalyptic text with vaguely religious overtones, both in scholarly discourse and in the public imagination. Yet of all Carson’s works, *Silent Spring* least fits the mold of nature religion and it makes the fewest references to ultimate realities and essential mysteries of life. Numerous examples, some of them quite recent and some nearly a half century old, illustrate these apocalyptic associations. The front cover of Frederick Buell’s *From Apocalypse to Way of Life: Environmental Crisis in the American Century* bears a photograph of a DDT spray truck. The text takes *Silent Spring* as its point of departure. “In 1962, Rachel Carson warned of ecological disaster in progress . . . rais[ing] the specter of imminent human-made environmental crisis . . .” (Buell xi). Carson’s “small-town-American ‘silent spring,’” Buell writes, has now morphed into an ominously global environmental crisis, and a veritable “tsunami of catastrophe rhetoric” has followed in her
book's wake (xiii). The association of Carson with environmental disaster and doomsday rhetoric is often made without regard to the specific content of the predictions. For example, prominent reviews of Alan Weisman's recent nonfiction eco-thriller titled The World Without Us — a scientifically informed thought experiment that envisions a future world where humans are extinct and insect and animal species take over the planet — begin with references to Silent Spring, though Carson's concern was arguably the opposite, that is, that humans would take over and leave no animals or insects.6

Carson's use of fables and myths has captured readers' imaginations and shaped the legacy of Silent Spring, for better and for worse. References to the book in the popular media have always invoked not only apocalyptic motifs, but also children's tales, and dark, supernatural, and diabolical forces. A cartoon that appeared in the Washington Post a year after Silent Spring's publication, shows a witch dressed in robes and a pointed hat gleefully offering a young maiden an enormous, shiny apple; strapped onto the witch's back is a tank with skull and crossbones that reads “uncontrolled pesticides.” A disturbing cartoon appearing in Punch in 1964 depicts a skull-faced grim reaper figure who scatters poisons on the ground from a satchel labeled “untested pesticides.” In his wake numerous birds and animals lie dead or dying on a thoroughly blackened and desolate landscape. A somewhat more humorously morbid Punch cartoon shows two men gazing down at a dead dog. Echoing Carson's description of bioaccumulation couched within a nursery rhyme, one explains to the other, “This is the dog that bit the cat that killed the rat that ate the malt that came from the grain that Jack sprayed.”7

The powerful industry that Silent Spring directly attacked — the chemical industry — was particularly eager to use the book's mythical allusions and fictional elements to undermine its credibility. One of the best known and most remarkable examples of an apocalyptic rejoinder to Silent Spring is a publication distributed by the Monsanto Corporation in 1962 titled “The Desolate Year.” Monsanto sent some five thousand sets of galley sheets of “The Desolate Year” to newspaper editors and book reviewers (Graham 73). It is a direct parody of Carson's opening fable in which the townspeople gradually awaken to the bewildering absence of birds and other familiar creatures. “There was a strange stillness,” Carson writes. “The birds, for example — where had they gone?” (Silent Spring 2). In a reversal of this scenario, “The Desolate Year” ominously depicts the devastation that would ensue in a single year without the use of pesticides, with nature “left to seek her own balance.”

Quietly, then, the desolate year began. Not many people seemed aware of danger. After all, in the winter, hardly a housefly was about. What could a few bugs do, here and there? How could the good life depend upon something so seemingly trivial as bug spray? Where were the bugs anyway? The bugs were everywhere. Unseen, unheard. Unbelievably universal. ... Things got much worse that year. For now spring came to America — an extremely lively spring. (4-5).

“The Desolate Year” mirrors Carson's fable, right down to the disclaimer (of sorts) that abruptly follows the tale. But according to this disclaimer, the events “are not built of fantasy. They are true ... All of them, fortunately, did not take place in a single year ... But all the major events of the ‘desolate year’ have actually occurred” (7).

A recent internet piece by Lisa Makson more forcefully and less creatively counters Carson's apocalyptic vision with a frightening vision of its own. “Rachel Carson's Ecological Genocide” identifies Carson as the primary figure behind a “pandemic ... slaughtering millions, mostly children and pregnant women.” Makson charges that a “Malthusian” agenda drives the anti-DDT campaign; this should not surprise us, given that “like Silent Spring, Thomas Robert Malthus’ Principles of Population paints a horrific doomsday scenario.” This essay has been picked up by numerous websites, some citing it in support of the claim that Carson belongs in the company of “Hitler, Stalin, and Pol Pot.”8 A more recent weblog, posted on Carson's birthday, likens her to that evil trio, as well as “Saddam Hussein and Idi Amin,” but reserves the top prize for “the little lady who wrote fiction as science and murdered millions” (Hitz).

Rather than generate their own apocalyptic and genocidal scenarios in response to Silent Spring, some of Carson’s critics cast the book, and environmentalism as a whole, as a religious (or quasi-religious or pseudo-religious) movement. Dismissal of the book as religious — where religious typically means not scientific — is also a familiar old refrain but one that now finds a new generation of supporters. Early critics of Carson portrayed her as
a pantheist, or a mystical priestess, devoted to the “cult of the balance of nature” (Graham 66). Interestingly, many of Carson’s latter-day critics (and DDT defenders) are heavily invested in denying the evidence of climate change — merely another cherished apocalypse of crypto-religious environmentalists, according to those who dispute the evidence. A widely circulated speech by climate change denier and novelist Michael Crichton posits climate change as mere apocalyptic religion. Crichton traces the trend of mixing religious narratives with environmental alarmism back to the campaign against DDT. “The greatest challenge facing mankind,” he asserts, is not climate change but “the challenge of distinguishing reality from fantasy, truth from propaganda.” Some critics name Carson as the environmental movement’s most notoriously misguided prophet. “The apocalyptic is the major fulcrum of environmentalism,” writes J. R. Dunn. Silent Spring “represents the first environmentalist scripture — nothing other than a modern book of Revelations [sic].” (Pollution itself, he notes with great erudition, “bears many religious connotations.”) Carson’s work “set the pattern for all the environmental apocalypses to come” (Dunn 2007).

In the midst of attacks such as these, a cover story on malaria appeared in National Geographic, a portion of which relies upon religious language and imagery in discussing Carson and DDT. Judging from the number of links to this article on internet sites seeking to discredit Carson, it also left many readers with the impression that this highly respected magazine was officially denouncing her findings, though apparently this was not the intention of the author, Michael Finkel. Attempting to convey a sense of malaria as a “confounding disease” — a disease that appears to overturn accepted notions of good and evil, and to undermine our basic environmental and humanitarian values — Finkel states: “Curing almost all malaria cases can be worse than curing none. Destroying fragile wetlands, in the world of malaria, is a noble act. Rachel Carson, the environmental icon, is a villain; her three-letter devil, DDT, is a savior.”

One of the most vexing critiques of Carson and Silent Spring is a New York Times editorial by science writer John Tierney that assesses the impact of Silent Spring at the centennial of Carson’s birth.Tierney draws on associations of Carson’s work with apocalypse, with religious hopes and fears, as a way of discrediting her research — a rather worn tactic, as we have seen. He seizes upon Carson’s fictional elements and uses them to cast doubt on her credentials, as have many of her past critics.10 Tierney refers to Silent Spring as “Ms. Carson’s apocalypse in Eden.” Carson’s false move, her most “fundamental mistake” in Silent Spring is evident in her opening “Fable for Tomorrow,” he contends. This made-up story “set the tone” for what Tierney characterizes as the book’s “hodgepodge of science and junk science.” The book depicted pesticides as evil and nature as good, Tierney claims, and Carson’s fable similarly reveals her misguided belief in nature as “a Disneyfied version of Eden” corrupted only by the introduction of the serpent DDT.11 Carson’s green “disciples,” he concludes, carry on this manichean tradition and “still divide the world into good and bad chemicals.”

Leaving aside for the moment Tierney’s claims about Carson’s apocalyptic vision, it is worth pointing out that no one who has read Silent Spring through to the end, as opposed to dwelling on the brief opening fable, could come away with the honest impression that Carson viewed nature as unambiguously good or benign. Carson never called for an end to all chemical control of our environment; moreover, Silent Spring is the work of a thorough-going Darwinist who saw that nature’s constant war between the “strong” and the “weak” made our interference with chemical pesticides particularly risky: “Darwin himself could scarcely have found a better example of the operation of natural selection than is provided by the way the mechanism of resistance operates” (Silent Spring 273). Carson’s appreciation of the “sometimes terrible intensity” of natural processes like predation — the “relentlessly pressing force by which nature controls her own” — led her to advocate the use of “biological” controls of insects or what we would today call integrated pest management. These she advocated alongside (and not in place of) more moderate chemical controls. The task for scientists is to derive “weapons from the insect’s own life processes” rather than resorting always to chemicals (285). It is simply false to claim, as Tierney does, that Carson’s nature, or her view of the human-nature relationship, was a benign Disney caricature.

But more to the point: What exactly does Tierney mean when he claims that in opening Silent Spring with a fable, Carson made a fundamental mistake? Is he charging that the portrait of life she
paints in the fable is factually mistaken? Is he perhaps unaware that fables are not intended as fact? Could anyone believe that Carson meant her fable to be taken as reality by her readers? The answers to these questions turn out to be surprisingly complicated. Perhaps Carson’s creative decision to open Silent Spring with an imaginary tale really was a mistake, though not quite for the reasons that Tierney seems to suggest, that is, not because it exposes the false reality to which Carson subscribed, the faulty foundation upon which the rest of the book was constructed. Rather, Carson’s use of this fable, like her occasional use of fairy tale imagery and similar literary devices, opened the door to a certain kind of attack on her work and credentials, particularly by scientifically-minded readers who were confounded by a text that blended fable with fact. Carson’s arrangement of particular elements in the fable, her choice of words there and elsewhere in Silent Spring, also created a profound sense of fear among some readers. Carson, who had an abiding faith in the intelligence of her audience, may also have simply overestimated the ability of some readers to sift through the mix of genres that characterizes Silent Spring. Her use of the fable, in other words, may have been a tactical error.

**Fiction, Fact, and Fear**

In this moment, fact and truth become separated and commence to wander like twins in a fairy tale, waiting to be reunited by that special someone who possesses the secret of telling them apart.

— Ann-Marie MacDonald, *Fall on Your Knees*

It appears that Carson was aware of the potential dangers of opening the book with a fable, given her somewhat awkward disclaimer regarding the veracity of the tale. Yet despite her disclaimer — or perhaps because if it — some readers were (and are) confused and upset by her fable; they saw it as something dishonest, a “scary hoax” (Lear 431). Others interpreted Carson’s use of the fable and similar stylistic elements, as well as her popular success as a writer, as signaling a lack of credibility, evidence that she was first and foremost a storyteller (Smith). It is as though by beginning the book with a fable, she was effectively announcing at the outset: “What follows is based on an untrue story.” Carson intended to make the book more appealing to non-specialists who might be intimidated, or simply bored by a work on chlorinated hydrocarbons. She may have successfully en-
ticed many general readers, but she alienated some scientists. *Audubon Magazine* staff biologist Roland Clement recalls that many scientists were “turned off” by the opening fable. As “literal-minded readers, with no background in literature,” Clement explains, these scientists did not understand that “an allegory is not a prediction” (qtd. in Graham 72). Carson’s biographer makes a similar observation that scientists “did not understand what Carson was trying to do or what the allegory was about. They were too literal and unimaginative to understand it” (Lear 573 n.7). Even scientists who more or less accepted the facts as Carson presented them were “intellectually capsized by the book’s opening chapter” (Graham 72). And yet, by and large, scientists are not an unimaginative or incurious lot. Scientific theorizing and modeling is a creative enterprise that frequently involves thinking metaphorically and analogically, and many scientists are themselves readers and even writers of science fiction and fantasy. Why should they have been capsized by a fable?

The “literalist” response to Silent Spring highlighted in Clement’s remarks points to a problem frequently encountered by writers of science fiction. The problem stems from “a tendency of readers to regard science fiction narratives as a predictive form of prophecy . . . the science fiction writer is supposed to take a trend or phenomenon of the here-and-now, purify and intensify it for dramatic effect, and extend it” — much like a prediction — “into the future” (Killingsworth and Palmer 179-80). An obsessively meticulous writer, Carson struggled to strike the right tone, to get readers to take the fable seriously but not literally (nor as mere fiction). In very early drafts of the fable, the story was narrated by a young man returning home after a long absence; the town itself was given a name, “Green Meadows.”  

12 Carson radically altered this novelized version, eventually making herself the ostensible narrator, removing the town’s name, and presenting it as a town that existed nowhere and thus might exist anywhere. Carson’s later revisions included the insertion of a space between the fable itself and the disclaimer wherein she explains that while the town is not real, the threat is. “With this move,” one reader observes, “Carson comes full circle, separating fiction and fact once again . . . . The myth is spatially liberated to stand on its own” (Oravec 52). One very late revision suggests that Carson lingered anxiously over the word *imaginary* in the disclaimer por-
tion. First she removed “imaginary” from the sentence describing the town and its tragedies; later she inserted imagined where imaginary had been, hoping, perhaps, to mitigate the impression of her tale as (mere) make-believe. The final version reads: “This imagined tragedy may easily become a stark reality we all may know” (Silent Spring 3). Carson introduces these small changes, Oravec notes, “as if wishing to retain the idea that the imaginary is not necessarily unreal . . . . One gets the impression that she would still like to use the word imaginary but wants to avoid any misreading (54). Carson’s early writings on the sea suggest that, indeed, she did believe the real and the imaginary could be one, that through imagination — perhaps only through imagination — one could enter into the real world, the essential, lived realities of other lifeforms. Carson had been doing this all her life.

In the late 1950s and early 1960s, public anxieties about nuclear fallout were running high, and Carson drew parallels, some explicit, some subtle, between pesticides and radioactive materials (Lutts). One such parallel occurs in the fable. There she describes a mysterious white powder — presumably pesticide residue, though it is not identified — that weeks before “had fallen like snow upon the roofs and lawns, the fields and streams.” An early draft of the fable stated outright that the powder reminded townspeople of fallout from bomb tests (Lutts 35). Carson removed the direct references to nuclear fallout in the final version but let the sinister white powder remain. Even in the absence of explicit connections to fallout, the fable suggests something almost globally apocalyptic. Taken as a whole, her revisions — made perhaps with the goal of reaching a wider audience — also had the effect of widening the scope of catastrophe from one particular, and potentially negligible, instance of a poisoned town to a universal crisis, a “collective nightmare” descending upon all towns (Oravec 54). In this sense, the fable never was a narrative of localized crisis — a small-town-American ‘silent spring,’ as Buell contends—but contained within it a vision of global disaster.

For all of these reasons, Silent Spring continues to inspire fear — and anger. Yet the book also contains a distinctly hopeful message, an alternative vision of the future. Carson insists that humans can attain a level of maturity and wisdom that will allow us to cooperate with natural processes and enable us to live, if not exactly peaceably with nature, then at least far less destructively. The necessary change begins with the average citizen whom Carson seeks to empower. It seems plausible to suggest that at least two competing narratives emerge from Silent Spring as a whole. One can be located in the fable itself; another is discernible in the overall thrust of Silent Spring but particularly the final chapter. The fable sets the tone for a classic tale of human progress “inverted,” hubris thwarted: “The human attempt to control nature, to improve upon nature, leads finally to the death of nature” (Killingsworth and Palmer 178). In this respect, the storyline of the fable parallels the modern form of apocalypse which culminates in the end — completely — of humanity and perhaps the earth itself. But in attempting to draw from the fable a warning — and thus avert the apocalypse — Silent Spring points to a more “millenialist” notion of the end of the world which culminates in a “new kingdom,” something to be “accepted as inevitable, a sign of the new age, something hopeful, to be anticipated with joy” (178). Carson’s belief that the disaster can be averted, and her plans for doing so, are spelled out in the final chapter of the book, appropriately titled “The Other Road.” There Carson celebrates the new science of ecology, a science based upon interconnection in nature, and the promise of biological pest control as the paths to salvation. But Carson’s heralding of a new era is not anticipated, not foreshadowed, in the fable. The negative message of the opening may have effectively eclipsed the hopeful ending, leaving readers merely stunned or depressed. This too suggests that Carson may have created more alarm than she intended by relying on “a rhetorical structure that condemned many of her best and most positive points to relative neglect” (Killingsworth and Palmer 193). It is likely that many readers, past and present, never make it to the last chapter.

From Wonder to Fear — and Back: Carson’s Legacy

No, I myself never thought the ugly facts would dominate, and I hope they don’t. The beauty of the living world I was trying to save has always been uppermost in my mind.


Nearly half a century after Carson’s death, her legacy remains a complex and highly contested one. Perhaps one of the most interesting aspects of this legacy is how strongly Carson is associated with two emotions — fear and wonder — that, while sharing
certain features, are often characterized as opposite to one another. Carson is frequently celebrated as the exemplar of a wonder-based nature religion (Fuller, “Spirituality in the Flesh”), but as we have seen, she is also the environmental figure most often invoked in the context of apocalyptic fears and intimations of doom regarding the planet’s future. The alleged apocalyptic dimensions of Carson’s work — her legacy of fear — needs to be understood and evaluated not only in the context of the message of Silent Spring as a whole but in the context of Carson’s entire body of work. At present, the strong association of Carson with fear threatens to eclipse what is arguably the dominant theme in her work: wonder and enchantment as a moral response to nature. As I have suggested throughout, Carson’s use of terms such as mystery, wonder, and enchantment underwent a radical change as she approached the subject matter of Silent Spring. But differently, Silent Spring was a critique of a particular type of enchantment, a dangerous variety characterized by awe at our own powers and an almost delusional belief in technological advance as the only, or only important, mark of human progress.

Carson, who was battling breast cancer, did not live long enough after the publication of Silent Spring to give us her last word on the place of wonder in the midst of environmental crisis. The Sense of Wonder, published posthumously, is the only “final” word we have, though it was written before Silent Spring. It offers a glimpse into her understanding of how wonder generates ethical orientations, but she was never able to develop it into a book-length treatment as she had long hoped to do.  Nevertheless, the writing we do have from Carson suggests that she understood wonder and enchantment with nature to serve as a corrective to dangerous and delusional forms of enchantment with ourselves and our creations.

However, the connection between a sense of wonder and the development of an ethical stance (generosity, humility, compassion) is precarious and fragile. As a motivator, fear generally works more quickly and efficiently, though there are obvious downsides to cultivating fear as the primary or sole source of ethical action, whether in the context of environmental crisis or other contexts. In what follows, I turn to a discussion of fear and wonder in order to suggest the role they play in environmentalism. My contention is that the environmental movement needs both of these responses — the narrowed perception of fear and the expansive vision of wonder. Carson, I think, understood this.

In studies of the human emotions, scientists working in areas such as psychology and cognitive neuroscience classify fear as one of the most basic human emotions. Basic, in this context, means an emotion that is universal and has a biological basis that is evolutionarily ancient (involving areas of the brain that are least affected by cultural influences and learning). Fear is often understood — both in scientific literature and personal and anecdotal experience — as an emotion that restricts or narrows one’s range of perception, focusing attention on the source of the perceived threat. From a biological standpoint, this narrowed focus may be adaptive because it allows one to tune out extraneous information and direct one’s energy toward responding to the perceived threat. Fear motivates behavior that helps the individual to escape the threatening situation. “Fear induced responses are likely to include modes of cultural discourse and communication characterized by tunnel vision, restricted cue utilization, and keen attention to the threatening agent” (Fuller, “Spirituality in the Flesh” 33).

In contrast to fear, wonder is a far more complex and even moral emotion that connects us to a larger network of beings and expands our scope of cognition and perception. Wonder often entails an element of surprise over something novel or unknown, and is often followed by a desire to know more about it. In this sense, it is held by many theorists to be a starting point for knowledge and science (Hepburn 131). Wonder is also a starting point for ethical engagement, or it can be. A key feature of wonder, some theorists maintain, is its ability to move us away from a self-protective stance toward a greater openness and vulnerability to others. The “other-acknowledging” qualities of wonder, and its “non-exploitative, non-utilitarian” dimensions suggest its affinity with compassion, generosity, and what Hepburn terms a certain gentleness — a “concern not to blunder into a damaging manipulation of another” (145-146). From this wondering appreciation of valuing others, it is “a short step to humility” (146).

Yet other accounts of wonder accentuate its contemplative qualities, its inducement of a certain type of passivity found in a transfixed or stunned state. Some philosophers have even regarded wonder as utterly unimportant, at best a nuisance, be-
cause of its ability to "stall" the mind (Fisher 46). As Jane Bennett argues in *The Enchantment of Modern Life*, wonder and enchantment begin with "the step-back immobilization of surprise" (104). One hopes, and Bennett believes, that immobilization eventually gives way to active engagement — ethical and intellectual — but she acknowledges a "precarious concatenation" that obtains between wonder and enchantment on the one hand and energized moral engagement on the other: "it requires a delicate balance of forces, a set of fortuitous circumstances, and some practice in order to develop the somatic habits" that are conducive to these states. "One wonders," Bennett remarks, "how it ever occurs" (105).

The lack of utilitarian and self-protective motives in wonder, while in one sense salutary, is bound up with its passive dimensions. While both wonder and fear can motivate a search for the source of the emotion — an explanation or cause — wonder does so in "ways that are not directly connected with our immediate physical survival" (Fuller, "Spirituality in the Flesh" 40). Fear produces a more short-term, focused reaction to its source, while wonder may sustain a long-term and often creative, open-ended response characterized by "receptivity rather than immediate utilitarian action" (39). All of these features suggest that wonder, or a general orientation to the world as a sensibility (as opposed to wonder at this particular surprising object), takes time and effort to cultivate and does not always or easily translate into action. As Bennett notes, there is no guarantee that the translation will happen at all.

Of course, fear and wonder are also emotions that play a significant role in religious constructions of our world. Infused with religious meaning, fear can lead to interpreting the world in apocalyptic ways. Apocalyptic literature, such as the book of Revelation, uses repetitive plots and frightening images of supernatural creatures to heighten fear and the sense of imminent danger, while at the same time eliciting solidarity from the threatened group who perceives a common enemy (Fuller, "Spirituality in the Flesh"). Thus fear can turn not only the individual but the focus of entire communities inward. Wonder, on the other hand, draws us out of our immediate context or social group and allows us to sense our place in something much vaster or more enduring. For this reason, wonder too is frequently con-

strued as a "religious" emotion, and yet fear and wonder are in some respects the antithesis of one another. To put it in the simplest terms, wonder is clearly central to the broad category of nature religion or nature spirituality. Fear lies at the heart of apocalyptic religions, and, of course, sometimes the two expressions of religion combine.

It is startling to think that Rachel Carson is so commonly associated with these two rather different responses to our world. Fuller goes as far as to present Carson as one of the key figures (alongside John Muir or Henry David Thoreau) of nature religion in America. Carson showed a "pronounced sensibility for more-than-physical reaches of the universe" ("Spirituality in the Flesh" 44), and she believed that "moral conduct flows naturally from emotions producing empathy and identification" such as are generated by wonder (42). More specifically, in casting Carson as a representative of nature religion, Fuller means that her sense of wonder generated an ethics of aesthetic appreciation and responsiveness to the world around her, rather than an ethics of obedience to moral authority or ancient scripture (43). A strong sense of empathy and identification with other lifeforms — central virtues of the nature-study movement — was a characteristic of her "unchurched spirituality" (42). Nature, as Carson experienced it and encouraged others to experience it, "jars us out of everyday utilitarian rationality and elicits emotions that set us in search of meanings that somehow lie just beyond sensory appearances" (43).

Fuller's characterization of Carson's sense of wonder is essentially accurate and, in many ways, refreshing: Few scholars of religion have paid attention to Carson's work, particularly her work prior to *Silent Spring* (notwithstanding the quasi-religious academic drivel that her critics claim has sprung up around her). I would emphasize that Carson's sense of wonder and enchantment is distinct from the sort of wonder lauded by some scientists. Wonder in Carson's writing is associated far more with ultimate meaning than with current knowledge. It is that "elusiveness" of meaning, combined with what Carson sees as the inescapable reality of mystery, that enhances and perpetuates the sense of wonder. Researchers of the emotions who characterize wonder as a response linked with mystery (or spirituality) have something like this in mind. In Carson's words, wonder entails "a
recognition of something beyond the boundaries of human existence” *(The Sense of Wonder* 100).

I have indicated my general concurrence with Fuller’s account of Carson’s sense of wonder and her purposes as a nature writer to transfix and transport her readers. Yet I also think it was precisely this approach that she jettisoned when she wrote *Silent Spring*. Fuller quotes extensively from Carson’s work in order to illustrate the expansive sense of wonder that pervades her writing. But interestingly, his examples are culled (with one exception) from her writings other than *Silent Spring*. Wonder, after all, was not a prominent theme in *Silent Spring*. That Carson was undergoing cancer treatment at the time she was writing *Silent Spring* — and constantly attempting to get the truth about her condition from her doctors — is far from irrelevant. She was in full-blown fact-fearing mode, convinced that it is better to know even unpleasant and frightening facts than not to know. Put differently, she was focused on threats to life — her own imperiled life, and life generally — and she was growing accustomed to processing very bad news about her health and in her research on pesticides. Despite what I think is her keen appreciation of human nature, she may have overestimated the ability, or the willingness, of her readers to absorb frightening facts as readily as she appeared to. Certainly she saw parallels between the way that some medical experts dodged her requests for information and the ways in which scientific and government authorities were misleading the public about pesticides. In part, then, the different tone of *Silent Spring* reflects Carson’s personal shift away from preoccupation with the mysteries of nature toward factual realities to which, she maintained, experts should grant us full access.

Writers familiar with Carson’s work, particularly nature writers, noted the abrupt change in Carson’s style and agenda. As Loren Eiseley remarked of *Silent Spring*, “If her present book does not possess the beauty of *The Sea Around Us*, it is because she has courageously chosen, at the height of her powers, to educate us upon a sad, an unpleasant, an un-beautiful topic, and one of our own making” (qtd. in Graham 73-4). Her goal was a more pragmatic, pedagogical and urgent one. If a sense of wonder and enchantment takes years to instill and cultivate, she needed a different, more efficient tactic. If wonder promotes passivity and a trustful sense of belonging, it was precisely these attitudes, whatever their source, that Carson needed to challenge. My intention is not to disparage wonder, nor to claim that Carson gave up on it. Her plans to expand her book on this subject indicate that she continued to view the sense of wonder as a crucially important sensibility in the modern world. Yet in certain cases, creating a sense of fear — a concern with immediate physical survival — is absolutely necessary. Carson never relinquished her belief that humans are connected to a larger, wondrous network of beings — even *Silent Spring* is premised on this notion — but she needed to evoke alarm, a strong reaction to a perceived threat. Even among readers who shared Carson’s sense of wonder, she would have to activate precisely the sort of immediate, focused, utilitarian rationality — perhaps a self-protective response — that wonder seems often to suspend.

*Silent Spring*’s sparse but terrifying imagery — sorcery and dark fairy tales, the poisoned forest and, most of all, the eerily silenced town of her fable — plays a role akin to the images of mythical beasts in the Book of Revelation. These elements intensify the perception of imminent threat and add a dark hue to the book as a whole. It is telling that these elements so often reappear — are reflected and refracted back — in cartoons, parodies, and other popular representations of *Silent Spring* and its themes. *Silent Spring* prompted the reaction Carson hoped it would, and then some. It led to sweeping environmental legislation and creation of agencies such as the EPA; it raised public awareness of toxins in the environment and emboldened citizens to defend their own environmental rights as well as the rights of nonhumans.

**At Death’s Door: The Future of Environmentalism?**

The environmental tale I have just told — namely, that fear was on the whole an effective catalyst of the environmental movement and that Carson’s work prompted meaningful environmental change — has itself been challenged as mere “fable” by some environmentalists (Nordhaus and Shellenberger 22). In 2004 Ted Nordhaus and Michael Shellenberger, young men who had spent years toiling in the trenches as environmental consultants and strategists, dropped a bombshell at a meeting of the Environmental Grantmakers Association when they pronounced the environmental movement dead. Their widely circulated paper, “The Death of Environmentalism,” argued that environmental-
Nordhaus and Shellenberger recommend to motivate ethical action for nature is a sense of wonder and enchantment. Granted, their narrative seeks to reclaim and celebrate hubris — “those who fear change always declare challenges to their authority to be hubris” (271) — and it celebrates all manner of human achievements that some environmentalists see as problematic, including our impressive ability to expand our population to its current numbers. Their vision of the future also embraces the central thesis of Jane Bennett’s work. For Bennett, as I noted previously, enchantment “entails a state of wonder” and may involve “a fleeting return to childlike excitement about life” (5). Nordhaus and Shellenberger especially applaud Bennett’s resistance to seeing our modern world as disenchanted, benefit of “mystery, ineffability, magic, and connectedness” (153).

While I have doubts about the prospect of successfully combining a wholesome form of enchantment and wonder with such an enthusiastic and uncritical embrace of hubris, it is clear that Nordhaus and Shellenberger have hit upon something important.22 They simply fail to realize that essential elements of the attitude they celebrate have previously been described and celebrated by nature writers and environmentalists for decades — most notably by Rachel Carson, whose work they casually denigrate. If it is to succeed, the environmental movement may well require both fear and wonder, “nightmares” as well as “dreams,” to use the language of Nordhaus and Shellenberger — not the overwhelming fear that shuts us down, but the sort that can galvanize and focus our actions. To be sure, sustained and unmitigated fear can render us more passive than the most passive varieties of wonder, engendering a kind of paralysis or apathy. Yet the fear of what we stand to lose remains real, vital, and important, just as it is important to cultivate, more constructively, awareness of the value of that which environmentalists fear losing. A certain amount of fear can help to jolt us out of our complacency, or what Carson called our mesmerized state. At the same time, a sense of wonder at the natural world might help to discourage these dangerous forms of enchantment from taking root in the first place. Those who devote their time to studying and trying to remedy environmental problems need a sense of wonder just to sustain them and give them hope (this, I take it, is partly what Nordhaus and Shellenberger are suggesting in urg-
ing a vision of ourselves as overcoming adversity). A sense of wonder and enchantment, as Bennett argues, may carry with it a virtuous rather than vicious type of forgetfulness — not the forgetfulness of the escapist or of the elitist who does not have to trouble herself with real world problems, but forgetfulness as a break from (legitimate) fears and anxieties. Enchantment generates an attachment to life, an enjoyment that “temporarily eclipses the anxiety endemic to critical awareness of the world’s often tragic complexity” (Bennett 10). To carry on our good work in the world, it helps to have moments when “one’s critical faculties are suspended,” to be “sustained by periodic bouts of being enamored with existence” (10-12). This is where wonder comes in.

And this is where Carson comes in. It would be wrong to overstated the similarities between Carson’s account and Bennett’s: The sites of enchantment Bennett canvases include the artificial and technological as well as the natural. Carson, on the other hand, was clearly concerned that the world not be dominated by “artificial” human creations, and she greatly feared humans becoming overly enamored with their technological innovations. But Carson similarly understood the uses of enchantment and wonder in the midst of doubt and fear. “What is the value of preserving and strengthening this sense of awe and wonder, this recognition of something beyond the boundaries of human existence?” she asks in The Sense of Wonder. Her answer: “Those who dwell, as scientists or laymen, among the beauties and mysteries of the earth are never alone or weary of life. Whatever the vexations or concerns of their personal lives, their thoughts can find paths that lead to inner contentment and to renewed excitement in living” (100). Carson, who was facing death as she completed Silent Spring, grasped as fully as any human being can the importance of locating, or creating, such paths in the midst of crisis. For those who bother to look for it, her work has always pointed out those bright paths, those roads “less traveled by” (Silent Spring 277). Carson’s “other road“ suggests an alternative to the fear-driven, despairing environmentalism with which she has become so strongly associated. A counter-narrative of wonder and enchantment with the real world around us should be recognized and celebrated as a crucial part of Carson’s legacy and America’s environmental heritage.

NOTES

1. An early version of this essay was presented in June 2007 at the biennial meeting of the Association for the Study of Literature and the Environment in Spartanburg, South Carolina. A later version was presented at the Poynter Center for the Study of Ethics and American Institutions at Indiana University in October 2008. The author particularly wishes to thank: Robert Crouch; Richard Miller, Director of the Poynter Center; and members of the IU/Bloomington community who participated in the Poynter Center roundtable; colleagues in the Department of Religious Studies who read and responded to drafts; and anonymous reviewers for Soundings. All of these individuals provided valuable input during various stages of writing.


4. “Ontogeny recapitulates phylogeny,” in the phrase of evolutionists. That is, the individual’s development from embryo to adult recapitulates the evolutionary stages of the species or lineage as a whole.

5. Carson added a preface to the 1960 edition of The Sea Around Us that for the first time in her sea writings issued explicit warnings about nuclear pollution, particularly in the form of nuclear wastes. As a reminder to herself as much as her readers, she wrote: “There has been a certain comfort in the belief that the sea, at least, was inviolate, beyond man’s ability to change and to despoil. This belief, unfortunately, has proved to be naive” (x). She was, at the time, writing Silent Spring.

6. For a discussion of the iconography of DDT, see Maguire.

7. See, for example, Schuessler.

8. These cartoons and many others are reproduced in Brooks.

9. Lisa Makson, July 31, 2003. For both the original essay and the additional genocidal spin, see http://www.freerepublic.com/focus/f-news/955667/posts

10. Crichton interprets essentially all environmentalism as a fall from Eden narrative.

11. For example, a very early and notoriously condescending dismissal of Silent Spring noted that “Silent Spring starts with a bit of dramatic description which the author then acknowledges does not actually exist” (Darby 60). For an interesting discussion of early reviews of Silent Spring and their deliberately gendered nature, see Smith.

12. The literature on Rachel Carson, DDT, and malaria is vast, daunting and much of it heavily biased. Carson understood that the use of DDT in agriculture and the use of DDT in the case of insect control for disease vectors (as with malaria) presented different problems. Regarding malaria and DDT, she endorsed the advice given by a Dutch government official who claimed that one should “spray as little as you possibly can” instead of spraying "to the limit of your capacity" (Silent Spring 275). In a nutshell — if such is possible — links between DDT and cancer in humans have not been
documented definitively, though the same can be said of many suspected carcinogens (it is classified as a "possible carcinogen" for humans). However, DDT does appear to disrupt human endocrine function. Moreover, insect resistance to DDT, a problem Carson discusses at length, remains a concern, even in regions where DDT has not been sprayed for many years. There are some findings that indicate that DDT may decompose more quickly than was previously thought in tropical climates where, of course, mosquito-borne diseases are most problematic. For this reason, and because DDT is extremely cheap, its image has improved in recent years. Regarding wildlife, the effects on ecosystems that Carson warned of have been confirmed by animal and epidemiological studies and those effects include reproductive disorders. The U.S. ban on DDT in 1972 includes provisions for its use in times of public health or economic emergencies. The manufacture of DDT was not prohibited in the ban nor did international law prohibit countries other than the U.S. from using it. When the patent on DDT expired, moreover, the powerful companies that once defended the chemical no longer had a vested interest in doing so; indeed, their interests were furthered by promoting the use of other chemicals and even by discrediting DDT. These are just a few of the facts that play a role in the complicated story of why use of DDT declined in developing countries, and many of them have little or nothing to do with Carson's work.

It is worth keeping in mind that at the time Carson was writing, DDT was viewed as miracle chemical whose uses were virtually limitless. It was turned against common nuisances such as the housefly, suburban yards were sprayed aerially, children at camp were doused with it and their sleeping bags, camping equipment, and sometimes even food were directly sprayed with the chemical. At one point, it was believed that DDT might prevent polio. DDT was a national hero. A good overview of the effects of DDT and other chlorinated hydrocarbons on human and wildlife populations, with references to past and present research, is available on the U.S. Fish and Wildlife Service's website (http://www.fws.gov/contaminants/Info/DDT. cfm). The site includes a discussion of common myths about Rachel Carson and the DDT ban. See also Karaim. A recent biography of Carson by Mark Hamilton Lytle contains an epilogue with a good discussion of the Carson-DDT controversy and its history.

13. Carson's drafts of the fable are archived in the Rachel Carson Papers of the Beinecke Rare Book and Manuscript Library at Yale University.

14. Oravec contends that the "sequence of Carson's revisions suggests that there is a danger in being too specific, especially in the realm of fiction. Carson's choice not to write a story about a male character touring a town called Green Meadows in 1965 was crucial for reaching a wider audience, both in her own time and today" (56).


16. Certain lines of criticism, notably Tierney's, seem to support this.

17. See also Fuller's book, Wonder: From Emotion to Spirituality, which contains a chapter on Carson.

18. It is not clear that even if she had completed it, the book would have developed such arguments, given that she seems to have envisioned a book for or about children. Carson had at least two immediate book projects in mind following Silent Spring: One was the expansion of "Help Your Child to Wonder" into a book; another was a sea anthology for which she had signed a contract (Lear 444-445).

19. I am less convinced that her spirituality is "unchurched," as it seems to me to have clear Presbyterian precursors.

20. A rather different account is found in Richard Dawkins' work, for example. In Unweaving the Rainbow, a book that claims to celebrate the appetite for wonder, Dawkins defends the wonder of science over and above nature. When science "explains away" what had been one of nature's mysteries, a sense of wonder remains but is now directed at the scientific solution itself (and by extension perhaps the scientist), rather than at nature. In many respects, Dawkins displays exactly the sort of enchantment with ourselves that Carson found worrisome.

21. I do not mean to suggest, as her critics often have, that Carson's research was biased by her breast cancer (i.e., in the sense that she lashed out against the chemical industry because of her condition.) Quite the contrary, I mean that she had developed the habit of facing terrifying facts with an air of objectivity and composure that is somewhat unusual. For a discussion of the parallels between Carson's breast cancer and her account of nature and pesticides in Silent Spring, see Sidersis, "The Ecological Body."

22. Echoing many of Carson's critics, they also maintain that Carson's opening fable took nature to be fundamentally harmonious and benign and balanced; they then go on to remind us all (and presumably Carson if she were here) that nature has a turbulent history — volcanoes, ice ages, asteroid impacts, great extinctions — and that animals in nature behave violently. They seem utterly unaware that Carson wrote volumes on topics such as these prior to taking up the issue of pesticides.

23. As I read Bennett, she is more cautious about embracing human achievements and powers than are Nordhaus and Shellenberger, and she sees modesty and humility as more central. We should temper our technological interventions, she writes, with "modesty that comes from acknowledging the independent vitality of nonhuman forms and from admitting corollary limits in the capacities of human agents to know exactly what they are doing when they manipulate the world in which they participate"(157). Compare this sentiment to that expressed in Break Through: "environmentalism has also saddled us with the albatross we call the politics of limits, which seeks to constrain human ambition, aspiration, and power rather than unleash and direct them." Environmentalists focus too much on the "nonhuman world that has been lost rather than also on the astonishing human world that has been created ..." (Nordhaus and Shellenberger 17).

WORKS CITED


