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Constructing a scientist: Expert authority and public images of Rachel Carson

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Constructing a Scientist: Expert Authority and Public Images of Rachel Carson

ABSTRACT

This article uses the voluminous public discourse around Rachel Carson and her controversial bestseller *Silent Spring* to explore Americans' views on science and scientists. Carson provides a particularly interesting case study because of intense and public debates over whether she was a scientist at all, and therefore whether her book should be granted legitimacy as science. Her career defied easy classification, as she acted variously as writer, activist, and environmentalist in addition to scientist. Defending her work as legitimate science, which many though not all commentators did, therefore became an act of defining what both science and scientists could and should be. This article traces the variety of nonscientific images and narratives readers and writers assigned to Carson, such as "reluctant crusader" and "scientist-poet." It argues that nonscientific attributes were central to legitimating her as both admirable person and admirable scientist. It explores how debates over *Silent Spring* can be usefully read as debates over the desirability of putatively nonscientific attributes in the professional work of a scientist. And it examines the nature of Carson's very democratized image for changing notions of science and scientists in 1960s United States politics and culture.

KEY WORDS: Rachel Carson, *Silent Spring*, pesticides, public image, expert authority, scientific icon

During and after the *Silent Spring* controversy that began in 1962, thousands of Americans went public with their views on the bestselling book and its author, Rachel Carson. These views have survived in a wide array of forms: book

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The following abbreviation is used: RC/BL, Rachel Carson Papers, Yale Collection of American Literature, Beinecke Rare Book and Manuscript Library, Yale University, New Haven, CT.

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reviews, letters to the editor, cartoons, magazine features, television programs, fan letters, speeches, publicity campaigns, and editorials. All of these texts and media became ways that their authors could enter a number of important public debates; in so doing, they commented on issues far beyond the matter of chemical pesticides with which the book is most obviously concerned. A short list of such issues includes the influence of industry on government regulation, the place of the emerging environmental movement, the utility of holistic rather than reductionist understandings of the natural world, questions over who (and what) constituted public expertise, and the desirability of what Linda Lear terms the "gospel of technological progress" on which *Silent Spring* was an assault.[1] Central to all of these controversies was Rachel Carson herself, and varying opinions on how well or poorly she filled the various roles ascribed to her: activist, writer, environmentalist, scientist, (single) woman, spokesperson, researcher, and educator. As with other iconic figures or events, it is striking how easily "Rachel Carson" and "*Silent Spring*" became cultural shorthand for a wide range of preoccupations and political quandaries.

This article focuses on one particular thread of this multifaceted discourse, albeit one that intersects and illuminates other themes: Carson's role as a public scientist. In particular, it asks the question of what we can learn about public attitudes toward science by studying depictions of her as a scientist. In general, scientific icons provide rich ground for studying public attitudes, as Janet Browne notes in connection with her work on Charles Darwin:

> The moment is ripe to take up a post-postmodern position that reinvestigates the category of scientific hero and engages with Darwin's life after death—the management and use of the intellectual legacy, the commemorations, the mythologizing, the biographical traditions and wider problems of reputation in science that interweave in interesting ways with major conceptual shifts in evolutionary biology and the public status of the biological sciences through the late nineteenth and the twentieth centuries.[2]

Exploring the "category of scientific hero" is not a reification of the concept itself. Rather, it is a recognition that iconic figures present a fruitful opportunity for investigating important but often elusive questions about public perceptions of science. Rightly or wrongly, such perceptions are often filtered through iconic individuals. In fact, the tendency to individualize a collective

1. Linda Lear, *Rachel Carson: Witness for Nature* (New York: Henry Holt, 1997), 429.

2. Janet Browne, "Presidential Address: Commemorating Darwin," *British Journal for the History of Science* 38, no. 3 (2005): 251–74, on 252.

endeavor is itself an important feature of public understanding of science. Iconic figures reveal much about the assumptions, ideals, anxieties, and hopes projected onto them; they are useful precisely because of their constructed and somewhat artificial nature.

Different icons provide different sorts of lenses through which to view the question of public attitudes toward science. In addition to Browne's work on Darwin, recent studies of Margaret Mead and Robert Oppenheimer explore the possibilities of this approach.[3] In Carson's case, much cultural discourse about *Silent Spring* was marked by uncertainty over whether the book—and its author—should be considered scientific at all. This theme was sounded most explicitly by her detractors. These opponents, many of them connected to a lucrative pesticide industry deeply threatened by the book, leaned heavily on rhetoric that marginalized or denied her scientific status. They called attention to the fact that Carson had no Ph.D. or academic affiliation and had achieved prior fame as a nature writer, not a laboratory researcher. Gendered rhetoric was a persistent feature of this attempt to distance both book and author from the category of "science"; Carson was subjected to much criticism that portrayed her as an hysterical and emotional woman who threatened the objectivity and rationality of scientific advance.[4] Interestingly, however, it was not only her opponents who conceived of her as something other than a scientist. Admiring portrayals of Carson frequently discussed her in terms that called to mind images of an environmentalist, writer, or activist. Many of these laudatory appraisals specifically commended her for being more than just a scientist, or at least for standing outside the dominant scientific establishment. In other words, many of Carson's supporters joined her detractors in seeing her in broader terms than scientific ones; they simply differed on the value that they assigned to this interpretation. And they did not feel that this necessarily disqualified her from being a scientist.

In fact, quite the opposite seems to have been the case. This article argues that nonscientific attributes were central in legitimating Carson as a public scientist. It further contends that her case suggests ways in which such attributes have been fundamental to the assimilation of science and scientists in

3. Nancy Lutkehaus, *Margaret Mead: The Making of an American Icon* (Princeton, NJ: Princeton University Press, 2008); David K. Hecht, "The Atomic Hero: Robert Oppenheimer and the Making of Scientific Icons in the Early Cold War," *Technology and Culture* 49, no. 4 (2008): 943–66.

4. An excellent account of the reaction to *Silent Spring* can be found in Lear, *Rachel Carson* (ref. 1), 396–456.

modern American culture more generally. It is quite clear that people who self-identify as mistrustful of mainstream science—proponents of intelligent design and climate change skeptics, for example—often arrive at their beliefs by filtering technical information through nonscientific lenses. What is perhaps more surprising, however, is that people professing admiration for science have often engaged in the same process. It is not characteristic only of skeptics and doubters; rather, it is an inherent feature of how science functions in the public sphere. *Silent Spring* provides a compelling example through which to explore this phenomenon. Due to both Carson's prior fame and the politically urgent nature of the work, the book attracted widespread attention as soon as it was serialized in the *New Yorker* in June 1962. The book itself came out the following September, continuing to foster debate through a much-watched *CBS Reports* broadcast in April 1963 and a report of the President Science's Advisory Committee the following month. By this point, both Carson and her book were well-established cultural and political touchstones. And nonscientific filters and lenses had defined the debate throughout.

This article opens by introducing the idea of nonscientific appeal and its central role in helping to fashion Carson's iconic status. The second section explores how nonscientific attributes functioned in her image, not as a means to critique science, but as a way to construct a particular vision of it. Both of these developments enabled audiences to feel less detached from Carson, and the third section explores the consequences of this democratization for the particular kind of scientific icon she became. The conclusion offers a few thoughts on what is—and is not—representative about Carson as a scientific icon, as the ways that she was exceptional prove as revealing about public attitudes toward science as do the ways that she may be more typical. Ultimately, the article aims to contribute to the intellectual project Janet Browne has suggested, treating iconic scientists as an important site of engagement in which Americans have constructed their image(s) of science. Within this larger framework, its particular agenda is to use public discourse on Rachel Carson to explore Americans' views on what constituted the boundaries, authority, and nature of science—as well as who they would trust to embody it, and under what conditions.

NONSCIENTIFIC APPEAL

The phenomenon of nonscientific appeal that would come to characterize Carson's iconic status has a long history. The most obvious examples are iconic

figures like Albert Einstein, who has been celebrated for his hobbies, ethics, and pithy philosophical musings as much as for his science. However, this pattern is not only applicable to iconic scientists, as Naomi Oreskes's study of Eleanor Lamson suggests. Lamson was a research scientist in the early twentieth century who participated in, but failed to receive public credit for, her work in analyzing marine gravity data. This was not because her contribution was less than those of her more celebrated—and male—colleagues. Rather, it was because those colleagues had gone into the field to collect the data. As Oreskes puts it: "Only the men went to sea. Only the men's work could be cast as a heroic voyage to 'conquer the earth's secrets.' Therefore only the men appeared in the public eye."[5] Oreskes does not develop the idea of nonscientific appeal explicitly, as her focus is on exploring gendered notions of scientific heroism. But her argument nevertheless provides compelling evidence for the importance of nonscientific appeal, for it identifies nonscientific traits—physical adventurism and the appeal of challenging a frontier—that were more responsible for scientific fame than were scientific ones. "In the public domain," Oreskes writes, "the fact of participating in the field expedition was more important than the specific scientific work performed."[6] The contrast between Lamson and her publicly celebrated colleagues suggests what happens in the absence of a compelling nonscientific narrative: nothing. Fame turns on the presence of the nonscientific narrative; without it, the scientist remains obscure. Moreover, the relatively straightforward nature of the work performed by *all* scientists in this project—both procuring and analyzing data—suggests something further. The centrality of nonscientific appeal is not a quirk of particular, towering figures like Einstein. Rather, it is fundamental to how scientists appear in the public sphere, and particularly to how audiences come to understand them.

In Carson's case, several nonscientific narratives facilitated the establishment of her credibility as a scientist—at least, among those who chose to grant her such credibility at all. Among the most prominent was that of a "reluctant crusader." Carson was consistently depicted as adverse to publicity, and willing to endure it only because she believed in her cause. One review, for example, claimed that she "loathes the spotlight."[7] And a lengthy portrait of her written

5. Naomi Oreskes, "Objectivity or Heroism? On the Invisibility of Women in Science," *Osiris*, 2nd ser., 11, Science in the Field (1996): 87–113, on 100.

6. Ibid., 100–01.

7. Marjorie Mills, "Catching Up Back Home," *Boston Herald*, 26 Sep 1962, RC/BL, Folder 2064.

for the Associated Press noted that "Rachel Carson doesn't intend to become a lecture hall crusader." The only reason she wrote the book, this author continued, was to "'put the facts on record' so the public could make its own decision."[8] Such quotes depict an inclination to shun any more publicity than was absolutely necessary; they also suggest that her motives were altruistic. Moreover, visions of Carson as a reluctant crusader became explanations of who she was, not simply what she did. This article also noted that "Miss Carson hardly looks the type for a crusade—she's more the quiet teacher type."[9] Another article opened by noting that "gentle, soft-voiced Rachel Louise Carson appears an unlikely candidate for the role of avenging angel."[10] Unsurprisingly, such images are not wholly accurate. For example, Carson, while certainly a private person, was a good public speaker and far more self-assured than contentions of her shy, quiet nature would suggest.[11] However, as with all public images, the nature of the depiction is more consequential than its precise fidelity to the truth. Such stories gave readers a way to relate to Carson, a familiar framework through which to understand her. Reluctant crusader imagery provided an interpretative structure that helped establish Carson as a scientist who could be trusted, and which did so without relying wholly on scientific standing.

This manifestation of nonscientific appeal was particularly resonant at the time, amid accelerating public demand for evidence of social responsibility on the part of scientists. Much of this demand was rooted in the realities of the atomic age; the grave risks posed by nuclear fallout, for example, dramatized the trade-offs of technological advance. Moreover, the work of Barry Commoner, Linus Pauling, and others to expose misinformation on the subject of fallout argued for the insufficiency of leaving risk assessment to experts and officials. Commoner, in particular, was a central figure in the science information movement, which hoped to democratize science policy decision-making through the wide dissemination of technical research and data. Commoner felt strongly that there was a "tension between expertise and the public interest," and so the public needed to become equipped to participate in science policy

8. Frances Lewine, "Life Story of Noted Biologist," *Springfield State Register*, 4 Oct 1962, RC/BL, Folder 2064.

9. Ibid.

10. "Critic of Pesticides," *New York Times*, 5 Jun 1963.

11. Lear, *Rachel Carson* (ref. 1). Lear provides a number of anecdotes that illustrate this point; see pp. 396–456 for examples in connection with public debate over *Silent Spring*.

issues and debates.[12] Carson operated from a similar assumption. Early in *Silent Spring* she wrote: "It is the public that is being asked to assume the risks that the insect controllers calculate. The public must decide whether it wishes to continue on the present road, and it can do so only when in full possession of the facts."[13] This reflected her sense—one which increasing numbers of both scientists and non-scientists were coming to share—that government regulation and industrial practice were not always sufficient to keep dangerous chemicals away from consumers. Important to note is that this was not an anti-science impulse; one of the distinguishing features of this trend was the participation of scientists in it.[14] Marcel LaFollette has noted that the potential dangers associated with scientific advance after World War II did not necessarily cast a negative light on science. Rather, they increasingly prompted many Americans to suspect that scientists neither could nor should be separated from the social and political ramifications of technological innovation.[15] In this context, Carson's person—her values, her ideas, and her politics—could be welcomed into consideration of her science.

There were other nonscientific attributes featured in admiring portraits of Carson. Closely intertwined with reluctant crusader imagery, for example, was a narrative of "self-sacrifice." Many reviewers and readers commented on the hard work, courage, and personal costs entailed by the writing of *Silent Spring*. Often, this took the form of praising the painstaking work she had completed; after her death from cancer in 1964, intimations of her physical suffering greatly augmented this narrative.[16] One article sounded a bittersweet tone, noting that Carson "died of cancer just as the evidence was growing that she was winning her crusade," and went on to note that a Senate committee was holding hearings

12. Michael Egan, *Barry Commoner and the Science of Survival: The Remaking of American Environmentalism* (Cambridge, MA: MIT Press, 2007), 9.

13. Rachel Carson, *Silent Spring*, 2002 ed. (Boston: Houghton Mifflin, 1962), 13. Page references are to the 2002 ed.

14. See Egan, *Barry Commoner* (ref. 12); and Kelly Moore, *Disrupting Science: Social Movements, American Scientists, and the Politics of the Military, 1945–1975* (Princeton, NJ: Princeton University Press, 2008). For Carson's embrace of scientific solutions to the problems she identified, see Yaakov Garb, "Change and Continuity in Environmental World-View: The Politics of Nature in Rachel Carson's *Silent Spring*," in David Macauley, ed., *Minding Nature: The Philosophers of Ecology* (New York: Guilford Press, 1996).

15. Marcel C. LaFollette, *Making Science Our Own: Public Images of Science, 1910–1955* (Chicago: University of Chicago Press, 1990), 105–06.

16. A later section of this article, "Expertise Without Elitism," contains examples of such accolades.

on the issue "even as she lay dying."[17] Rebecca Herzig has argued that self-sacrifice is central to cultural conceptions of what scientific advance requires; perseverance through deprivation or pain becomes one way of legitimating a scientist's motivations and knowledge.[18] Such rhetoric was quite evident in obituaries of Carson and became an additional way of establishing her as trustworthy without explicit reference to science. One obituary called her "valiant," noting the long-standing nature of the cancer that killed her, writing that Carson "was aware of her illness but she never quit." The same editorial noted that Carson was "rightly characterized as a crusader" but was also "demure, scholarly [and] fragile in appearance."[19] Such commentary merges the narratives of sacrifice and crusade, as Carson's battle against cancer appears only as a final and most dramatic instance of the physical and psychological trials Carson endured as part of her work. These images constituted nonscientific appeal, not in the sense of being unscientific, but rather by facilitating admiration for her person that did not depend exclusively on her science.

Underlying both of these narratives were notions of gender. Public images of Carson were highly gendered; though its precise tone and function varied considerably, femininity was pointedly present in all aspects of her image. Much scholarly attention—deservedly so—has focused on the gendered nature of the vitriolic attack on both Carson and her book. One review, for example, called it a "long emotional attack."[20] Another likened it to "gossip."[21] Several more compared her ideas to witchcraft—an obviously gendered way of linking her to superstition rather than to science.[22] Interestingly, however, Carson's supporters also relied on gender in constructing their images of her. They

17. John Chamberlain, "Rachel Carson's Winning Crusade," *Macomb*, 21 Apr 1964, RC/BL, Folder 2177.

18. Rebecca Herzig, *Suffering for Science: Reason and Sacrifice in Modern America* (New Brunswick, NJ: Rutgers University Press, 2005). Herzig's development of this theme often focuses on cases where suffering or self-sacrifice was directly linked to scientific advance, such as with physicians experimenting on themselves or arctic explorers suffering bodily harm as they pursued the quest. But long hours, sleepless nights, and other deprivations of physical comfort are acknowledged to be part of this phenomenon as well.

19. "Scientist with Poet's Eye and Crusader Courage," *Falmouth Enterprise*, 17 Apr 1964, RC/BL, Folder 2177.

20. Michael B. Smith, "Silence Miss Carson! Science, Gender, and the Reception of *Silent Spring*," *Feminist Studies* 27, no. 3 (2001): 733–52, on 741.

21. Ibid., 742.

22. Maril Hazlett, "'Woman vs. Man vs. Bugs': Gender and Popular Ecology in Early Reactions to *Silent Spring*," *Environmental History* 9, no. 4 (2004): 701–29, on 707–08. For more on the counterattack on Carson, and the role of gender in such rhetoric, see Lear, *Rachel Carson* (ref. 1);

eschewed negative stereotypes of overly emotional femininity, instead invoking more favorable but equally gendered narratives. One description contends that "it would be hard to find a less likely public figure," because this "tiny woman seems out of place in any crowd. Wearing no makeup, plainly dressed, she sits quietly with her hands folded demurely on her lap."[23] This description creates an image of a quiet and shy woman uncomfortable in public, as if Carson were a housewife who became an accidental activist. Another review sounded a similarly domestic note, opining that she looked a like "sweet aunt."[24] Other reviews suggest the gendered imagery underlying the reluctant crusader narrative. Harriet Van Horne's review of the widely watched *CBS Reports* program on the *Silent Spring* controversy, for example, makes this clear. "With her sedate manner," Horne writes, "her sweet, old-fashioned face (which put one in mind of those miniatures painted on ivory long ago, the beauty faded but the delicacy still intact), she was impressive in her very reluctance to be impressive."[25] The source of Carson's appeal and authority, in this formulation, was "her very reluctance"—a reticence shown by her sweet, delicate nature and faded beauty. These positive reviews were just as gendered as were the denunciations of her ideas for being emotional and hysterical. And they became critical aspects of her nonscientific appeal, as they were ways of fitting Carson's image to acceptable narratives of admirable women.

This rhetoric was very common. For example, a number of writers used Harriet Beecher Stowe, and her influential abolitionist book *Uncle Tom's Cabin*, as a lens to understand Carson; both women were seen as having eloquently and irreversibly targeted an establishment with their words.[26] Others sought to assure readers that Carson was indeed "very feminine," as a *New York Times* article put it.[27] One reviewer, after sounding the almost ubiquitous note that Carson did not look like the sort of person to start a major public controversy, wrote: "She is soft-spoken, calm, poised, and completely feminine. She has

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and Julia B. Corbett, "Women, Scientists, Agitators: Magazine Portrayal of Rachel Carson and Theo Colburn," *Journal of Communication* 51, no. 4 (2001): 720–49.

23. Robert A. Caro, "Nature's Guardian," *Newsday*, 10 Oct 1962, RC/BL, Folder 2064.

24. Bill Summers, "Pesticides Study Proves Absorbing," *Orlando Star,* 4 Apr 1963, RC/BL, Folder 1338.

25. Harriet Van Horne, "Is Man His Own Executioner? 'Silent Spring' vs. DDT Lobby," *Houston Press*, 4 Apr 1963, RC/BL, Folder 1337.

26. Priscilla Coit Murphy, *What a Book Can Do: The Publication and Reception of* Silent Spring (Amherst: University of Massachusetts Press, 2005), 152 and elsewhere.

27. "Critic of Pesticides," *New York Times* (ref. 10).

merry blue eyes, fair skin and dark brown hair worn in a smart, smooth bob."[28] Such rhetoric clearly concentrates on feminizing Carson; in fact, the focus on physical appearance is, itself, a marker of gendered construction. These overt gestures toward femininity are doubly important. First, they help explain why the nonscientific appeal took the form that it did: visualizing Carson as the "quiet teacher type" challenges gender norms less than other available narratives might have done. Defenses of her would frequently invoke such language; an article written after her death contended: "It is said that ladies often have the last word. Rachel Carson will have hers from beyond the grave."[29] Tales of posthumous glory need not be gendered; in this case, the prediction of Carson's coming vindication was told in terms of a gender stereotype. But the significance of this discourse goes further still. It is possible that gender itself functioned as a nonscientific attribute in Carson's image. Evelyn Fox Keller has noted the degree to which "our understanding of 'feminine' and 'scientific' have been historically constructed in opposition to each other."[30] The gender constructions evident in phrases like "sweet aunt" and "delicate beauty," by this reckoning, become additional ways of seeing Carson as something other than just a scientist.[31]

A focus on gender was also a focus on personal identity, and indeed the conflation of the personal and the intellectual was a central part of Carson's appeal. Her person was seen as relevant to—and perhaps inseparable from—an analysis of her ideas. Many of the letters she received reflect this. One correspondent felt that "it is good to know that there are people like you who have the courage to speak out to protect the public interest."[32] Another was filled with admiration for Carson's willingness to withstand attack: "the courage you have shown in placing yourself in the range of industry's heavy artillery commands our respect beyond any words that I command."[33] And such themes were pervasive in published reviews as well; one called it a "courageous

28. Gay Pauley, "Woman Biologist Says Nature Being Upset by Chemical Use," *Erie Times*, 21 Sep 1962, RC/BL, Folder 2064.

29. *Daily Progress*, 25 Apr 1964, RC/BL, Folder 1304.

30. Evelyn Fox Keller, "The Gender/Science System: or, Is Sex to Gender as Nature Is to Science?" in *Feminism and Science*, ed. Nancy Tuana (Bloomington: Indiana University Press, 1989), 33–44, on 37.

31. Maril Hazlett and Adam Rome have both discussed changing gender politics around environmentalism, and *Silent Spring* in particular; the norms cited above were influential, but hardly static or universal. Hazlett, "'Woman vs. Man vs. Bugs'" (ref. 22), and Adam Rome, "'Political Hermaphrodites': Gender and Environmental Reform in Progressive America," *Environmental History* 11, no. 3 (2006): 440–63.

32. Lillian Snyder to Rachel Carson, 6 Sep 1963, RC/BL, Folder 1616.

33. Mrs. Lee to Rachel Carson, 28 Sep 1962, RC/BL, Folder 1610.

revelation" and another expressed confidence in her ability to withstand attacks because "shy people are the toughest fighters."[34] All of these comments assigned to Carson specific values—social responsibility, courage, or quiet resolve—that the particular writer held in high regard. To some extent, this phenomenon stemmed from the nature of the attack against Carson. Forced to concede that the facts in *Silent Spring* were largely correct, her detractors focused their critiques on the interpretations made of that data—and on the author who made them. However, this conflation of personal and professional has roots deeper than instrumental ones. Personal traits—real and perceived—have often played key roles in legitimating (or not) public authority of prominent scientists. Writing about a very different scientist amidst a very different controversy, for example, Charles Thorpe has observed that "questions of character were intimately related to the examination of the boundaries and legitimacy of Oppenheimer's scientific authority" during his now-infamous security hearing in 1954.[35] It is not logically necessary that "questions of character" be adjudicated by referencing qualities perceived to be nonscientific ones, but in practice that is often the case. Depictions of Carson as shy, courageous, suffering, dutiful, ethical, or quietly farsighted functioned as nonscientific elements in credentialing her as an authority. Their presence in admiring commentary shows that her supporters understood her in terms broader than professional ones. Importantly, however, they did not eclipse her scientific status. Rather, they enhanced it.

VISIONS OF SCIENCE

It is easy to see how nonscientific attributes may have enhanced Carson's personal appeal. But they did more than that: they were also a critical part of the construction of her authority as a scientist. One compelling illustration of this is the *CBS Reports* broadcast on pesticides in April of 1963. This was arguably the high point of image dissemination of Carson, as it was viewed by an estimated ten to fifteen million people.[36] After citing an image of Carson sitting

34. "Meet Rachel Carson, a Poet and a Scientist," *The Trentonian*, 11 Jul 1963, RC/BL, Folder 2064; J. Lear, "Patroness of Birdsong," *Saturday Review*, 1 Jun 1963, RC/BL, Folder 2063.

35. Charles Thorpe, *Oppenheimer: The Tragic Intellect* (Chicago: University of Chicago Press, 2006), 228.

36. Lear, *Rachel Carson* (ref. 1), 450. Also cited in "Gary Kroll, "The 'Silent Springs' of Rachel Carson: Mass Media and the Origins of Modern Environmentalism," *Public Understanding of Science* 10, no. 4 (2001): 403–20, on 413.

on her porch overlooking her property in coastal Maine, Gary Kroll notes that "Carson is not coded as a scientist" in the program, but is instead "coded as a storyteller."[37] This coding gained currency when set against the depiction of Robert White-Stevens, who appeared in the same program fervently defending pesticides while clad in perhaps the most recognizable of all scientific stereotypes: a white lab coat. Certainly, the visual juxtaposition between Carson and a seemingly stereotypical scientist cannot be considered the only factor in the favorable press coverage she received after the program aired. But it was an important theme; one review wrote that she "stole the show . . . with quiet authority she once again convincingly told the story of how these chemicals pollute soil and water, destroy wildlife and fish, and may eventually cause great harm to man."[38] This language, with its reference to Carson's storytelling, echoes Kroll's claims about Carson being coded as something other than a scientist. And her seeming distance from stereotypical science enhanced her "quiet authority" about technical matters.

Nonscientific attributes consistently reinforced the professional legitimacy that (many) Americans granted Carson. Another example is the widespread praise evoked by her combination of literary and technical talents. Commendations of *Silent Spring* consistently lauded her ability to be both scientist and artist; one article noted approvingly: "As a trained scientist she has never lost the poet's sense of wonder," and that she was able to "reveal the poetry . . . at the core of any scientific fact."[39] These words demonstrate appreciation for the fact that she was simultaneously a scientist and a poet, able to marshal these often separate skills in mutually reinforcing ways. They also signal a view that "the poet's sense of wonder" was not out of place in science, and evince appreciation for Carson as a scientist who embodied that connection. Such admiration had been central to reviews of Carson's previous books and appeared in the *Silent Spring* discourse mostly as a means to identify—and hence to credential—her.[40] One article introduced her as a "distinguished scientist-writer," another

37. Kroll, "Silent Springs" (ref. 36), 415.

38. "Rachel Carson Steals Show," *Boston Traveler*, 4 Apr 1963, RC/BL, Folder 1337. Not all reviews of the program felt that it vindicated Carson's argument quite as fully as this implies; however, the feeling that Carson personally acquitted herself quite well was typical of the overall response.

39. "Meet Rachel Carson," *Trentonian* (ref. 34).

40. See, for example, E. H. Martin, "Brilliant Study of the Sea," *Baltimore Evening Sun*, 20 Jun 1951, RC/BL, Folder 166; Irston Barnes, "The Edge of the Sea Beckons Us All," *Washington Post*, 13 Nov 1955.

identified her as a "biologist" and "lucid" writer of a classic work on the sea, and a third noted that her "previous works on science have been praised for the beauty and precision of the writing."[41] Since *Silent Spring* raised urgent policy issues, reviewers did not spend as much time praising this scientist-writer duality as they had in discussing her previous books. However, it was clearly part of cultural understanding about who Rachel Carson was, and it consistently redounded to her credit.

Those Americans inclined to admire Carson—or at least to grant her enough scientific authority to be a legitimate voice in a national conversation over pesticides—frequently appreciated her ability to be both scientist and writer. This constituted one important way that nonscientific appeal enhanced her scientific credibility, but it was not the only one. Carson's exposé of indiscriminate pesticide use was rooted in a broad critique of chemical companies and ineffectual government regulation, and she was understood and (often) celebrated for standing outside the academic/industrial establishment. Writing in the *Indianapolis Times*, for example, Richard K. Shull wondered if the scientists who declared that pesticides were safe were the same ones who said that x-rays in shoe departments were safe as well.[42] Shull was not simply unbothered by Carson's claims to be a technical expert despite standing outside of the scientific establishment; he seemed actively reassured by this detachment. This was a common theme. A *New York Times* editorial welcomed Carson's warning "of the dangers of misuse and overuse [of pesticides] by a public that has become mesmerized by the notion that chemists are the possessors of divine wisdom and that nothing but benefit can emerge from their test tubes."[43] This editorial argues that technological innovation is not inevitably good, and in so doing creates rhetorical space for scientific experts of a different sort. Such critiques were gaining adherents in the years before *Silent Spring* was published; Zuoyue Wang—among other scholars—has noted the harmony between Carson's critique and emergent skepticism of what he terms "technological enthusiasm" in the late 1950s.[44] Appreciating Carson for her outsider perspective and dedication to the world outside the

41. Jean M. White, "Rachel Carson Hints Industry Filters Facts," *Washington Post,* 6 Dec 1962; John Chamberlain, "Pesticides and Nature's Advocate," *Wall Street Journal*, 26 Sep 1962; John M. Lee, "'Silent Spring' is Now Noisy Summer," *New York Times*, 22 Jul 1962.

42. Richard K. Shull, "Bug-Bombs and Mutants," *Indianapolis Times*, 4 Apr 1963, RC/BL, Folder 1337.

43. "Rachel Carson's Warning," *New York Times*, 2 Jul 1962.

44. Zuoyue Wang, *In Sputnik's Shadow: The President's Science Advisory Committee and Cold War America* (New Brunswick, NJ: Rutgers University Press, 2008), esp. 1–12 and 199–218.

laboratory was a way of envisioning and welcoming scientists who could produce knowledge through means other than test tube wizardry.

Carson was quite explicit in linking her technical understanding of an ecological web of life with her politics. This combination of science and advocacy was a goal of her book, not a secondary feature. In his story of biologists' engagement with politics, John P. Herron writes of Carson that "promoting a socially engaged understanding of natural science was something she had anticipated and prepared for much of her life."[45] *Silent Spring* is replete with passages that bear out this assertion. After noting that chemicals were not applied selectively to their particular targets, but were widely and universally spread onto "farms, gardens, forests, and homes," Carson asked, "Can anyone believe that it is possible to lay down such a barrage of poisons on the surface of the earth without making it unfit for all life?"[46] Much of *Silent Spring* provides an answer to this largely rhetorical question. But the query itself reveals the set of broader concerns—ecological and ethical—that Carson advocated using to analyze pesticide policies. It also suggests two important things about the book and its author. The first is that Carson was quite conscious in her attempts to merge scientific and nonscientific worlds. The second is that she was part of a longer intellectual tradition. In asking these sorts of questions, Carson fit squarely into a tradition of writer-conservationists who had featured similar blends of technical, aesthetic, and social concerns since (at least) the late nineteenth century. Scholars have noted the resonance between Carson's writing and the work of figures such as Henry David Thoreau, John Muir and Aldo Leopold; Stephen Bocking, for example, notes the confluence of ecological and environmental values informing the words of both Leopold and Carson.[47] As Herron writes, "the attempt to reduce the space between the natural and the social also became an important element of Rachel Carson's work."[48] Forging links between science and society was therefore intellectual as well as social. It involved the production of scientific work, not simply its later use.[49]

45. John P. Herron, *Science and the Social Good: Nature, Culture, and Community, 1865–1965* (Oxford: Oxford University Press, 2010), 147.

46. Carson, *Silent Spring* (ref. 13), 7–8.

47. Stephen Bocking, *Nature's Experts: Science, Politics and the Environment* (New Brunswick, NJ; Rutgers University Press, 2004), 56; Donald Fleming, "Roots of the New Conservation Movement," *Perspectives in American History* 6 (1972): 11–14.

48. Herron, *Science and the Social Good* (ref. 45), 169.

49. I would like to thank Michael Egan for suggesting the framework of production/consumption of science to me.

There is ample evidence to suggest that Carson's admirers appreciated her attempts to bring the natural and the social closer together. The journalist Ann Cottrell Free argued that an institutional imprimatur provided no guarantee of accuracy; she paraphrased Carson's own question about "whether the chemical industry's financial contributions to universities and scientific organizations were not having the effect of burying research findings unfavorable to industry."[50] Standing outside the scientific establishment was an appealing nonscientific trait in Carson's image; it also signaled a way of legitimating the knowledge she produced.[51] Early in *Silent Spring*, she acknowledged that there was an insect problem that needed to be addressed. Her contention was simply that "that control must be geared to realities, not to mythical situations, and that the methods employed must be such that they do not destroy us along with the insects."[52] Carson was concerned that the pesticide industry grossly overstated the scope of the problem it purported to solve, discounted side effects, and failed to account properly for the development of insect resistance to pesticides. These ideas received wide approval. One article in the *Pittsburgh Press*, for example, reprinted her idea about gearing control to realities instead of myths virtually verbatim. It was offered as proof of the contention that "every thinking man and woman should read 'Silent Spring.'"[53] By declaring *Silent Spring* a worthy read, this piece did not endorse its conclusions wholeheartedly. It simply asserted that Carson's perspective should be part of any serious debate—and, in the process, validated that perspective as legitimate. Though it is difficult to know how best to characterize Carson's multifaceted, boundary-crossing professional career, much cultural discourse around *Silent Spring* granted her scientific authority. And her interest in merging the natural and the social was a major reason why. Bernadette Bensaude-Vincent has argued that a claim of separation and superiority was not a historical accident,

50. Ann Cottrell Free, "Quiet Fighter," *Louisville Courier-Journal*, 3 Feb 1963, RC/BL, Folder 2070.

51. The question of whether Carson *produced* knowledge is a complicated one. H. Patricia Hynes makes a compelling case for the novelty of her work, arguing that while Carson did not generate new knowledge in the conventional sense of having completed original research, her prodigious act of synthesis qualified as forging a novel contribution. H. Patricia Hynes, *The Recurring Silent Spring* (New York: Pergamon Press, 1989), 32.

52. Carson, *Silent Spring* (ref. 13), 9.

53. Roger Latham, "'Silent Spring' Rips Harmful Chemicals," *Pittsburgh Press*, 30 Sep 1962, Google News Archive, http://news.google.com/newspapers?id=xkYqAAAAIBAJ&sjid=yk4EAAAAIBAJ&pg=6913,5319022&dq=rachel-carson&hl=en (accessed 9 Mar 2011).

but rather a "foundational gesture" of science.[54] It is this foundational gesture that admiration for Carson challenged.

Particularly interesting evidence for the centrality of nonscientific attributes in legitimating Carson comes from a surprising place: critical reviews. In attempting to discredit Carson, detractors often cited similar attributes to those that her admirers welcomed. For example, I. L. Baldwin's review in *Science* disparaged the very same duality—scientist and writer—that her supporters celebrated. He offered up Carson's graceful prose as evidence that she was not scientific. Writing in *Science*, Baldwin urged readers to consult a pair of National Academy of Science (NAS) reports that he claimed were more balanced and reliable guides to the issue of pesticides. He noted that these reports "are not dramatically written, and they were not intended to be best sellers. They are, however, the result of careful study by a wide group of scientists, and they represent balanced judgments in areas in which emotional appeals tend to over-balance sound judgment based on facts."[55] Baldwin sets up a contrast between the "dramatically written" *Silent Spring* and the "balanced judgments" and "careful study" of the NAS reports. In this formulation, the beauty of Carson's writing is not simply irrelevant to the case she tries to make. It actually detracts from its scientific reliability, because it lends itself to the "emotional appeals" which tended to "over-balance sound judgment based on facts." From this perspective, it is difficult if not impossible to be both gifted writer and reliable researcher. And since Carson was clearly the former, she could not be the latter. *Time* magazine's highly critical review of the book offered a similar perspective. It asserted that most scientists might acknowledge "Miss Carson's skill in building her frightening case," but they will nonetheless recognize that her case is "unfair, one-sided, and hysterically overemphatic."[56] As with Baldwin's analysis of the NAS reports, Carson's rhetorical skill is here presented as something that gets in the way of sober analysis. It leads to "unfair, one-sided, and hysterically overemphatic" conclusions; it is disqualification rather than qualification.

Since her literary skill received widespread praise, detractors could not ignore it. But they often reconfigured it as perhaps admirable but ultimately problematic: a nonscientific attribute that marked her as unscientific. However, this

54. Bernadette Bensaude-Vincent, "A Historical Perspective on Science and Its 'Others,'" *Isis* 100, no. 2 (2009): 359–68, on 366.

55. I. L. Baldwin, "Chemicals and Pests," *Science* 137, no. 3535 (1962): 1042–43, on 1043.

56. "Pesticides: The Price for Progress," *Time*, 28 Sep 1962, 45.

argument was based on advocating a particular conception of science, one in which the imagined distance between it and the rest of society could be maintained. This notion of "imagined distance" is a key one, as any idea that nonscientific factors can be removed from analyzing science is more rhetorical than real. In fact, Baldwin and other Carson critics used nonscientific filters as often as her supporters did. Gender provides one illustration of this: critical reviews of *Silent Spring* used language such as "hysterically overemphatic" and "emotional appeals" that reflects clear gender stereotyping—no more or less so than phrases like "sweet aunt" or "sits quietly with her hands folded demurely in her lap." The difference is that her supporters picked gender stereotypes that redounded to Carson's credit, by emphasizing selfless social conscience. Conversely, her critics choose stereotypes which conflicted with cultural assumptions about science. Furthermore, the gendered critique served to (thinly) mask another nonscientific theme informing the views of many of Carson's detractors: economic concern. Maril Hazlett has written that "this gender-hazing [was] a tactic to shape the debate over pesticides according to the rules of industrial capitalism."[57] This economic perspective—valid or not—became another way in which nontechnical concerns framed interpretations of technical data. Opponents also accepted uncritically a relationship between institutional credentials and correct scientific interpretation, hence Baldwin's invocation of the NAS reports. All of these examples suggest that something other than dispassionate scientific analysis was driving criticism of *Silent Spring*; nonscientific filters were central here as well.

The major difference between supporters and detractors on this point—other than the particular filters used—was whether or not the presence of nonscientific factors was acknowledged. The rhetoric of Carson's detractors generally argued for the nonscientific qualities in her science, while masking those in their own. William Darby, for example, feared that acceptance of Carson's critique would mean "the end of all human progress, reversion to a passive social state devoid of technology, scientific medicine, agriculture, sanitation, or education. It means disease, epidemics, starvation, misery and suffering incomparable and intolerable to modern man."[58] This is a mischaracterization of Carson, who was anything but anti-science; biological and ecological understandings were deeply embedded in her solutions and outlook. Darby's words were an assertion of one particular kind of scientific vision—one centered on

57. Hazlett, "'Woman vs. Man vs. Bugs'" (ref. 22), 708.
58. Quoted in Smith, "'Silence, Miss Carson!'" (ref. 20), 738.

certain institutional and economic considerations—as the only one that counted as science. He seemed unaware of the nonscientific rationales for privileging this kind of science. In contrast, Carson's supporters seemed well aware of the existence of nonscientific factors in her life and work—and they celebrated and welcomed their presence.

EXPERTISE WITHOUT ELITISM

One curious feature of Carson's iconic status is that it emerged within what Barry Schwartz has called a "post-heroic era." Schwartz, one of the most careful chroniclers of icons and images in American political history, has argued that the cultural credence given to notions of heroism and greatness was significantly eroded in late twentieth-century America. "To revel in the existence of gifted and morally superior men who stand above the masses of their countrymen," he writes, "is to believe in the existence of inferior men whose talents and morals place them in permanent mediocrity."[59] The notion of accepting a permanent underclass of "inferior men" is—to say the least—an attitude that a more egalitarian and pluralistic American culture has rejected since the early 1960s. Schwartz's point is compelling, but one need not embrace it fully to see the puzzle it presents to analysis of Carson's public image. The cultural attitudes evident in the admiration for Carson would seem to call into question the very notion of scientific heroism—and paradoxically so, since these same celebratory articles contained heroic depictions. How can a scientist be revered amidst a cultural move away from the very conditions that seem to underlie such veneration: comfort with hierarchy, deference to professional expertise, and acknowledgment that science is somehow beyond the grasp of most people? How can one revere scientists as exceptional figures while at the time undermining the basis of their discipline's exceptional status? Celebratory impulses in public discourse about Carson rest uneasily with the democratization she represented. But this very tension also illustrates one avenue through which such celebration could still occur, even in a post-heroic era. The various ways that nonscientific attributes conditioned Carson's image made her appear as a very democratized scientific icon—one who was heroic without seeming to stand apart from the society surrounding her.

59. Barry Schwartz, *Abraham Lincoln in the Post-Heroic Era* (Chicago: University of Chicago Press, 2008), 189.

On a personal level, nonscientific attributes helped Carson seem familiar and trustworthy. On a professional level, they demonstrated that she was a scientist whose scientific presence incorporated a wide range of "nonscientific" elements: artistic talent, technological skepticism, and independence from an academic-industrial establishment. Taken together, these two functions of nonscientific attributes amounted to a way of seeing "the scientist" as something other than a figure set apart from society. An obituary in the *Hartford Courant*, for example, noted: "If anyone should question the power of a single individual to move mountains, Miss Carson is a notable example of what one person can do."[60] This simultaneously acknowledges extraordinary achievement and the relatively ordinary source—"a single individual" without obvious power—of such accomplishment. Another example is the frequently cited parallel between Carson and Harriet Beecher Stowe. A *New York Post* close-up on Carson shortly after the publication of *Silent Spring* began by citing the "whimsical surprise" with which Lincoln supposedly greeted Stowe: "'So you're the little lady who started this great big war?'"[61] This was not designed to belittle Carson; the article goes on to say that "history ought to teach us that the woman whose influence can least be underestimated is the gentlewoman with a cause and the absolute conviction that her cause is right."[62] But the rhetoric in the Stowe parallel—contrasting "little lady" with "great big war"—suggests that Carson was not obviously the equal of the events she created. And it seemed to celebrate Carson for that lack of overt and unambiguous stature.

Fan mail provides particularly compelling evidence for this. Numerous admirers of Carson wrote letters expressing this appreciation; this correspondence has rich possibilities for exploring how and why her admirers chose to elevate her to cultural hero status. Such letters cannot be taken as representative of the broader public, but they do provide revealing glimpses of how and why those people who granted her admiration and authority did so. And one primary theme was a sense of shared authority that made her image less elite and more approachable. Carson's admirers viewed themselves as knowledgeable; they did not feel as though they were looking up to a rarified expert. One writer, for example, responded to the serialization of the book in the *New Yorker* and noted the "superb" quality of Carson's research. And she clearly felt herself in

60. "Rachel Carson," *Hartford Courant*, 16 Apr 1964, RC/BL, Folder 2177.

61. Barbara Yuncker, "A Voice Amid the Silence," *New York Post*, 30 Sep 1962, RC/BL, Folder 2076.

62. Ibid.

a good position to judge that: "I have been familiar with the facts that went into this article for some time."[63] Another writer had "been hoping for a long time that someone would write a book about the dangers" Carson identified.[64] Words such as "appreciate" and "much needed" dot the letters; these are the comments of an audience who felt relieved that someone was voicing an issue, not the stunned reaction of a readership in awe at having learned something wholly new.[65] Carson's contribution was to become aware of it faster, and to lay out the case with notable thoroughness and eloquence. Many people admired her greatly for this, but this was an admiration based in a largely shared scientific assessment—not one granted to an expert on high. Vera Norwood writes of Carson that she never speaks "with a voice of superior authority." Furthermore, despite the heavy dependency on science in *Silent Spring*, Norwood writes, Carson's voice "is unequivocally allied with the nonspecialist."[66] The letters Carson received clearly show that this was a central part of what drew people to her.

Many correspondents indicated that they were not wholly surprised by the revelations of Carson's work. This prior knowledge meant that Carson's fans viewed her as having a very particular kind of scientific authority—one that they felt they shared. Writers frequently granted Carson authority but kept some for themselves, seeing themselves as part of the very phenomenon they admired Carson for voicing. One example of this was a professor in the biological sciences, who wrote to the *New Yorker* to request reprints of Carson's work to use in teaching. He also noted that while he tried to warn his students about the dangers of chemical overuse, "I have not collected anything like the amount of information organized so well by Miss Carson nor am I able to present it as eloquently as she."[67] He specifically noted eloquent presentation as one of the things distinguishing her from him. Her greater authority, therefore, stemmed from nonscientific talents and not a wholly different order of technical understanding or insight. In fact, the public "Rachel Carson" became a means

63. Audrey Newcomb to the *New Yorker*, 18 Jun 1962, RC/BL, Folder 1609. Some of the letters discussed in this section were addressed to Rachel Carson. Others, particularly the ones written during and after Carson's articles appeared in the *New Yorker*, were addressed to the magazine itself.

64. A. O. Hage to Rachel Carson, 19 Mar 1964, RC/BL, Folder 1619.

65. Walter Rosenberry to the *New Yorker*, 6 Jul 1962, RC/BL, Folder 1609; M. E. Herr to Rachel Carson, 1 Sep 1962, RC/BL, Folder 1617.

66. Vera L. Norwood, "The Nature of Knowing: Rachel Carson and the American Environment," *Signs* 12, no. 4 (1987): 740–60, on 758.

67. R. A. Chapman to the *New Yorker*, 29 Jun 1962, RC/BL, Folder 1612.

through which readers could construct images of themselves, not just of her. One correspondent, also a biology professor, wrote to say that it had been a "distinct privilege" to read her articles, and that "the work fits in with the material I have been teaching."[68] This is a very common pattern: a letter that both compliments Carson's work and simultaneously credentials the letter writer as a participant in the same struggle. Many people sent Carson newspaper clippings, or simply told her of their worries, fears, and actions—or updated her on news from their locality that bore on what they clearly conceived of as a shared crusade.

Readers could and did feel qualified to judge the merits of her case without—or with only limited—recourse to expert analyses of it. Part of this came from the inherently local nature of the evidence Carson marshaled. One correspondent, after saying that "it is shocking to realize how much of the joy and beauty of life is being destroyed," told Carson of a recent trip to Illinois. She writes that she had personally witnessed the effects of chemicals on vineyards in that state, also noting that it was rare to hear bird songs where she was—whereas just a few years ago they had been so plentiful as to be difficult to distinguish.[69] The evidence of readers' own eyes lent confirmation to Carson's message. Small wonder that she was not a larger-than-life icon; people could confirm her assessments for themselves. And, in many cases, they had already "slowly been becoming aware of the great problems modern chemicals may pose."[70] This prior knowledge casts an interesting gloss on the action many readers felt inspired to take—an action that was itself conditioned both by local knowledge and by ways of validating that knowledge which did not depend on professional experts. The fact that some readers of Carson's work were inspired to take action is itself noteworthy, as are the opportunities for the "local politicking" that one writer wanted to engage in.[71] Asking for reprints presupposes both the accessibility of Carson's explanations and the ability of the imagined readers to understand the technical material and its consequences. The visible, local nature of the problem that Carson identified was central to public discourse about her. Readers could see evidence for themselves, turning them into active assessors of scientific assertions rather than passive spectators to a debate between experts.

68. Marshall Eyster to Rachel Carson, 23 Jul 1962, RC/BL, Folder 1612.
69. Lillian Snyder to Rachel Carson, RC/BL (ref. 32).
70. Edwin Emerick to Rachel Carson, 20 Jan 1963, RC/BL, Folder 1619.
71. R. S. Stroud to the *New Yorker*, 15 Jul 1962, RC/BL, Folder 1611.

Readers who felt materially invested in the work of *Silent Spring* had noticed something critical about it. As evident as Carson's singular role was, the book also reflects enormous if informal collaboration with many correspondents and colleagues. Linda Lear's biography details these many interactions, and their importance to both Carson's life and that of her most famous book.[72] The critical point for her public image is that readers could get a sense of this production process without knowing all of the specifics; as Bonnie Foote has written, "the book bears witness to the network that produced it."[73] Carson's admirers became willing participants in the extension of this network from production to consumption. For instance, the letters she received are replete with offers to help, ideas for future activism, and relevant news. One reader wanted to help create "one organization which would tie all these various factions together in a group for protest," showing both an awareness of all the other efforts against pesticides already taking place *and* a desire to further such activity.[74] Many people asked for multiple reprints of the articles for distribution to help get the message out; one correspondent from Iowa felt a particular urgency to act in his locality, because "if any part of the country needs knowing what these poison chemicals are doing it is this part of the corn belt where spraying is so common."[75] And a woman from New Hampshire sounded a similar note, wanting to distribute the magazine to her neighbors who did not read the *New Yorker*, but whom she felt certain would agree with Carson if they only knew the facts.[76] While her detractors often used institutional prestige and other markers of difference and status to bolster their side, part of Carson's appeal was that she quite explicitly welcomed broader participation in the debate. Linda Lear identifies one speech in which Carson "told her audience that she had been impressed by the sense of personal responsibility" in the letters she received. Lear notes that Carson "thought this reflected a change in public attitude," in which people no longer assumed that someone else was looking after the things they cared about.[77] Whether sending clippings, reporting on new developments, or writing of confirming observations in a

72. Lear, *Rachel Carson* (ref. 1). This idea can be seen throughout Lear's biography, particularly in the sections on *Silent Spring*.

73. Bonnie Foote, "The Narrative Interactions of *Silent Spring*: Bridging Literary Criticism and Ecocriticism," *New Literary History* 38, no. 4 (2007): 739–53, on 741.

74. Marjorie Arnett to Rachel Carson, 17 Jan 1963, RC/BL, Folder 1619.

75. Gilbert Knudson to the *New Yorker*, 6 Jul 1962, RC/BL, Folder 1611.

76. Ms. Yluisakee to the *New Yorker*, undated letter, RC/BL, Folder 1611.

77. Lear, *Rachel Carson* (ref. 1), 423.

Midwestern city or in a Maryland suburb, the localized manifestations of the problem allowed to people to feel like active participants in, rather than passive fans of, Carson's crusade.[78]

The nature of this appeal has several clear resonances with other changes taking place in cultural attitudes toward science in the postwar period. It speaks, for example, to the increasing sense of responsibility that many Americans wished to see in their scientists, especially after World War II. It also recalls the increasingly wide audience for ecological and holistic perspectives on the natural world. Additionally, it is a phenomenon that makes sense alongside particular developments of the early 1960s, including a general questioning of authority and mounting doubts about what historians have termed the political "consensus" of the early Cold War. Science could be both object and agent of such questioning. Kelly Moore's *Disrupting Science* offers three ways that scientists themselves could and did meet the challenges of their social responsibility after World War II: moral individualism, information dissemination, and critiques of capitalism.[79] All of these things are visible in Carson's own efforts, as Moore notes.[80] These modes of activism provide important context for the construction of Carson's iconic status, because it helps explain the kind of scientific icon she became. Nonscientific appeal is the mechanism by which she became a scientific celebrity. But a full picture of the cultural function of this celebrity emerges only when the nonscientific narratives are situated in the context of 1960s science activism. Nonscientific appeal allowed Carson to bridge—not uniquely, but prominently—two important developments in the relationship between science and its publics. The first was the science information movement, which emphasized the necessity of educating the public in order to democratize policy decisions about technical issues. The second was an assertion that nonexperts could play actual roles in making science, not simply directing its use.[81] Both of these developments served to democratize science's social place: the former by insisting that nonexperts could be informed

78. Sandra Showalter to Rachel Carson, 8 Aug 1963, RC/BL, Folder 1619; J. M. Burgers to Rachel Carson, 21 Jun 1962, RC/BL, Folder 1617.

79. Moore, *Disrupting Science* (ref. 14), 6–7.

80. Ibid., 124.

81. On the subject of lay expertise, see, for example, Steven Epstein, "The Construction of Lay Expertise: AIDS Activism and the Forging of Credibility in the Reform of Clinical Trials," *Science, Technology, and Human Values* 20, no. 4 (1995): 408–37; Wendy Kline, "Please Include This in Your Book: Readers Respond to *Our Bodies, Ourselves*," *Bulletin of the History of Medicine* 79, no. 1 (2005): 81–110.

consumers of science, and the latter by insisting that they could be involved in its production as well. The thorough blending of scientific and nonscientific worlds that was a part of Carson's image and practice enabled her to embody both developments for those inclined to applaud them.

THE EXCEPTION OR THE RULE?

How representative is Carson? Would nonscientific appeal play itself out, and have similar consequences, in the public images of other scientific and/or environmental icons? Of course, Carson is a consequential enough figure in her own right that her image is worth studying even apart from this question. But it is still worth asking what broader lessons her case might suggest. In some respects, the story of her public image does seem transferrable to at least some other scientists, particularly if one breaks down her nonscientific appeal into its component parts. For example, the gendered nature of discourse surrounding her—and particularly its presence in all kinds of views, not just negative ones—seems likely to be applicable to other iconic female scientists. And the political critique almost inherent in ecologically based social commentary seems likely to condition public discourse about environmental icons in similar, if not identical, ways. On the other hand, there are ample grounds for seeing Carson as a very atypical public scientist. Her accessible prose, outsider status, controversial stances, and chosen field are all factors that would apply to some, but hardly all, other publicly prominent scientists. Questions about Carson's representativeness are further complicated by the realization that "the public" is not a static entity. In his influential *Publics and Counterpublics*, Michael Warner demonstrates that "publics" do not exist apart from specific texts; discourses and publics define themselves in relation to each other.[82] In other words, not only does Carson herself differ from other scientific icons, but the "public" that discusses her cannot be considered wholly coterminous with the "public" that discusses Barry Commoner, Paul Ehrlich, Margaret Mead, Linus Pauling, or any other scientific icon. Warner's analysis may complicate our attempts to broaden Carson's story—or any other public image account—but it also provides a direction for such effort. It suggests, perhaps counterintuitively, that the proper place to look for the representativeness of Carson's image

82. Michael Warner, *Publics and Counterpublics* (New York: Zone Books, 2002). See esp. chap. 2, "Publics and Counterpublics."

is not in the content of that image. Nor is it in her person, or the public that chose (or didn't choose) to admire her. Rather, it is in the character of the interaction among person, image, and public.

From this perspective, focusing not on the constituent elements but on the character of their interaction, Carson's case suggests several broader patterns within the general framework of nonscientific appeal. The first is that the idea of nonscientific appeal is a fundamentally relational concept. Descriptors such as "scientific" or "nonscientific" are never static ideas in the popular mind. Furthermore, they are perceptual categories. In addition to being fluid, they may have only a loose relationship to any accurate description of the technical or nontechnical nature of their subject. Far from being problematic, however, this fluidity is what makes nonscientific appeal a useful framework. Whether or not Carson is properly considered a scientist—as opposed to environmentalist, writer, or activist—the fact that she sat at the center of a debate about the proper boundaries of science makes her a useful lens through which to examine the nature of those limits and perceptions at a particular historical moment. Secondly, the focus on Carson as an individual is worth noting. To the extent that conceiving of individual heroics is a misleading way to understand scientific work, it functions as a nonscientific element in public understandings of science. It is also a persistent mode through which outsiders understand the scientific enterprise. In this respect, it recalls Steven Shapin's argument about the persistence of the personal in judging science even into the twentieth-century sites where scientific practice has supposedly left such modes behind.[83] Nonscientific appeal suggests that Shapin's framework is relevant to public perceptions of science, not simply its institutional functioning.

Most broadly, however, it appears that nonscientific attributes function as a way of resisting science. And this may be true even when they are part of admiring portrayals. Carson's fans, generally speaking, seemed to appreciate and admire science. But their reasons for doing so suggest something important about public identification with science: it takes place when it can be understood in terms of familiar, comforting, *nonscientific* frameworks. Science itself—or, at least, what particular readers understand to be science—remains alien. This suggests that admirers of science and scientists may share an interpretative bias—making judgments based on nonscientific factors—that is more obviously a property of those who are more skeptical of science. This notion is

83. Steven Shapin, *The Scientific Life: A Moral History of a Late Modern Vocation* (Chicago: University of Chicago Press, 2008).

potentially applicable beyond the subject of scientific icons to a wide range of questions in the public understanding of science. And it is particularly relevant for scholars interested in what goes in the minds of Americans who support science, because it begins to question whether such support is fundamentally about science at all.

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