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# The Power of Words and the Tides of History: Reflections on *Man and Nature* and *Silent Spring*

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*The silent power of books is a great power in the world....  
Silent, passive, and noiseless though they be, they may yet set in  
action countless multitudes, and change the order of nations*

Giles (n. d.).

So wrote Henry Giles, an Irish-born, American clergyman, who gained a modest reputation, in the mid-nineteenth century, as a skilled orator, lecturer, and author (Rich, 1891). Although he is now largely forgotten, these words provide a forceful touchstone for this essay, which seeks to explore some of the interconnections among knowledge, power, and action by examining how two passive and noiseless artifacts—books published in the nineteenth and twentieth centuries—brought new understanding (knowledge) to a diverse if not necessarily countless body of readers, and worked, more or less efficaciously, to change the ways in which some of them (if not entire nations) thought about human-environment relations.

To frame this rumination, I begin with three propositions—two from the nineteenth-century Scottish philosopher, historian, and satirical essayist, Thomas Carlyle, and one of more recent and less distinct provenance—that point broadly toward what might be characterized, in more formal discourse, as the notions of agency, structure, and the immutable mobile.

1. “the History of the World is . . .the Biography of Great Men.” (Carlyle, 1840, Project Gutenberg E-Text 1091)
2. Lives are pebbles dropped into the sea of history. They have an impact, but it is ephemeral. Spreading ripples chart their effect and draw the attention of people

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nearby. But the swell they create soon fades, to be enveloped by the deeper tide of social and historical forces.<sup>1</sup>

3. “The Writer of a Book, is not he a Preacher preaching not to this parish or that, on this day or that, but to all men in all times and places?” (Carlyle, 1840/2007, p. 101)

These claims provide a foundation for considering how one man and one woman—who were certainly preachers and people whom Carlyle might have considered “great”—made splashes that helped to move the tides of time. This man and woman lived and worked approximately a century apart. Both were Americans, one from Vermont, the other from Pennsylvania. The man, George Perkins Marsh (1801–1882), has been described as “the fountainhead of the conservation movement” and the woman, Rachel Carson (1907–1964), as someone who “altered the balance of power in the world” (Hynes, 1989, p. 3) by encouraging the emergence of the new environmental movement. They stand therefore as key players in the development of what the historian Samuel P. Hays (1959, 1987) described, and contrasted, as the production- and amenity-oriented attitudes toward the environment characteristic (respectively) of the early- and late-twentieth century. Both were prolific authors, but their reputations rest, largely, on single works: *Man and Nature; or, Physical Geography as Modified by Human Action*, in Marsh’s case, and *Silent Spring* in Carson’s (Carson, 1962; Marsh, 1864).

Given the iconic status of these works and their authors, and the massive influence attributed to them, I seek to understand the power of words and the knowledge they convey by asking where, when, how, and why the ideas in Marsh’s and Carson’s landmark books were so important? Doing so raises several other questions: Were the arguments unprecedented? Where did they come from? Where did they go? How did they work? Were they framed in particularly novel and/or compelling ways? What facilitated their dissemination? How did they gain purchase? Were they lightning bolts that ignited inert populations or merely winds that fanned already-glowing embers and flickering flames?

In short, I interrogate the contents of these widely-cited books and attempt to excavate something of the social, economic, political, environmental, and intellectual contexts into which first Marsh’s and then Carson’s ideas were released, to see not only what a book or two can do—but also why and how they exercise influence. My approach is thus two-pronged. First, I chart some of the links between the books and their consequences, between the knowledge they contained and the power they exercised. This is, so to speak, to explore their “public lives” and to suggest why and how their challenging arguments had the impacts that they did—it is therefore an effort to reveal something of the ways in which they spoke truth to power. In a second, related, vein my aim is to explore how (and to what extent) these books laid

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<sup>1</sup>I have a long-standing interest in George Perkins Marsh—see Wynn (2004) and Wynn (2008)—but this paper reflects a special debt to a study by P. C. Murphy (2005) considering Rachel Carson’s *Silent Spring* from a “history of the book” perspective and a luminous essay by Adam Gopnik (2009), both of which prompted me to think anew about Marsh and *Man and Nature*. I draw the pebbles in the sea of history analogy from Gopnik.

the basis for what Jürgen Habermas (1998 and 1984, 1987) called communicative action, based on a “shared understanding that the goals [they articulated] are inherently reasonable or merit-worthy” (Bohman & Rehg, 2009). In other words, I hope that this little foray might encourage deeper appreciation of both these books, as contributions to a discourse of environmental concern that has exhibited sufficient staying power to influence government policies.

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## Man and Nature: A Book and Its Reception

Marsh began writing *Man and Nature* in his home town of Burlington, Vermont, in the spring of 1860 and completed it in Italy, where he was serving as his country’s ambassador, in 1864. By his own account, he first imagined the book as “a little volume” intended to challenge prevailing ideas that “the earth made man” by demonstrating that “man in fact made the earth” (Lowenthal, 2000a, p. 267). In the end, the “burly volume” (p. 269) ran to 465 pages (and subsequent editions were even longer). The purpose of the book was set out, plainly, in its first few lines (Marsh, 1864):

The object ... is: to indicate the character and, approximately, the extent of the changes produced by human action in the physical conditions of the globe we inhabit; to point out the dangers of imprudence and the necessity of caution in all operations which, on a large scale, interfere with the spontaneous arrangements of the organic or the inorganic world; to suggest the possibility and the importance of the restoration of disturbed harmonies and the material improvement of waste and exhausted regions; and, incidentally, to illustrate the doctrine, that man is, in both kind and degree, a power of a higher order than any of the other forms of animated life, which, like him, are nourished at the table of bounteous nature (p. iii).

Six chapters follow, each of them intimidating in scope and erudition. Chapter 1 is essentially an essay on “the ravages committed by man.” Here, the author laid out his thesis, dealing in broad brush strokes with “the general effects and the prospective consequences of human action upon the earth’s surface and the life which peoples it.” The chapter opens with a powerful, five-page rumination on the natural advantages and physical decay of the territory of the Roman Empire, and of other parts of the Old World, and ends some fifty pages later with one of the book’s signature sentences:

But we are, even now, breaking up the floor and wainscoting and doors and window frames of our [earthly] dwelling, for fuel to warm our bodies and seethe our pottage, and the world cannot afford to wait till the slow and sure progress of exact science has taught it a better economy (Marsh, 1864, p. 55).

Chapter 2 deals with the “Transfer, Modification and Extirpation of Vegetable and Animal Species.” Chapter 3, 200 pages long, focuses on “The Woods” (Forests), Chap. 4 on “The Waters” and Chap. 5 on “The Sands.” The book then moves to an end with a series of reflections on “Projected or Possible Geographical Changes by Man.”

Page after page, Marsh offers up an astonishingly diverse array of sources: the book is a heady, and often difficult, brew of interpretations, clarifications, asides and quotations; quotations from classical texts, quotations from the works of engineers and foresters, quotations from newspapers and plays, quotations from dictionaries and personal letters, all of which are blended in what David Lowenthal called a “stylistic mélange” with data from censuses and accounts from life (Marsh, 1864/1965, p. xx). Marsh probably had a smile on his face when he informed a friend that *Man and Nature* was an effort “to tell everything I know & have not told” elsewhere. But the weary reader working through this complex long-winded work might justifiably conclude that he was not far off the mark. The result of Marsh’s labors was clearly (as even his biographer David Lowenthal (2000a, pp. 268–269) conceded “a volume not fully digested nor easily digestible.”

Yet Lowenthal (1958) describes this selfsame book as “the most important and original American geographical work of the nineteenth century,” and argues that “*Man and Nature* ushered in a revolution in how people conceived their relations with the earth” (p. 246, see also 2000b). Others have been equally enthusiastic. The modern-day environmental historian William Cronon ranks it as one of the “three books by American authors that have had the greatest impact on environmental politics and on the struggle to build more responsible human relations with the natural world.” (Cronon, 2000, p. ix). More than this, Lowenthal argues, *Man and Nature* stood second only to Charles Darwin’s *On the Origin of Species* as “the most influential text of its time to link culture with nature, science with society, landscape with history” (Lowenthal, 2000a, p. xv).

In fact, *Man and Nature* had a mixed reception. Initial responses were perhaps surprisingly favorable, given—as one reviewer of the second edition had it—that “the matters of which Mr. Marsh treats were only of curious interest” in 1864 (Anon, 1875, p. 124). Although Marsh feared that it would ruin his publisher, more than a thousand copies of the book were sold within months of its release. Early in the 1870s, asserts Lowenthal (in Marsh, 1864/1965, p. xxii), the book “was a classic of international repute.” A contributor to *The Nation* (1874, cited in Marsh, 1864/1965 p. xxii), reviewing the enlarged and rebranded (with *The Earth* replacing *Physical geography* in the subtitle), but otherwise not greatly changed second edition of 1874, described it as “one of the most useful and suggestive works ever published” and thought that it carried “the force of a revelation.” On the strength of this work, observed John Bigelow, sometime owner of the *New York Evening Post* and American Minister to France, in a letter to Marsh, he would stand among geographers as Adam Smith did among political economists and the Comte de Buffon among natural historians (Lowenthal, 2000a, p. 302).

The book quickly caught the attention of those concerned about the destruction of eastern North American forests. Franklin B. Hough, who had noted the decline in standing timber between 1855 and 1870 charted by the New York State census (which he supervised), drew on Marsh’s insights in a presentation to the 1873 meeting of the American Association for the Advancement of Science: *On the Duty of Governments in the Preservation of Forests* (Hough, 1873). Hough was subsequently appointed to the U.S. Department of Agriculture to assess the state of American forests and he became the first chief of the Division of Forestry in USDA

in 1883. His successor credited Marsh with identifying “our destructive treatment of the forests and the necessity of adopting a different course” (Lowenthal, 1958, p. 269). Even Gifford Pinchot, widely regarded as the founder of the American forest conservation movement, described Marsh’s book as “epoch-making”, although (ever anxious to portray himself as “breaking new ground”) he elsewhere insisted that few Americans had read it and that it had little impact upon popular opinion (Miller, 2001, pp. 55–56; Pinchot, 1947, pp. xvi–xvii).

Beyond the United States, *Man and Nature* similarly influenced scholars and foresters in the decade or two after its publication. In France, Élisée Reclus incorporated its insights into his *La Terre*, published in 1868; geologists Charles Lyell and Arnold Guyot, whose earlier views Marsh challenged, acknowledged its importance; and Italian legislators incorporated references to the book in forest laws approved in the 1870s and 1880s. The book shaped practice in the Imperial Forestry Department of India, one of the officers of which wrote Marsh in 1868 to say that he had “carried ... [*Man and Nature*] with [him] along the slope of the Northern Himalaya and into Kashmir and Tibet” (Lowenthal, 2000a, p. 304, 2000b, p. 4). In the same year, New Zealand legislators quoted liberally from *Man and Nature* (although often without attribution) in their efforts to halt the deforestation and “barbarous improvidence” that threatened to turn their recently-colonized “land of milk and honey” into a “howling desolation” (Wynn, 1977, 1979).

For all that, Harvard professor and public intellectual Charles Eliot Norton lamented, a quarter century after the publication of *Man and Nature*, that Marsh’s warnings had fallen “upon deaf ears.” Although a third edition of the book was published in 1884, and reprinted as late as 1907, Charles S. Sargent, an eminent botanist and director of Harvard University’s Arnold Arboretum, reflected, in 1908, that “the younger generation” seemed to know nothing of it (Lowenthal, 2000a, p. 305). Perhaps most books and ideas follow a similar trajectory: they enjoy a more or less bright and protracted period in the sun (and 25 years, praise to the heavens, and world-wide policy impact are no trifles) before they fade from public consciousness. But *Man and Nature*’s day was not yet done—although its revitalization was prolonged and wavering.

In 1920, the American historian and thinker Lewis Mumford learned of Marsh’s work in correspondence with the Scottish polymath Patrick Geddes. Four years later he referred to Marsh in *Sticks and Stones*, a study of American architecture and civilization. In *The Brown Decades*, early in the 1930s, Mumford coined the resonant description of Marsh as the fountainhead of the conservation movement (and later claimed that *Man and Nature* was “quite forgotten even by geographers” until this act of resurrection). A few years later, the geographer Carl O. Sauer (1938/1963) added credence to this claim by describing Marsh as a “forgotten scientist” (pp. 147–148; see also Lowenthal, 2000a, 2000b, Koelsch, 2012, and Lowenthal, 2013).<sup>2</sup> In 1954, in another attempt at rebirth, Sauer’s student Andrew Hill Clark

<sup>2</sup>Patrick Geddes to Lewis Mumford, November 13, 1920, in Novak (1995), Mumford (1955, p. 201), Sauer (1963, pp. 147–148). Mumford’s “quite forgotten” claim is in Mumford to Babette Deutsch, October 30, 1960, in Lewis Mumford (1979, p. 177). See also Lowenthal (2000a, 2000b), where these sources are noted.

(1954) described Marsh as “among the first, and . . . one of the greatest of, our historical geographers”—but added (in ironic and probably unknowing refutation of John Bigelow), that “all too few modern geographers” think of him “as one of their own” (p. 81). A year later, however, the cobwebs of neglect were more vigorously brushed away when Mumford and Sauer dedicated a symposium considering “man’s role in changing the face of the earth” to Marsh (Thomas Jr., 1956). In 1963, a year after the publication of *Silent Spring*, U.S. Secretary of the Interior Stewart Udall hailed *Man and Nature* as “the beginning of land wisdom in this country”—although then as now Thoreau, Muir, and Leopold (and Rachel Carson, who was described that same year as the fountainhead of the new environmental movement by none other than Udall himself) almost certainly ranked well ahead of Marsh in public consciousness of these things (Udall, 1963, pp. 69–82).<sup>3</sup>

In recent decades several questions have been raised about the influence and oft-proclaimed primacy of *Man and Nature*. Some scholars have balked at Lowenthal’s claims that the first “realisation of human impact on Earth stems from Marsh’s *Man and Nature*” and that “only the most scanty ecological awareness antedates Marsh’s own writings” (Lowenthal, 2000a, pp. 419–422). Environmental historian Richard Grove has argued that “western environmental concern and concomitant attempts at conservationist intervention” long pre-dated the publication of *Man and Nature* (Grove, 1995; in related vein see Girard, 1990, pp. 63–80). In his view, “reasoned awareness of the wholesale vulnerability of the earth to man” as well as the idea of state-directed environmental (or resource) conservation emerged gradually from the experience of colonial encounters with tropical regions and island ecosystems well before 1864. Others have noted that Immanuel Kant (1802) included humankind among the natural phenomena producing environmental change (in his *Physische Geographie*), and that long before Marsh, the Comte de Buffon (1782) wrote that “the state in which we see nature today is as much our work as it is hers. We have learned to temper her, to modify her, to fit her to our needs and our desires” (see Glacken 1967, pp. 568–575, 658–659, 666, 698–702).

On a somewhat different tack, the American scholar Richard Judd (1997) has found much evidence that ordinary people working the land of early New England developed grassroots strategies of resource conservation as integral elements of their local cultures well before the middle of the nineteenth century, and he goes so far as to insist that ecological principles were “common currency in early American natural history.” On this account, many of Marsh’s most cogent claims were foreshadowed in the actions of ordinary early New Englanders. And they were certainly adumbrated in print as early as 1835 when Titus Smith (1835) of Nova Scotia drew examples from the once prosperous, then desiccated, landscapes of the eastern Mediterranean to argue “that man has, by mismanagement, impoverished some of the finest countries on earth.”

Lowenthal (2000a) has pushed back against what he describes as these “Marsh put-down[s]” by people who would diminish the reputation of “the prophet of

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<sup>3</sup>Lowenthal (2000b), footnote 50 includes the following: “From 1955 to 1987 the *Science Citation Index* had 413 references to Thoreau, 248 to Muir, and 68 to Marsh.”

conservation” by elevating “unsung hoi polloi on the mainstream’s margins” (p. 419) to unwarranted prominence. The reputation of the great Marsh, he contends, is being tarnished by modern “wilderness-bent” environmentalists who too readily associate him with the managerialist emphasis of the 1955 *Man’s Role* symposium, “impose their own apartheid on the past” and dismiss him as a resource-conserving economist rather than a preservationist poet. It is being scanted by “populist revisionists” who celebrate rural virtues and indict Marsh for turning the folk wisdom of his neighbors into a coda that justified restrictions on resource use and disempowered ordinary citizens. And it is being undermined by claims that his insights were “largely mistaken . . . unoriginal or inconsequential,” (p. 423) and that his influence trended toward “technocratic, elitist, socially regressive imperialist or anthropocentric” (p. 423) outcomes. All such criticism, says Lowenthal is “unfounded or irrelevant” (p. 423, Lowenthal, 2000b, *passim*).

To summarize a long story too starkly, *Man and Nature* was read (if not always cited) in the quarter century after its publication, and cited (but not much read) through the next 75 (or hundred) years. In recent times new and in some cases explicitly revisionist accounts of changing attitudes toward the environment have whittled away at the underpinnings of Marsh’s reputation but they have not quite or yet dislodged the man and his book from their pedestal. Modern environmental texts, observes David Lowenthal (2000a, p. 415) “pay almost obligatory homage to *Man and Nature*, then mention it no more.

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## Man and Nature: The Fate and Power of Words

How then to explain the lasting reputation yet uneven influence of *Man and Nature*? Why, so to speak, has the size of its parish and the respect afforded its preachings varied so greatly over the last 150 years? One approach, which offers an approximation of an answer, is to map interest in the book against changing patterns of environmental concern. *Man and Nature* spoke most clearly, in the third quarter of the nineteenth century, to those concerned with the fate of forests because eastern North Americans were confronting (and documenting) the consequences of a prolonged assault on the resource, rising prices for fuelwood, and so on (Williams, 1989). In Europe, and especially in India, where the Imperial Forest Department was established in 1864, the book fell in timely fashion into the hands of an emerging cadre of professionals newly charged with managing and administering forest and woodlands (Rajan, 2006). And in recently-settled New Zealand, Marsh’s stentorian warnings about the erosive consequences of deforestation seemed highly pertinent in a dynamic geological environment in which upland denudation was far more active than in the “old countries” from which most settlers came (Wynn, 2002). By the last decades of the nineteenth century however, the extension of the American railroad network, the opening to exploitation of enormous forest stands in the upper Great Lakes states and early engagements with the magnificent coastal forests of the west had allayed (at least temporarily) North American fears of timber famine (Williams). A few years later, Gifford Pinchot and Theodore Roosevelt

began to construct their own stories about the rise of American conservation and these had little room for precursors (Miller, 2001).

William Greeley's article (1925) on "The Relation of Geography to Timber Supply," in the first issue of *Economic Geography*, both marked and gave graphic expression to, renewed concerns about resource depletion in the 1920s, but the impetus toward conservation moved resolutely along tracks laid down with reference to the gospel of efficiency (Hays, 1959). *Man and Nature* fell from public consciousness and its author disappeared from the intellectual horizons of all but a handful of interacting scholars left to lament that Marsh had been forgotten. The leaders of this small group dedicated their 1955 symposium on *Man's Role in Changing the Face of the Earth* to Marsh, and brought his contribution back into the limelight, albeit in the context of a meeting in which complacency and optimistic belief in the capacity of human ingenuity and technology to address environmental ills were more common than were Marsh's more apocalyptic concerns. For a few years thereafter, Marsh was a name to be conjured with, but the times they truly were a changing. New concerns—nuclear Armageddon, the bioaccumulation of toxic substances, over-population—seized imaginations and new clairvoyants—Carson, Commoner, Ehrlich—pondered futures and global predicaments beyond those ever imagined by Marsh (Egan, 2007; Ehrlich, 1968). Beauty, health, and permanence became the watchwords of the new environmental movement and the newly-identified threats to permanence seemed far more urgent than the specter of desiccation that formed the centerpiece of Marsh's argument and that had, in some metaphorical sense at least, been stared down during the Dust Bowl of the 1930s (Hays, 1987). Author and title lingered on library shelves, but *Man and Nature* was a compendium of words from and for another era. Its ripples were but faint traces on the larger tide of changed times. Lip service was all that most people afforded the great book—unless their purpose was to "correct the record" and tell another tale about the importance (or otherwise) of *Man and Nature*.

David Lowenthal offers a rather different story about the reputational trajectory of Marsh and *Man and Nature*, the essence of which has been the foil for recent critiques of both the author and his book. For Lowenthal (who has spent half a century in Marsh's literary presence and who is undoubtedly the most knowledgeable student of the man and his works), the impact of *Man and Nature* owed almost everything to its author's unique gifts. It was "the sweep of his data, the clarity of his synthesis, and the force of his conclusion [that] made *Man and Nature* an almost instant classic" (Lowenthal, 2000b, p. 4). Marsh was a visionary, a prophet, and his light continues to shine undimmed down the decades. He was "the first to show that human actions had unintended consequences of unforeseeable magnitude" (Lowenthal, 2000a, p. 430). Or as Lowenthal (2000a) has it in one of his most pointed phrases "[a]nyone with a hoe or an ax knows what he is doing, but before Marsh no one had seen the total effects of all axes and hoes" (p. xxvii). The "perceptive powers" that allowed Marsh to see the big picture so clearly, derived (again according to Lowenthal, 2000a), from "the creative coincidence" of Marsh's "own special skills and circumstances with a habit . . . of contrasting Old World and New World perspectives" (p. 430). In this account—and it has been elaborated repeatedly



by Lowenthal —Marsh was a great man and his book a lightning bolt of white hot insight that forged “a truly modern way of looking at the world, of thinking about how people live in and react on the fabric of the landscape they inhabit” (Lowenthal, 2000a, pp. 429–430). By combining ecological insight with an appreciation of the need for social reform, says Lowenthal, Marsh framed arguments that retain “a lasting force four generations later.” That they are not more widely appreciated in the twenty-first century has more to do with the myopia of the present than the power and prescience of those arguments. Marsh’s words can yet help to “bridge the gulf between the environment we have and the environment we need” (Lowenthal, 2000b, p. 16).

Both of these accounts hold some water. For all their thumbnail-sketch brevity, however, neither seems capable of providing an entirely satisfying account of how *Man and Nature* had the impact it did and why it has been so little engaged in recent time. In an effort to address this conundrum, I turn now to look more closely at the form and content of Marsh’s book and the context into which it was released. This, it seems to me, is an important thing to do. To modern eyes, *Man and Nature* is a very peculiar book indeed. The essence of Marsh’s approach lies in the observation that “labor is life”; seeking to stimulate rather than to satisfy curiosity, he flatly denies any desire “to save my readers the labor of observation or of thought” (Marsh, 1864, p. 10). If this makes the book tough to read, then so be it. “Self is the schoolmaster whose lessons are best worth his wages,” and those who harbor doubts would do well to recall that “Death lives where power lies unused” (p. 10).<sup>4</sup>

*Man and Nature* requires the reader to develop that “power most important to cultivate, and, at the same time, hardest to acquire,” the power “of seeing what is before him” (Marsh, 1864, p. 10). There are “no more important practical lessons in this earthly life of ours,” asserted Marsh, “than those relating to the employment of the sense of vision in the study of nature.” But, he cautioned, “the eye sees only what it seeks”; like a mirror, “it does not necessarily perceive what it reflects” (p. 10). Sight, said Marsh “is a faculty; seeing, an art”—and then he elaborated on this seven-word claim (in a manner that is entirely typical) with a 700 word footnote (p. 10). This note begins with the observation that “skill in marksmanship . . . depends more upon the training of the eye than is generally supposed,” (p. 11) and discusses the use of firearms and almost every other known projectile weapon. Then there is a comment on how the Indians of the Amazon shoot tortoises:

As the arrow, if aimed directly at the floating tortoise, would strike it at a small angle, and glance from its flat and wet shell, the archers have a peculiar method of shooting. They are able to calculate exactly their own muscular effort, the velocity of the stream, the distance and size of the tortoise, and they shoot the arrow directly up into the air, so that it falls almost vertically upon the shell of the tortoise, and sticks in it. (p. 11)

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<sup>4</sup>Marsh (1864, p. 10) renders this phrase as “Death lives where power lives unused,” and attributes it to a verse addressed to Sir Walter Raleigh and quoted by Hakluyt. Christopher Hill (1997, p. 141) attributes the version used here to George Chapman, who prefixed a poem including this line to Lawrence Kemyis “Relation of the second voyage to Guiana (1596)”.

This is followed by a riff on the etymology of the word *aim*, a discussion of how blind children are taught to write, and reflections on the visual acuity of Classical artists: “Glasses ground convex have been found at Pompeii,” Marsh informs his readers, “but they are too rudely fashioned and too imperfectly polished to have been of any practical use for optical purposes” (p. 12).

Examples could be multiplied and multiplied again. There is a quality of considered judgment and a sort of magic realism evident on every page of the book. Tracing the impacts of human actions on the physical earth was no easy task. A couple of centuries back (i.e., before the middle of the seventeenth century) knowledge of meteorological conditions derived from imperfect sources, “from the vague statements of ancient historians and geographers in regard to the volume of rivers, and . . . from other almost purely casual sources of information” (Marsh, 1864, p. 16). Ancient dwelling sites, “memorials of races which have left no written records” (p. 16), have yielded animal and vegetable remains from which “ingenious inferences have been drawn as to the climates of Central and Northern Europe” (p. 17) in earlier times. But, a note of caution:

Even if we suppose an identity of species, of race, and of habit to be established between a given ancient and modern plant, the negative fact that the latter will not grow now where it flourished 2,000 years ago does not in all cases prove a change of climate. The same result might follow from the exhaustion of the soil,—or from a change in the quantity of moisture it habitually contains. (p. 20)

More generally, it is important to remember that “There are . . . sources of error which have not always been sufficiently guarded against in making these estimates” (p. 17). If you are having a hard time figuring out quite how all this soil chemistry and capillary moisture retention works, then there is a footnote on the purported introduction of madder to southern France and the decline in the quality of the crop over a century (p. 20). But if this is too much, then consider this:

When a boat, composed of several pieces of wood fastened together by pins of the same material, is dug out of a bog, it is inferred that the vessel, the skeletons, and the implements found with it, belong to an age when the use of iron was not known to the builders. But this conclusion is not warranted by the simple fact that metals were not employed in its construction; for the Nubians at this day build boats large enough to carry half a dozen persons across the Nile, out of small pieces of acacia wood pinned together entirely with wooden bolts. (p. 17)

And in similar vein,

although it has been said that stone weapons are not found in Sicily, except in certain caves half filled with the skeletons of extinct animals. . . . I suspect . . . [this] is because eyes familiar with such objects have not sought for them. In January, 1854, I picked up an arrow head of quartz in a little ravine or furrow just washed out by a heavy rain, in a field near the Simeto. It is rudely fashioned, but its artificial character and its special purpose are quite unequivocal. (p. 18)

There are important rhetorical qualities at work and on display in this passage. *Man and Nature* offers a long argument for ordinary readers. Marsh was explicit in proclaiming that his book was addressed “not to professed physicists, but to the

general intelligence of educated, observing, and thinking men; and that . . . [his] purpose is rather to make practical suggestions than to indulge in theoretical speculations” (Marsh, 1864, p. vi). It is remarkable for the sheer range of knowledge that it encompasses, and for (what is now called) its sympathetic summary of the ideas and interpretations of others. In this it bears comparison with the other great book of its age, *The Origin of Species* (Darwin, 1859). Both Marsh and Darwin were what Adam Gopnik (in his brilliant short study of Darwin and Lincoln) has called “nearsighted visionaries” (Gopnik, 2009, p. 19). They “particularized in everything” and their arguments, their “big ideas,” emerged from the welter of detail that they laid out for their readers. “They built their inspiration from induction” and relied upon the “slow crawl of fact”—much of it “certified” by the author’s personal observation—to give potency to their arguments (p. 20). Marsh, like Darwin, had (as Gopnik puts it)

written a book whose tone of empirical exactitude, fair-minded summary, and above all sweeping argumentative force—so subtly orchestrated that it acted not as a straitjacket on the argument pressing it in, but as a tide behind it, driving it forward—was almost impossible to resist. (p. 147)

This was a tide for its times. Like *The Origin of Species*, and Abraham Lincoln’s speech-making, *Man and Nature* is marked by a certain eloquence (now perhaps regarded as somewhat dated), by an expectation that curious and gentle readers would work hard to find their ways through great thickets of detail, and by an “insistent need to persuade and convince, argue and substantiate, talk and justify” (Gopnik, 2009, p. 183). This was a style much used in the Victorian era and perhaps especially common in natural history writing. In some ways it drew its inspiration from Alexander von Humboldt: think of his unrelenting efforts to catalogue minutiae, of his hauling a barometer across the spine of central America to chart variations in air pressure, of his conviction that large issues might be understood by detailed observations of small things and of his assertion of “mutual dependence and connection” in nature (Humboldt, 1845/1858, p. 8). But it was widely evident—from Gilbert White’s observations of the miniscule in Selborne to John Ruskin’s obsessive devotion to measurement in *Stones of Venice* (Ruskin, 1851–1853; White, 1789). There was, perhaps inevitably, a sort of helter-skelter quality to much of this prose. Yet these rhetorical commitments had consequences. According to Adam Gopnik (2009, pp. 73, 184), Lincoln (“who lived in a society of speaking”) used “the narrow language of the law to arrive at a voice of liberalism still resonant and convincing today” and Darwin (“who lived in a society of seeing”) used “the still more narrow language of natural observation . . . to change our ideas of life and time and history. Marsh, it seems to me, embodied both tendencies; he combined legal training with the habit of “close amateur looking” to drive home the message that “man has done much to mould the form of the earth’s surface” (Marsh, 1864, p. 13). Yet the tide behind *Man and Nature* lost energy as that behind *On the Origin of Species* did not, and Marsh’s memorial in Washington is the Smithsonian Institution (which he helped to found), not a statute on the National Mall. Why is this, one must ask?

One of the fundamental underpinnings of Marsh's argument, the very bedrock of *Man and Nature's* rhetorical power, was the notion of "nature's harmony" and its disruption. Nature was durable—until its balance was destroyed by human action. This was not to say that nature was stable and unchanging. As Marsh saw it,

every generation of trees leaves the soil in a different state from that in which it found it; every tree that springs up in a group of trees of another species than its own, grows under different influences of light and shade and atmosphere from its predecessors. (1864, p. 22)

Nature was dynamic, within limits, and the natural world had a certain resilience. The glacial pace of geological and astronomical changes allowed nature to respond without loss of equilibrium. Other small-scale changes could also be absorbed. When disturbed by natural forces, nature sought "at once to repair the superficial damage, and to restore . . . the former aspect" (p. 27). But human *ravages* destroyed nature's *balance*. They were hammer blows to the web of natural life. Wherever humans settled, there ensued "almost indiscriminate warfare" that "gradually eradicates or transforms every spontaneous product of the soil" (p. 41). Human actions—clearing forests first among them—amplified the intensity of erosion. Two or three generations of human action were capable of producing "effects as blasting as those generally ascribed to geological convulsions" and "laid waste the face of the earth more hopelessly than if it had been buried by a current of lava or a shower of volcanic sand" (p. 262). As societies armed with ever more powerful technologies exercised dominion over the earth, nature was despoiled beyond its capacity to heal itself. Marsh's book denounced these tendencies, so forcefully that large parts of it have an apocalyptic tone—although a second (less noticed) side of *Man and Nature* celebrates people's capacity to rebuild, restore, and reconstruct lands laid waste by the destructiveness of humankind, and urges societies to better stewardship of nature (Hall, 2005).

In assessing the impact of Darwin's great book, Adam Gopnik observes that "Scientific ideas become a whole climate of opinion when they can provide a set of metaphors for people who aren't doing science" (2009, pp. 152–153). Marsh (1864) certainly provided both powerful metaphors—"Breaking up the floor and wainscoting and doors and window frames of our [earthly] dwelling, for fuel to warm our bodies and seethe our pottage" is but the most well known—and lugubrious warnings (or moral injunctions)—". . . man is everywhere a disturbing agent. Wherever he plants his foot, the harmonies of nature are turned to discords" (p. 36)—to his readers in reminding them that "Man has too long forgotten that the earth was given to him for usufruct alone, not for consumption, still less for profligate waste" (p. 35). These echoing phrases struck a chord among his contemporaries confronting shortages of fuelwood, the erosion of hillslopes, the silting of millponds, and concerns about resource depletion.

But—Gopnik (2009) again—"for a new scientific theory to become . . . vastly influential" beyond its immediate sphere, it has to help "thinking people . . . interrogate the world in a new way." (p. 153). Despite Lowenthal's claims for Marsh's prescience, *Man and Nature* never quite achieved this level of probing insight. Marsh's embrace of the balance of nature was entirely orthodox. Although

Lowenthal (2000a) argues that “Marsh’s vision of a self-regulating nature . . . became, in its essential vision the ecological paradigm of the early twentieth century,” (p. 292) the idea is in fact a very old one. *Man and Nature* was at its most powerful in urging that humans had an impact upon nature. But this was no revelation in 1864. Marsh’s phrases may have been more compelling than those of other writers, but they did not bring light to the world. Fully 60 years earlier, Alexander von Humboldt traveling through the Equinoctial regions of America, had come upon Lake Tacarigua high in the mountains of Venezuela. The level of the lake had been sinking for years. It was surrounded by desiccated landscapes, “vast tracts of land . . . formerly inundated, now dry” (Humboldt quoted in Sachs, 2006, p. 77). The locals thought that the lake was draining through some subterranean outlet. But Humboldt offered a different explanation—and this is only the baldest summary of it: the changes were attributable to “the destruction of forests, the clearing of plains, and the [irrigated] cultivation of indigo” (p. 77).

In retrospect it seems to me that Marsh’s book was most effective in answering “what” questions, and in framing somewhat familiar arguments in powerful ways, and rather less successful at identifying “why” things happened as they did and revealing the world in truly new ways. People changed places, humankind modified the earth. There was little room to doubt this proposition in the mid-nineteenth century (indeed, rather like the idea of evolution, it was hardly revolutionary in 1859 (Stott, 2012)). To borrow Adam Gopnik’s (2009) wonderful imagery, Darwin’s great achievement was in taking “a poetic figure familiar to his grandfathers” and putting “an engine and a fan belt in it” (pp. 7–8). In other words, his triumph lay in finding the mechanism that drove evolution. Marsh never came as close to accounting for the transformations he documented; he told his readers what people did to the earth but rarely explained why.

There is a further point of intersection between *On the Origin of Species* and *Man and Nature* that warrants attention. The last lines of Marsh’s book serve both to explain the dense assemblage of detail in the preceding pages and to identify the big question with which it was most concerned.

The collection of phenomena must precede the analysis of them, and every new fact, illustrative of the action and, reaction between humanity and the material world around it, is another step toward the determination of the great question, whether man is of nature or above her. (Marsh, 1864, p. 549)

In the end, *Man and Nature* and *On the Origin of Species* address the same question—is man *of* nature or *above* her—and produce very different answers to it. Marsh concludes “above,” Darwin “of.” There is no evidence that Darwin knew of the arguments Marsh would articulate in *Man and Nature* when he wrote *The Origin*, but Marsh was certainly familiar with Darwin’s writings. Indeed he housed a certain suspicion of Darwin’s concept of evolution by natural selection, at least as it was brought to bear on cultural rather than natural history. To the philologist—and at least one obituary of Marsh celebrated his contributions to this realm above those represented by *Man and Nature*—the branching, ever more diverse, tree of life mapped a pattern that was utterly contrary to that revealed by the evolution of

languages. “History teaches us, the further back we go the wider was the diversity of speech among men” (Lowenthal, 2000a, p 306). Marsh also took gentle issue with Darwin for arguments that underestimated the duration and extent of human modifications of the earth. Most fundamentally, however, where Darwin saw humans located within nature—most famously expressed in the final chapter of *The Descent of Man*: “We thus learn that man is descended from a hairy quadruped, furnished with a tail and pointed ears, probably arboreal in its habits, and an inhabitant of the Old World” (Darwin, 1871, p. 291)—Marsh believed “that man is, in both kind and degree a power of higher order than any of the other forms of animated life” (Marsh, 1864, p. iii). On this he was firm. Man was not “part of nature” nor was “his action . . . controlled by what are called the laws of nature”. Indeed “a leading object” of *Man and Nature* was “to enforce the opposite opinion, and to illustrate that man . . . is a free moral agent working independently of nature” (Marsh to C. Scribner, 10 September 1863, cited by Lowenthal, 2000a, p. 291; see also more generally 2000b, p. 5).

These are the reasons why Marsh is now most generally acknowledged as a precursor rather than honored as a prophet, and why *Man and Nature* is known but hardly read these days. The two fundamental suppositions on which the book (and Marsh’s reputation) rest—that there is a balance of nature and that humankind stands apart from nature—have been reconsidered in recent years. Charles Elton, Daniel Botkin, and chaos theory largely put paid to the former (at least in the sense used by Marsh), and Rachel Carson (among others) gave the lie to the latter (Botkin, 1990; Elton, 1942).

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## Silent Spring: The Fate and Power of Words

Rachel Carson’s *Silent Spring*, a controversial best-selling book about the toxic side effects of widely-used chemical pesticides, herbicides, and fungicides, published by Houghton Mifflin in 1962, spawned immediate controversy in the media. Like *Man and Nature* (which opens, remember, by looking back to the desiccation of the Mediterranean littoral due to the improvidence of “man”), *Silent Spring* also opens with a bang, but Carson’s “hook” is forward-looking and fictional. Her *Fable for Tomorrow* tells of a beautiful (albeit non-existent) town nestled in the heart of American plenitude where, suddenly, animals die, people succumb to “mysterious maladies,” the bees disappear, and no birds sing. It was not witchcraft or enemy action that “silenced the rebirth of new life in this stricken world,” but a white granular powder that fell from the skies. “The people had done it themselves” (Carson, 1962, pp. 1–3).

Marsh’s argument was similar in some ways: man modified the earth, the consequences were deleterious, fields dried, soil blew, lakes shrank (until perhaps sedges withered at their former edges), and people brought all of this on themselves by their careless and profligate actions. But there were important differences between Marsh’s and Carson’s books. In pursuing her story, Carson developed a narrower, sharper identification of the villains of her piece than Marsh offered in his

scolding volume. Yes ‘the people’ were ultimately responsible for their plight. But they had remained inert—and allowed the specter of a Silent Spring into being—because they had been kept in the dark. Awareness of the threats posed by chemical pesticides was very limited because “this is an era of specialists . . . [and] also an era dominated by industry, in which the right to make a dollar at whatever cost is seldom challenged” (Carson, 1962, p. 13). Chemical companies and their employees, supporters, and spokespersons (who could not be expected to bite the hand that feeds them), had failed to disclose or denied what they knew to be true and, worse, had sometimes fobbed off public anxiety with “little tranquilizing pills of half truth” (p. 13). Even the government, which people had a right to regard as the protector of its citizens, had failed in its imputed responsibility to “secure [individuals] against lethal poisons” (p. 12). Research costing a fraction of the sum spent on developing toxic sprays could “keep poisons out of our waterways,” noted Carson in the final lines of a chapter entitled “Rivers of Death,” before ending with the rhetorical question: “When will the public become sufficiently aware of the facts to demand . . . action” (p. 152)? All of this offered concerned citizens a clear set of targets, set up the possibility of an “us” against “them” struggle, and dressed the battle in Old Testament cloth as a confrontation between David and Goliath—in marked contrast to Marsh’s Pogo-esque, and at some level debilitating, conclusion that “we have met the enemy and he is us”.<sup>5</sup>

Like that offered by *Man and Nature*, the originality of the argument in *Silent Spring* has been exaggerated. Celebrated as the fountainhead of the new environmental movement, Carson has been described by former vice president of the United States, Al Gore as planting “the seeds of a new activism that has grown into one of the great popular forces of all time” and providing “a shaft of light that for the first time illuminated what is arguably the most important issue of our era” (Gore, n.d.). But Carson drew insight and evidence, as did Marsh, from the work of many other writers and scientists. Both books include lengthy bibliographies of works consulted. In the late 1940s, veterinarians had raised questions about the harmful effects of DDT on animals, and the Audubon Society did likewise with respect to birds several times during the 1950s (see also more generally Whorton, 1975). In 1957 residents of Long Island sued the USDA for their aerial spraying of several communities in an effort to eradicate gypsy moths, and 2 years later American Thanksgiving celebrations were thrown into turmoil by a report that cranberries had been contaminated by aminatraizole, a weed-killer known to cause cancer in rats.<sup>6</sup> Just as others had written of environmental decline in the eastern Mediterranean before 1864, so Carson’s powerful image of the Silent Spring was adumbrated in

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<sup>5</sup>The phrase “We Have Met The Enemy and He Is Us” was used by Walter Kelly creator of the Pogo comic strip on a poster for Earth Day in 1970. It then appeared as the title of a book: Kelly, W. (1972). *Pogo: We have met the enemy and he is us*. New York, NY: Simon and Schuster.

<sup>6</sup>Carson (1962, pp. 154–159) discusses the Long Island gypsy moth issue. The cranberry incident was well reported in Larry Gosnell’s National Film Board of Canada documentary *Poisons, Pests and People* produced and aired on the Canadian Broadcasting Corporation (CBC) in Bairstow and Gosnell (1960), and available at: [http://beta.nfb.ca/film/Poisons\\_Pests\\_People](http://beta.nfb.ca/film/Poisons_Pests_People)

earlier writing. In July 1946, for example, John Terres wrote about the spraying of DDT on Moscow, Pennsylvania (Terres, 1946). He told the story of a bright May morning, when birdsong ran through the oak woodlands, but the trees were losing their leaves to the voracious gypsy moth. An airplane droned overhead and released a fine mist. “The effect was instantaneous. The destructive caterpillars caught in the deadly rain, died by the thousands”. But the next morning “the sun rose on a forest of great silence—the silence of total death. Not a bird call broke the ominous quiet.” (see also Davis, 1971; Lear, 1992).

Just as *Man and Nature* found a broadly receptive audience in the decade or two after its first publication, so did *Silent Spring*. If anything, the latter book appeared at a more propitious moment than did its predecessor. Post-World War II economic prosperity had begun to reconnect Americans with nature. Automobiles facilitated visits to national parks, forests, and other places of natural beauty; suburban homes had lawns and gardens to tend and beautify; garden clubs grew; and the numbers of those hunting and fishing rose moderately (Charbonneau & Lyons, 1980, pp. 121–126; Rome, 2001; Sutter, 2002). The plight of some 10,000 children worldwide, born between 1957 and 1962 with physical deformities attributable to the prescription of thalidomide to their mothers as an inhibitor of morning sickness, was widely publicized and raised awareness of what chemicals could do to human bodies (Campaign Against Fraudulent Medical Research, 1996). The newly-elected Kennedy administration was more open (than many administrations before and since might have been) to such arguments as Carson presented. Not least, moreover, new media—including magazines—such as the *New Yorker*, which ran an abbreviated version of Carson’s account in three parts before publication of the book—television and radio massively increased the reach of Carson’s words. They were also important vehicles for dissemination of the vigorous and vicious critique of Carson and her book mounted by the very chemical companies she criticized. Debate was quickly polarized, but the specialist and financial resources of corporate America were unable to quell the groundswell of interest in and support for Carson’s arguments. In challenging large chemical pesticide producers, she was perhaps tapping into the growing unease with corporate and bureaucratic America given early expression in the works of sociologists David Riesman, C. Wright Mills, and Vance Packard, and soon to flourish into the counter-culture movements of the 1960s (Mills, 1951; Packard, 1959; Riesman, 1950; Roszak, 1969).

Some have found in *Silent Spring* an argument for the balance of nature, but in my reading Carson’s case rests on an acknowledgment of the interrelatedness of nature’s parts rather than upon a belief (qua Marsh) in nature’s somewhat mystical harmony. This is an important distinction. Carson understood nature as an intra-dependent system and she was concerned about the ways in which human actions affected the world around us and then stood to redound upon humans themselves. Carson was a scientist, a trained zoologist with a Master’s degree and a long career in the U.S. Fish and Wildlife Service, much of it as editor in chief of its



publications division.<sup>7</sup> In her prodigious research she combined the approaches of the professional scholar and the investigative journalist; “checking and digging and research” she wrote her agent, “are matters I would never turn over to another person” (Murphy, 2005, p. 26). Her dedication to inquiry and her quest for deeper understanding led her to a grave concern, echoed in the dedication of *Silent Spring*: “To Albert Schweitzer who said ‘Man has lost the capacity to foresee and to forestall. He will end by destroying the Earth.’” Until her publisher suggested the John Keats-inspired title of her last book she planned to call it *Man Against Nature* (Murphy, p. 31).

There are echoes in this, and tangled ironies too. Recognizing their respective views of humankind’s place in nature—as independent and above, and as intradependent and within—it is hardly a stretch to suggest that Marsh might more accurately have conveyed the message of his book by calling it *Man Against Nature* and that Carson might happily have used *Man and Nature* to describe her work, had that title not been in circulation already. In the end however, both Marsh and Carson were anxious about humankind’s failure to exercise due stewardship of the earth, and their books were intended to change this. Clearly—no surprise here—they wrote in very different ways, and their works, published a century apart, engaged radically different contexts. As these pages have demonstrated, both *Man and Nature* and *Silent Spring* have been widely recognized as landmark contributions to ongoing debates about human environment relations, and each volume has been said by enthusiastic supporters to have changed the ways in which people thought, and continue to think, about the world.

But there are reasons to doubt such claims. So in conclusion I turn to consider two things: first, whether these books and their authors stand as bolts of pure genius that metamorphosed understanding and transformed the landscape or whether they are better seen as ripples reverberating across the tides of time, the marks of people and productions whose impact left surficial traces on the deeper ocean of discourse; and second, whether these radically different books offer any insights that may assist in dealing with the looming environmental challenges precipitated by what historian John McNeill has called twentieth-century humankind’s propensity “to play dice with the planet, without knowing all the rules of the game” (McNeill, 2000, p. 4).

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## Words at Work

In *The Forbidden Best-sellers of Revolutionary France*, Robert Darnton (1995) wonders whether books cause revolutions. Although some might insist otherwise, these days the guarded, historian’s, answer has to be *no*. By the lights of our time, events are seen as complex, contingent, and interdependent—and contrary to the

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<sup>7</sup>The fullest account of Carson’s life is Lear (1997), but see also Souder (2012). The following are also valuable in the larger context of this discussion: (Lytle, 2007; Waddell, 2000 and Dunlap, 1974; Dunlap, 2008).

lessons of many high school text books—most historical moments are not thought to be properly explained by a ranked list of *reasons why*. Nor are ideas unitary. They find expression in many forms, some of which reverberate more strongly in some circles than in others. Indeed, and because of this, it is extremely hard to trace the diffusion of ideas. It is even more difficult to ascertain the effects or results of reading any particular text. Reader response theory has emphasized that reading is not a passive act and insisted that the meaning any and every reader takes from a text is influenced by her personal circumstances and cultural setting. Thus, in some sense, much of the debate reviewed above about the primacy or otherwise of the ideas found in *Man and Nature* and *Silent Spring* is unfounded or irrelevant. Yet none of this negates Henry Giles sense that books might “set in action countless multitudes” and change the course of events. It is necessary to evaluate the effects and influence of these two books, and to ponder their method of working, if their importance to both past and present is to be understood, and their lessons turned into action.

Both *Man and Nature* and *Silent Spring* might be described—in a phrase more common in our day than in theirs—as works of nonfiction designed to raise public consciousness. Historians of the book have spent a good deal of effort charting the processes by which books are produced and their messages disseminated and received, and even the most cursory acquaintance with this work suggests that *Silent Spring* had a much greater chance of raising public consciousness than did *Man and Nature*. It was launched into a mass society. Broadcast media; publicity departments; book clubs—all helped to create a buzz around the book and to draw attention to its message. So too did Carson’s powerful indictment of the academic scientists, the government agencies, and the chemical industry whom she held responsible for the hazardous use of pesticides. The industry, in particular, responded vigorously to rebut Carson’s claims. Her science was challenged, and her credibility impugned, often with pointed comments about her gender (why, asked a former Secretary of Agriculture, would a “spinster with no children . . . [be] worried about genetics”? (Ezra Taft Benson, as quoted in Murphy, 2005, p. 106). The Monsanto corporation even responded with a parody of Carson’s *Fable for Tomorrow*, called “The Desolate Year,” which described in lurid prose the terrible effects that the tightening “garrotte of Nature rampant” (The *Desolate Year*, pp. 4–9 as quoted in Murphy, p. 100) would have in a world without pesticides. The particular conjuncture presented by the early 1960s, with its concerns about the appearance of Strontium in breast milk, nuclear build up (Jarvis, Brown, & Tiefenbach, 1963),<sup>8</sup> and so on was also highly conducive to creating a receptive audience for Carson’s work. *Silent Spring* was a Book of the Month Club selection, a special edition was produced for distribution to members of the Consumers Union, and it was much

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<sup>8</sup>This appeared a few months after the publication of *Silent Spring*, but its notes reference earlier work on the topic. For the nuclear build-up, see various items available in CBC archives under the heading “Cold War Culture: The Nuclear Fear of the 1950s and 1960s,” available at: [http://archives.cbc.ca/war\\_conflict/cold\\_war/topics/274/](http://archives.cbc.ca/war_conflict/cold_war/topics/274/) and the important article by (Lutts, 1985).

serialized in periodicals; it was on best-seller list for weeks, and within 3 months of the book's publication half a million copies were in print.

All of this is in stark contrast with the reception of *Man and Nature*. It sold well in its day, to be sure. But 1,000 copies against half a million. This reveals a good deal about the reach of Marsh's book. Written for "intelligent observing, and thinking men," its audience was, it would seem, largely limited to a few of them. It spoke, as almost all sizeable and serious books must have done in the mid-nineteenth century, to an elite male readership. Identifying no villains—and avoiding the challenge to religious orthodoxy that led powerful persons to rise up against (and draw notice to) Darwin's ideas—*Man and Nature* provoked no heated opposition. Its influence—on a few—was profound, and that chain of effect ran, not inconsequentially, from Franklin Hough through the Imperial Forest Department in India to New Zealand parliamentarians W. T. L. Travers and Thomas Potts, and on to Carl O. Sauer and beyond, eventually providing a stimulus for my own work. But *Man and Nature* a bolt of pure genius, the touchpaper of an environmental revolution? I think not.

In the final analysis this is probably too much to claim even for Rachel Carson, though *Silent Spring* might be described more legitimately than *Man and Nature* as a book that changed the world. Yet neither of these books transformed the landscape of understanding, or caused a revolution *on its own*. Both contributed, unevenly, to developing forces of concern and conviction of which they were both reflections and parts. Still, the differences in their public impact and the sweep of their influence are worth contemplation by those who wish to intervene in current debates about the future of the earth, or more generally, to speak truth to power.

Ultimately, it seems to me that—context and all that that implies for the possibilities of dissemination aside—*Silent Spring* was a more powerful instrument of change than *Man and Nature* because of the nature of its story and the way it was told. Both Marsh and Carson were concerned about the ways in which the actions of members of their generation were despoiling the earth, but Carson seared her concern over the bioaccumulation of toxic chemicals into the public consciousness by lodging it in the very tissue of every human body, whereas Marsh emphasized the role of long-term physical processes reducing the fertility and utility of particular parts of the planet. Put simply, widespread threats to one's person (and one's children's persons) would seem more likely to move people to action than fears for the future of distant spaces or nearby places. Both *Man and Nature* and *Silent Spring* identified those responsible for the environmental challenges against which they railed, but they presented radically different possibilities for action against the ills they confronted because—in the broadest of terms—the villains revealed to readers of the former appeared as *us* and of the latter as *them*. Resolved to its essence, this contrast left *Man and Nature* hostage to what Garrett Hardin (1968) characterized as *The tragedy of the commons*—providing little incentive to individual action so long as there was no assurance that all others would act in accord—whereas *Silent Spring* offered up a clearly-identified and relatively small set of villains whose humankind-threatening deeds might be challenged and stopped. These are contrasts worth remembering in the twenty-first century as humankind struggles collectively,

and in spite of an enormous accumulation of scientific knowledge, to address the “seething pottage” of climate change, even while noting the success of campaigns against the contamination of secondhand smoke or the use of plastic water bottles shown to contain endocrine disruptors.

All of this said, I have no doubt that both Marsh and Carson were great people—though I rest this judgment on their full lives led rather than their landmark books, and I cannot make of either of them Carlyle-style heroes or indispensable saviors of their epochs. Their lives were but pebbles in the sea of history—pebbles that fell with force and whose ripples fanned by acolyte winds continue to scud across the pond, but pebbles nonetheless. They made a difference, but within limits. And as for these writers of books preaching “to all men in all times and places,” I confess to doubts on this score too. *Man and Nature* and *Silent Spring* have found readers around the globe and are indubitably mobile, but—like these and all other words—they have been and will be received and understood differently in the variety of contexts into which they are inserted. Nothing is immutable, not even the pedestals upon which preachers are elevated for reasons that often have as much to do with their acolytes as themselves.

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