

Rachel Carson and the Perils of Simplicity: Reading *Silent Spring* from the Global South¹

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Abstract: Carson’s work is often praised (and sometimes condemned) for its simplicity and lyricism, its “sensitive literary style.” My engagement with *Silent Spring* explores this idea of literariness, tracing the formal qualities and rhetorical strategies of her oeuvre: the ecology of allusion and quotation that it generates, the metaphors and genres that it draws on. In doing so, it argues that the celebrated accessibility of her writing is in fact a carefully worked-for effect. The simplicity of *Silent Spring*, in other words, is more complex than it first appears: a quality that lent the book much of its power yet also rendered it vulnerable in other ways. At the same time, I hope to read Carson’s public science writing alongside the anti-globalisation protest of Arundhati Roy, probing the relation between the simple and the complex in contemporary environmentalism. Both turned their attention to explicitly instrumental writing after winning fame for more “literary” texts, both questioned the credibility of the male expert, and both deployed the intimate address of the essay form for polemical effect. Roy’s work also allows us to see how Carson’s version of environmentalism looks from the developing world: how the ideas of ecology, toxicity, and “slow violence” that *Silent Spring* did much to introduce into public culture might play out in a postcolony like South Africa.

Keywords: Rachel Carson, Arundhati Roy, literary non-fiction, literary ecology, postcolonial ecocriticism

To never simplify what is complicated or complicate what is simple.

Arundhati Roy, “The End of Imagination” (1998)

While rereading Rachel Carson on the fiftieth anniversary of *Silent Spring*, first published in 1962, I found myself in the University of Cape Town’s library basement to track down a first edition of *The Sea Around Us* (1951). This was her breakthrough work, the second book of the great ocean trilogy that preceded her campaign against DDT and other pesticides. Tucked into it was a clipped-out review with the price of the book given as 12s 6d, but no date or publication details:

Miss Rachel Carson, supported by consultation with leading oceanographers, and having herself taken part in a marine expedition, presents a vivid account of the sea which will not only illuminate for the general reader the fundamental biological importance of its problems, but which derives a special character from her use of a sensitive literary style to give expression to the intrinsic beauty of natural phenomena.

The short notice is largely positive but remarks that the book “is not free of the oversimplification which is so difficult to avoid in covering such a vast field in a limited space.”

One finds in this notice many standard responses to her work as well as some more buried clues relating to its context and reception. “Miss Carson” (implying her unmarried status) is congratulated for her “sensitive literary style,” but this is a double-edged quality. Her book is praised for mediating between scientific experts and “the general reader”: the result is vividness and aesthetic pleasure but also the danger of oversimplification. “Miss Carson” has no PhD and no academic affiliation, but the text is nonetheless underwritten by the work of leading experts.

The Sea Around Us was in fact the work of a maverick synthesiser, a digest of ten years of oceanographic research. This began with her first work, *Under the Sea-Wind* (1941), which appeared just before Pearl Harbour and so made little impact on a public that was soon consumed with the American war effort. By contrast, her 1951 bestseller benefited

directly from naval technologies developed during World War II, especially the mapping of the ocean bed via sonar. (Leftover warplanes, on the other hand, would be used in the 1950s for the indiscriminate spraying of pesticides that Carson opposed.) *The Sea Around Us* quotes Shelley and Swinburne, accessing the literary Romanticism that Carson had immersed herself in while at college and which would also provide, via John Keats, the title of *Silent Spring*. Yet it was also undeniably a product of (and perhaps simultaneously, an antidote to) the United States' unprecedented economic and technological dominance in the mid-twentieth century. The result is an oeuvre in which the relations between those terms that reconstitute themselves endlessly as the dichotomies of popular environmentalism—nature and culture; science and sentiment; technological “progress” versus ecological “balance”—are complex, ambivalent, and intriguing. So what kinds of texts are these? What idea of “science” do they embody? And what are words like “sensitive” and “literary” doing in this context?

With these as points of departure, my engagement with *Silent Spring* argues for Carson's continued importance in ways that turn on the question of *style*. Firstly, I probe the idea of “literariness” within her work—tracing the texts' formal qualities and rhetorical strategies, their metaphors and the genres they draw on—and so suggest that the celebrated accessibility and even naïveté of her writing is in fact a carefully worked-for effect. The “simplicity” of *Silent Spring*, in other words, is more complex than it appears: a quality that lent the book much of its power (and audience) yet also rendered it vulnerable in other ways. This leads to a broader enquiry into the relation between the simple and the complex in contemporary environmentalism as concepts and tropes, but also as styles, techniques, and modes of address.

At the same time, I hope to read Carson's public science writing alongside the activism of Arundhati Roy. Despite many differences, there are points of contact between the work of these two courageous writers: both turned their attention to explicitly instrumental writing after winning fame for more “literary” texts; both questioned the credibility of the male “expert” and were subject to a fierce backlash as a result.² It is revealing also to consider Carson and Roy as writers at very

different points on the trajectory of twentieth-century environmental activism. For Carson in 1962, the challenge is rhetorical newness; for Roy, writing at the turn of the third millennium, it is rhetorical exhaustion. At the beginning of her anti-nuclear essay, “The End of Imagination” (1998), the latter writes memorably that even if there is nothing new or original left to be said about nuclear weapons (or, one might add, deforestation, species loss, climate change), “let’s pick our parts, put on these discarded costumes and speak our second-hand lines in this sad second-hand play. But let’s not forget that the stakes we’re playing for are huge. Our fatigue and our shame could mean the end of us” (122). It is intriguing to read this alongside *Time* magazine’s 1962 review of *Silent Spring*, which described Carson’s case as “unfair, one-sided and hysterically over-emphatic” and went on: “Many of the scary generalizations . . . are patently unsound. ‘It is not possible’, says Miss Carson, ‘to add pesticides to water anywhere without threatening the purity of water everywhere.’ It takes only a moment of reflection to show that this is nonsense” (Burnside and Riordan 19). Such a claim, though, is now taken as read: it has axiomatic status in modern environmentalism. To read such an accusation today is to realize how Carson was struggling to bring into focus concepts of ecological complexity and global pollution that are now held as self-evident, as “natural.”

Yet equally, the comparison with Roy also allows one to consider what such naturalisation entails and how a key text of North American environmentalism reads from the global South. Which of Carson’s ideas travel well, and which come to seem limited in a postcolonial context—one where practices of nature conservation have so often been linked to political conservatism? *Silent Spring* has attracted considerable critical attention as a foundational text in American ecocriticism,³ but how do the concepts of ecology, toxicity, and “slow violence” that her writing did much to introduce into public discourse play out in a space like South Africa?

As such, this piece also represents a series of responses to Rob Nixon’s *Slow Violence and the Environmentalism of the Poor* (2011), surely a major document in thinking through the often uneasy relation between

Anglo-American environmentalism and those methods of critical enquiry indebted to cultural materialism, literary theory, and postcolonial thought. Beyond the obvious relevance of Nixon's book to Carson as it considers forms of violence which are invisible and attritional—the “long dyings” and “disasters that are anonymous and star nobody” (3), the “calamities that patiently dispense their devastation while remaining outside our flickering attention spans” (6)—I hope to take up its enquiry into genre.

Concerned throughout with the matter of both political and aesthetic representation, Nixon explores how public intellectuals and writer-activists from the developing world seek to give narrative, figurative, and affective shape to those “formless threats whose fatal repercussions are dispersed across space and time” (3). In each chapter, a crisis is paired with a different literary mode: Bhopal and its aftermath are explored through the “environmental picaresque” of Indra Sinha's *Animal's People* (2007); US petro-imperialism in the Gulf is seen through the lens of Abdelrahman Munif's novel cycle, *Cities of Salt* (1984); Ken Saro-Wiwa's and Wangari Maathai's protests against oil drilling and deforestation respectively are considered in terms of the “movement memoir” and its difficulties—how an autobiographical text is also required to function as the “biography” of a social collective. In India, writing against the hyper-nationalist discourse of megadam builders and the strategic impersonality of the World Bank report, Roy deploys the intimate address of the essay for polemical effect. As a “small, nimble form,” it (Nixon suggests) “allowed her to take on the weighty, leaden genres that gave ballast to the . . . culture of developmental gigantism” (168)—a shape-shifting writerly strategy which, I will argue, has intriguing parallels with Carson's approach.

As the second half of Nixon's title implies, such examples are intended to dismantle the much-recycled accusation that environmentalism is the preserve of rich Westerners—an accusation in which the difference between reactionary and progressive critique can be difficult to discern. Yet at the same time, the book is alert throughout to the uneasy relationship between environmentalist and postcolonial methodologies, particularly as they have evolved in the Anglo-American academy. If postco-

lonial theory has concerned itself with ideas of hybridity, cross-cultural mixing, displacement, migrancy, and the recovery of silenced histories, then ecocriticism has often been concerned with their opposites: discourses of purity, conservation, regionalism, and solitude—moments of timeless communion with nature.⁴

One of the main charges Nixon levels against (North) American environmentalism is that it has remained scandalously parochial. That is to say, it is content with discussing and deconstructing images of the wild (or not-so-wild) West while remaining almost entirely un-engaged with the long-term consequences of American foreign policy: the “offshore histories” of nuclear testing in the Pacific and depleted uranium in Iraq. In the year that *Silent Spring* was published, it is worth remembering, Operation Ranch Hand commenced the spraying of herbicides and defoliants like Agent Orange in Vietnam.⁵ And if Carson is one of the guiding inspirations mentioned in the Preface to *Slow Violence*, then another is the great scholar of culture and imperialism Edward Said, who (Nixon recalls) was largely dismissive of environmentalism but offered guidance in other ways:

He thrived on intellectual complexity while aspiring to clarity; he taught and wrote as if—and I know this should sound unremarkable for a literature professor—he yearned to be widely understood. His approach felt fervent, luminous when measured against the alternatives: close readings sealed against the world or deconstructionist seminars in which the stakes were as obscure as the language. . . . His devotion to style became integral to his political idealism and inseparable from his belief in insurrectionary outwardness. (x)

When contemporary reviewers lauded Carson’s “sensitive,” “literary,” or “lyrical” prose, they were no doubt using the common idea of style as something extrinsic to discourse—a kind of attractive coating or decorative flourish. (Indeed, one cannot help feeling that these adjectives in the hands of some reviewers work to dismiss or at least disarm certain aspects of Carson’s writing, damning it with faint praise.) In the wake of twentieth-century linguistic and literary theory, however, the notion

of style as something external to content is untenable. Nixon's tribute to Said broaches the idea that it is something altogether more fundamental (and fundamentally political) to a writer's approach. Carson's carefully worked-for simplicity is approached here as intrinsic to and constitutive of her entire ethic: as a tactic, as a method, and as a way of calibrating the relation between a dense informational load and the demands of a wider social body.

While her prose is unaffected by complexity at the level of the sentence, her texts generate an intricate "literary ecology" of quotation and allusion—yet one which is painstakingly underwritten by her training in public science writing. And so the vision of ecology that her writing discloses is more robust than the sometimes uncritical and sentimental use of that term by green-minded literary critics (or literary-minded environmentalists). *Silent Spring*, in other words, is a text suffused with both Literature and "the literature"—it partakes of both the English Romantic canon and the cusp of scientific research. Revisiting it in our time and place might allow us to think more cogently and fluidly about how social and natural worlds are figured in contemporary environmentalism. For this is a domain in which there are, after all, powerful interests intent on simplifying the complicated and complicating the simple.

I

. . . by rock and heath and pine . . .

Rudyard Kipling, "Song of the Cities" (1893)

In exploring the contemporary resonances of Carson's text from the global South and in thinking about how its ideas of the environment have travelled, it seems appropriate to consider my immediate surroundings at the University of Cape Town: how the physical (and even geological) context here might shape our conditions of intellectual enquiry.

Silent Spring takes its title from John Keats' "La Belle Dame Sans Merci," with a line from the poem serving as an epigraph:

The sedge is wither'd from the lake
And no birds sing.

Yet birdsong, or its absence, takes on a rather unexpected association in our local habitat. A little further up the slopes of this campus, one finds a statue of the nineteenth-century mining magnate and empire builder Cecil Rhodes, gazing toward the African hinterland. At one point in his short but energetic life, Rhodes attempted to introduce a variety of songbirds to the slopes of Table Mountain, apparently from a desire to hear the sound of English woodland again before his death.⁶ The scheme was unsuccessful—only the chaffinch proved able to “naturalise” itself—but this was only one element of a much broader programme of green imperialism that makes the Rhodes Estate around us a complex and carefully manufactured cultural landscape.⁷

In an odd turn of colonial history, the Keatsian nightingale, “pouring forth thy soul abroad” (845), arrives here as a by-product of industrial modernity: the large-scale mine workings at Kimberley and the Witwatersrand where Rhodes made his fortune. If for Carson birdsong came to symbolise an environment under threat from man’s chemical ingenuity and meddling in complex natural systems, then on these slopes it was inflected with the grand designs of settler-colonialism—an index of precisely such an impulse to remake the environment in the image of one’s own native land. The arch-imperialist was also an early conservationist, using his enormous wealth to buy up the mountain flanks, demolishing unsightly water reservoirs and creating a protected parkland that still stretches south from the shoulder of Table Mountain through the botanical gardens at Kirstenbosch to Cecilia Forest, named (like Rhodesia) after its patron.

Along with the nightingales and chaffinches, Rhodes installed Roman lion cages, Mediterranean stone pines, oak avenues, deer parks, llama paddocks, summer houses, and hydrangea beds. He also built a “cottage in the woods for poets and artists” where they could draw inspiration from the mountain (Baker 44)—“[t]hrough a tap, as it were,” wrote William Plomer in his satirical 1933 biography of Rhodes. “Unfortunately, when turned on, the tap seems to have produced little but mountain mist and a few hiccups of patriotic fervour,” he added (140). The barbed lines no doubt refer in part to the South African output of Rudyard Kipling, who stayed at the Woolsack cottage almost

every year between 1900 and 1907 yet never produced the masterpiece of British South Africa that his patron was expecting. Lines from Kipling's tub-thumping "Song of the Cities" (1893) are duly engraved below the Rhodes statue on campus:

I dream my dream by rock and heath and pine
Of Empire to the northward. Ay, one land
From Lion's Head to Line! (177)

Positioned on a grand architectural axis, aligned with the vast rock walls of Devil's Peak above, there could hardly be a more glaring collusion of natural and imperial grandeur. It is worth noting, too, that there is a line missing from the monument. The first part of the stanza—about the colonial beachhead of "Capetown" being "[s]natched and bartered oft from hand to hand" (177)—is omitted, throwing out the rhyme. No doubt this allusion to warring Dutch, British, and French interests would have troubled the notion of a tranquil, pastoral "Cape Dutch" past, following which the nineteenth-century British imperial presence could be seen as the "natural" continuation of an earlier colonial stewardship. Encoded in the idyll of elegant gabled buildings and picturesque wine farms, it is an invented tradition that has worked for generations to efface the history of Cape slavery and is still very much part of the Western Cape's cultural identity—and certainly its tourist industry.

I make this historical detour so as to return to the matter of Carson's "simplicity" not before but *after* a consideration of the complexity that is entailed in thinking through the various cultures of nature in a place like South Africa. The memorials to Rhodes dotted around the city so obviously reveal a nature that does the work of culture: the suppressed line quite literally entails an effacement of the historical via the geographical; the rhetoric of settler-imperialism finds direct uses for the Romantic sublime. And if Kipling was one Nobel laureate who wrote on these slopes, another was J. M. Coetzee, whose early work is in many ways a fraught interrogation of all the violence and inequity that lies beneath versions of the colonial pastoral or the "story of an African farm"—to adapt the title of Olive Schreiner's remarkable 1883 novel set in the semi-arid Karoo. Read via Coetzee's unsentimental critique of land and

language in South African letters, Kipling's Rhodesian lines about "[t]he granite of the ancient north" and "[g]reat spaces washed with sun" (209) partake of a recurring *topos* in the (white) South African literary imagination.⁸ This is what Coetzee calls the "dream topography" of a silent, ancient Africa measured in geological aeons: a prehistoric landmass absent of any indigenous human presence that might contradict the claims of European settlement (*White Writing* 6–7). In a less guarded moment, he speaks in 1988 of South Africa's "hereditary masters" as follows:

To be blunt: their love is not enough today and has not been enough since they arrived on the continent; furthermore, their talk, their excessive talk about how they love South Africa has consistently been directed towards *the land*, that is, towards what is least likely to respond to love: mountains and deserts, birds and animals and flowers. ("Jerusalem Prize" 97; emphasis in original)

The sylvan scenes around us, then, are hardly innocent. Birdsong, as the signifier of a quintessential Englishness and Romanticism, joins a range of other culturally loaded practices with regard to the natural world, generating a complex topography in which matters of (trans)plantation, mimicry, and hybridity (botanical, zoological, cultural) become ineluctably entangled. So how are we to take the apparent simplicity and even naïveté of Carson's style in a place where natural history has so often involved a silencing of social history, where (as Nixon writes) "nature reserves" and "native reserves" have shadowed each other uncomfortably in successive political administrations (176)?

Such questions underscore how the environmental humanities occupy a distinct and difficult niche in the academy, making them an uneasy partner to methods of critical enquiry indebted to cultural materialism, Marxian thought, or postcolonial theory—all those modes of brushing cultural texts against the grain that have dominated literary departments since the 1970s. And certainly, one can see the importance of the latter when tracing how culturally loaded versions of the environment continue to play out in the twenty-first-century postcolony.

Again, we can turn to the very local matter of the long-standing debates about “indigenous” versus “alien” flora and fauna on Table Mountain. For many years, this remained a largely suburban and faintly comic spat between (as one cartoonist had it) “pro-pine neo-nazis” and “anti-pine eco-fascists”: supporters of “foreign” pine trees versus “native” *fynbos* (the fine-leaved botanical kingdom of the Cape that Kipling’s poem Anglicizes as “heath”). Yet at turn of the millennium, the discourse around botanical invaders took on a more ominous tone, moving beyond the rich suburbs set against the mountain to comprehend the changing social landscape of the Cape Flats. In a long and carefully argued account of Cape Town’s devastating wildfires of 2000, John and Jean Comaroff suggest that the vitriol directed toward the exotic plant species in the popular media—those “invaders” blamed for the ferocity of the blaze, with an attendant rhetoric of indigeneity versus unbelonging—masked a desire to speak about *human* aliens from the rest of Africa: immigrants from Zimbabwe, Somalia, and the DRC who had arrived in the greater Cape Town area since 1994. Sentiments unable to be voiced explicitly in a climate officially opposed to all forms of discrimination, they suggest, were displaced onto the natural world. And not only here: alien plants “have become the stuff of melodrama and resonant allegory on a worldwide scale. This, we shall argue, is because they transform and represent diffuse political terrors as natural facts” (639).⁹

So far, one might say, so familiar. The work of cultural critique in the humanities is primed to show how such environmental discourses (like any others) are always interested, always (to borrow from Freud in addressing the peculiarly literal “dream topography” around us) overdetermined: they exceed the terms in which they are ostensibly framed and become coded ways of talking about something else.

The environmental humanities, however, cannot stay solely within such models. Such deconstructive “moves”—by now rather familiar, even predictable—are necessary *but not adequate*, at least if one wants to (like Carson) intervene in public debates and government policy. As such, I would add another point of friction between ecocritical and postcolonial methodologies to those that Nixon identifies. Among other

approaches in, say, a literary department, the environmental humanities are distinct in their close relation with the natural sciences, and in particular with the science of ecology. As such, they cannot rest in the default scepticism often adopted toward “scientific rationalism” by post-colonial methodologies.

In her rich and influential work, *Imperial Eyes* (1992), for example, Mary Louise Pratt tracks the discursive shifts in travel writing produced by visitors to the Cape of Good Hope in the eighteenth and nineteenth centuries, among them Kolb (1719), Le Vaillant (1790), Barrow (1801), and Burchell (1824). “Natural history” following Linnaeus, she suggests, can be seen as an “urban, lettered, male authority” that “extracted specimens not only from their organic or ecological relations with each other, but also from their place in other people’s economies, histories, social and symbolic systems” (31).¹⁰ This masculine, mechanistic, and extractive attitude to the natural world, then, is seen as the inception of, and continuous with, the environmental crises and postcolonial disparities of the twenty-first century.¹¹

Such critiques remain important and are in many ways unanswerable—but again, they are not sufficient. Departing from them, “ecocriticism” must in the first instance accept scientific findings and scientific language; it must appeal to the claims of, say, oceanography or forestry, climate change or evolutionary biology, before it can contest, question, and extend them. It must, as Greg Garrard writes, distinguish between “problems in ecology” (properly scientific issues to be resolved by the formulation and testing of hypotheses) and “ecological problems” (features of society arising out of our dealings with nature, from which we should like to free ourselves) (5–6).¹²

In the hyper-linked and market-driven world of the twenty-first century, there is a further reason for unease with critical methodologies that adopt knee-jerk reactions against “science” or “Enlightenment rationality.” There is surely a danger in remaining within a broad (left-wing) critique of scientific method when it has been attacked so constantly in recent decades from the right. When a Bush-era report suggests that anthropogenic climate change is only one “narrative” among others, when Big Oil begins deploying the phrase *historical carbon emissions* and pro-

nouncing that *developing nations must be allowed to industrialise*, there is the sense that progressive lines of argument have been hijacked by reactionary, market-driven forces committed to the status quo.¹³ One is presented with the uncomfortable spectacle of the lexicon of social justice (and even critical theory) being co-opted by right-wing lobbies and free-market think tanks. These are, after all, interests that have much to gain by making the same accusation traditionally made by left-wing critique: that a concern for the natural inevitably occurs at the expense of the social.

The workings of this political strategy are highly visible as soon as one types “Silent Spring” into Google. Websites proclaim that “Rachel Was Wrong,” sing the praises of DDT, accuse her of being responsible for the deaths of millions of Africans from malaria, and even compare her to Hitler and other mass-murderers of the twentieth century.¹⁴ As Naomi Oreskes and Erik Conway show in *Merchants of Doubt* (2010), not only are such accusations entirely false, they are disseminated by a network of interest groups that have been involved in the sowing of doubt about a range of scientific and public health issues throughout the twentieth century: the effects of tobacco smoke on the human body; the causes of acid rain; the effects of CFCs on the atmosphere; the science of climate change.¹⁵

“Doubt,” in the infamous phrase of one tobacco executive in 1969, “is our product” (qtd. in Oreskes and Conway 34). And given that it is *post hoc*, the revisionist attack on Carson throws the workings of this anti-government, anti-regulation doctrine—which the authors dub “the Tobacco Strategy”—into sharp relief. The matter of DDT and pesticide legislation in the US is by now an historical one, half a century old. Yet these corporate-funded campaigns exist not to overturn those specific policy decisions; rather, they work to discredit the very notion of scientific consensus: “[I]f you could convince people that science in general was unreliable, then you didn’t have to argue the merits of any particular case” (*Merchants of Doubt* 217); “you could use *normal* scientific uncertainty to undermine the status of actual scientific knowledge. As in jujitsu, you could use science against itself” (*Merchants of Doubt* 34; emphasis in original).

It is here that Carson's work and her vision of what science properly consists of might provide a way of thinking through this difficult discursive terrain of both deep, valid complexity as well as artificial, cynically manufactured obfuscation. Re-reading her oeuvre today, one is able to track the exemplary way in which her texts translate complex research into public forms. One is also able to explore the "nature" of the science that they broach: a rhetorical accomplishment which makes use of simplicity and well-known cultural archetypes yet which is at the same time capable of (to quote Keats again) "remaining content with half-knowledge" (942)—in this context, the requirement of scientific method to factor in and work with sites of unknowability.¹⁶ Indeed, as I hope to show, her work might allow us to think of a "literary ecology" that emerges not as a natural fact from which stable cultural values ("indigenous," "harmony," "balance") can be derived but rather as a process of constant flux and intellectual ramification: a thought experiment that presses against the limits of what can be imagined and what can be known.

II

The littoral zone—that mysterious border that shifts restlessly
between land and sea

Douglas Livingstone, *A Littoral Zone* (1991)

Carson's ocean trilogy—*Under the Sea-Wind* (1941), *The Sea Around Us* (1951) and *The Edge of the Sea* (1955)—established her as perhaps the best known "nature writer" in the US. That very phrase, though, is an awkward one: for some it might conjure an outdated anodyne, or impossibly innocent kind of writing—the domain, perhaps, of amateur naturalists and purple prose. And certainly, what is intriguing about Carson's trajectory as a writer is her move from self-contained and largely celebratory texts to the explicitly instrumental and elegiac register of *Silent Spring*. As Roy remarks of her own shift from "novelist" to "writer-activist" (an ungainly coinage which she compares to "sofa-bed"), it is a move that is regarded with some discomfort in the Anglo-American circuits of literary review and reward because it shuns those

qualities that are conventionally lauded in literary appraisal: "I'm all for discretion, prudence, tentativeness, subtlety, ambiguity, complexity. . . . Most of the time" (*Power Politics* 11–12).¹⁷

Yet in Carson there is less of a sharp break between the two modes, and her early works on the sea remain copious and often startling texts: writings that reveal the evolution of the distinctly literary ecology that accrues in *Silent Spring*. We have traced the "dream topographies" and depopulated landscapes of the colonial imaginary in South Africa, but it is worth stressing that Carson's is a poetics that emerges in a deep sense not from land but from "the sea around us": that planetary domain which was for millennia the conceptual horizon of human understandings of the world. Far removed from what Coetzee calls "the backward glance of the pastoral" or the lone poet in a stony landscape rhapsodising over contested ground (*White Writing* 6–7), her 1951 biography of the ocean announces itself from the first lines as a collective and contemporary enterprise: "To cope alone and unaided with a subject so vast, so complex, and so infinitely mysterious as the sea would be a task not only cheerless but impossible, and I have not attempted it" (*The Sea Around Us* n.p.).

Again, the apparent simplicity of these texts belies the immense complexity of marine systems that they navigate for the lay reader—the geological formation of the ocean basins, the "global thermostat" of ocean currents, the "seasons" of the underwater year—and reading them today, they seem by turns familiar and surprising. They are familiar because they use narrative techniques that are now standard in the kind of "nature documentaries" screened endlessly on the Discovery Channel. In *Under the Sea-Wind*, for example, different species are used to "focalise" the narrative as it follows the fortunes of a common sea bird like the sanderling in its yearly journey from Patagonia to the Arctic Circle. In *The Sea Around Us*, the many attempts to imagine the deep ocean realm surely prefigure the kind of breathless, David Attenborough-narrated footage that is now familiar from a BBC documentary like *Blue Planet* (2001), as the reinforced camera sinks to the ocean bed.

Attempting to "map" the seabed imaginatively in the wake of echograms, sonar, and the occasional deep-sea dive, many pages are devoted

to creating precisely such an effect via text, before it was possible on screen. The depiction of early underwater photography (with its tantalising hints of bioluminescent organisms at enormous depth) reveals a stance that is open to new technologies for perceiving:

There are technical difficulties, such as the problem of holding a camera still as it swings at the end of a long cable, twisting and turning, suspended from a ship which itself moves with the sea. Some of the pictures so taken look as though the photographer has pointed his camera at a starry sky and swung it in an arc as he exposed the film. (*The Sea Around Us* 43)

It is a striking conjunction of two different frontiers of scientific knowledge in the twentieth century—ocean trenches and distant galaxies. Yet by the same token, one reads with a sense of foreboding about the early “fathometers” used to locate herring in the North Sea, which then become post-war echograms locating great bodies of biomass at invisible depths: these prefigure in a more sinister way the “fish-finding” technologies now used by factory ships that trawl the open ocean.

If familiar in some ways, though, these sea-going texts are at the same time surprising in the way that they press against the unknown, and in their continual probing of the cultural sense that is made of the natural world. In an afterword to his 1991 collection of poems drawn from the experience of water sampling along South Africa’s KwaZulu-Natal coastline, the poet and marine biologist Douglas Livingstone remarked: “The littoral zone—that mysterious border that shifts restlessly between land and sea—has, to me, always reflected that blurred and uneasy divide between humanity’s physical and psychic elements” (62). A similar and sustained blurring occurs throughout Carson’s writing, as it oscillates constantly between mythic and empirical understandings of the ocean: from the Book of Job to bathyscapes; echograms to fishermen’s lore. The epigraphs to chapters range from Shakespeare’s *The Tempest* via Milton and Melville to Shelley and Swinburne: “The wind’s feet shine along the sea” (5).

As Linda Lear shows in her biography, Carson was at first an English literature major while at Pennsylvania College for Women and deeply

immersed in the texts and traditions of English Romanticism. This literary affinity was marked on the fortieth anniversary of *Silent Spring* by a poetry anthology “provoked” by her work. Titled *Wild Reckoning*, it is prefaced by Jonathan Bate, whose *Romantic Ecology* (1991) and *The Song of the Earth* (2000) are formative texts in contemporary British ecocriticism, and conduct a long argument with the accusation that literary Romanticism involved a turning away from the socio-historical.¹⁸ The epigraph for the anthology is taken from Carson’s *The Edge of the Sea*:

Contemplating the teeming life of the shore, we have an uneasy sense of the communication of some universal truth that lies just beyond our grasp. What is the message signalled by the hordes of diatoms, flashing their microscopic lights in the night sea? What truth is expressed by the legions of the barnacles, whitening the rocks with their habitations, each small creature within finding the necessities of its existence in the sweep of the surf? And what is the meaning of so tiny a being as the transparent wisp of protoplasm that is sea lace, existing for some reason inscrutable to us—a reason that demands its presence by the trillion amid the rocks and weeds of the shore? The meaning haunts and ever eludes us, and in its very pursuit we approach the ultimate mystery of Life itself. (249–50)

The writing is, perhaps, “lyrical,” but it is also angular and questioning. It does not (as is the case in the “nature writing” that gives the genre a bad name) rest or relax into the mere act of description and notation. Neither does it (to adapt Oscar Wilde’s famous put-down of Wordsworth) find in the shoreline the sermons that it had already hidden there.¹⁹ As in Livingstone’s more obviously modernist (and masculinist) poetics, the sense of some communication is “uneasy,” inscrutable, and bound up with the sensory experience of flux in the littoral zone itself. The verb forms toughen the writing: teeming, signalling, eluding. The sheer profusion of biomass “demands” a reason of us, even while suggesting a superabundant materiality that can mean nothing in human terms: we are given an intuition of what George Steiner calls the “irreducible

weight of otherness, of enclosedness, in the texture and phenomenality of the material world” (140). Again, naïveté and complexity are finely balanced: the phrase “ultimate mystery of Life” might seem at first like the ultimate tired cliché. But if one shifts the emphasis from “meaning” to “life” and expands this beyond its usual (existential, anthropocentric) semantic range to mean the totality of *biological* life—the emergence of living cells in the pre-Cambrian seas; the “endless forms” of evolution; the “total relations” of the organism to its given environment—then one is able to regain some of the question’s power and wonder.

The phrases above are from Charles Darwin and Ernst Haeckel: the former from the famous closing passages of *The Origin of Species* (1859), the latter from Haeckel’s definition of his 1866 coinage “oekologie”, in which he writes:

By ecology we mean the body of knowledge concerning the economy of nature—the investigation of the total relations of the animal both to its inorganic and to its organic environment; including above all, its friendly and inimical relations with those animals and plants with which it comes directly or indirectly into contact—in a word, ecology is the study of all those complex interrelations referred to by Darwin as the struggle for the conditions of existence.²⁰

Ecology, then, furnishes the trope of complexity *par excellence* within contemporary environmentalism and beyond: such complex conditions, interrelations and investigations underwrite the notions of speciation, habitat preservation, and biodiversity that are held as articles of faith by those who seek to protect the non-human world.

Yet as Stephen Jay Gould (another great public science writer) remarked as early as the 1970s, the very range and capaciousness of “ecology” in everyday usage risks a dilution of its force. For while most of Haeckel’s coinages died with him, this word is facing the opposite fate: “loss of meaning by extension and vastly inflated currency. Common usage now threatens to make ‘ecology’ a label for anything good that happens far from cities or anything that does not have synthetic chemicals in it” (*Ever Since Darwin* 119). Indeed, the concept

of ecological complexity seems so unarguable and “natural” that it can be hard to see the cultural work that it is made to do. But as we shall see, several critics have questioned its axiomatic status in “green” criticism, as well as the tendency of certain strains of ecocriticism to rely on seductive but rather glib analogies between biological systems and cultural texts.²¹

With such caveats in mind, two further moments from *The Sea Around Us* might allow us to see the inflection that Carson gives to Darwinian thought. The first is a striking passage that imagines “the long snowfall” of sediments to the ocean floor:

When I think of the floor of the deep sea, the single overwhelming fact that possesses my imagination is the accumulation of sediments. I see always the steady, unremitting, downward drift of materials from above, flake upon flake, layer upon layer—a drift that has continued for hundreds of millions of years, that will go on as long as there are seas and continents.
(74)

Eroded mountain ranges, river silt, volcanic dust, desert sand, gravel in melt ice, the discarded shells of lime or silica from diatoms and radiolaria—these sediments form “a sort of epic poem of the earth” (74), reaching a depth of 12,000 feet in the mid-Atlantic. “Mysterious and eerie are the immense areas, especially in the North Pacific, carpeted with soft, red sediment in which there are no organic remains except shark’s teeth and the ear bones of whales” (80). At the beginning of the chapter, she comments that the “book of the sediments has been opened only within the lifetime of the present generation of scientists,” since the advent of core drilling. At the end, she remarks (again rather ominously) that in our lifetimes “[t]he billions of Globigerina are drifting down, writing their unequivocal record that this, our present world, is on the whole a world of mild and temperate climate. Who will read their record, ten thousand years from now?” (81).

Taking the liberty of passing between different domains via metaphor, I would suggest that Carson’s is a fundamentally *sedimentary* poetics: one that proceeds by the slow, patient accumulation of detail.

This might be compared to those writers who tend more toward the *igneous* or *metamorphic*: those who trust to language that is compressed into the modernist “image,” or torqued into more experimental and cryptic forms. Seamus Heaney’s “bog poems” are surely sedimentary; Ted Hughes’ violent lyrics are igneous or metamorphic (so too the molten shapes of Sylvia Plath). A more local example might be found in an opposition between the poets Stephen Watson and Antjie Krog—though again, Carson disrupts the gendered assumptions that might begin to form around such a dichotomy. In fact, I would suggest that the writer whom Carson comes to resemble most at such moments is Darwin himself: a scientist writing at a time when developments at the cusp of the discipline could still be shared with an audience of non-specialists.

Read in writerly terms, *The Origin of Species* and *Silent Spring* are similar in their slow and methodical building of a case (a case that many did not want to hear). Both works present their argument through a sometimes relentless accumulation of evidence; both are reluctant to move from the particular to the general, from the contingent to the theoretical. “Only gradually and retrospectively does the force of the argument emerge from the profusion of example,” writes Gillian Beer in her study of the language and literary consequences of Darwin’s work: “Such profusion, indeed, *is* the argument” (42; emphasis in original). In this sense, the fact that Darwin spent so much of his life working on barnacles is testament to an empiricism that was reluctant to extrapolate grand claims or larger cultural truths from the natural sciences—what Gould calls “the usual high road of broad implication” (“Worm for a Century” 201)—but has nonetheless been taken up by others for all manner of social, political, and ideological ends.

The emphasis given by Haeckel to economy and struggle in nature allies him with that social Darwinism intent on deriving a single teleology for and moral from natural selection: a linear progression which (Beer writes) “reaches its point of satisfaction in the present” (17). Yet Gould (who always retained a left-leaning scepticism with regards to the politics of ecology) points out that Darwin’s initial term was not “evolution” but rather the less weighted “descent with modification”:

Ironically . . . the father of evolutionary theory stood almost alone in insisting that organic change led only to increasing adaptation between organisms and their environment and not to an abstract ideal of progress defined by structural complexity or increasing heterogeneity. (*Ever Since Darwin* 37)

In this radically materialist sense, the only “meaning” that can be derived from evolutionary theory is flux and the utter contingency of any value judgement: “fitness” signifies only the fit between a given organism and its immediate context. And although he could never rid himself of the residue of agency and intention that inheres in all language (the sense, that is, of natural selection being somehow purposive and directed), Darwin’s preferred metaphors were not ladders or linear trajectories but trees, “entangled banks,” and corals: a profuse, multi-dimensional and “meaningless” branching of life-forms in space and the unimaginable reaches of time unlocked by Charles Lyell’s new geology.

This, then, is what a literary reading might allow us to explore, in being attuned to the encounter between the “endless forms” of evolutionary theory and the ramifying, uncontrollable nature of language itself—its irresponsible rush to metaphor and wider signification. As Beer writes:

Darwin *could not* fully formulate all that his ideas might mean, or come to mean, though from edition to edition he sought to steady their implications. He continued to try to establish boundaries between the scientific meaning and the possible application of his work—but the language he had chosen and the story he had unfurled did not allow such rigid delimitation. The whole movement of *The Origin* is towards expansion, not stabilisation. (100; emphasis in original)

As a result, passages once taken as arguments for competition now read more as conservationist parables, testament to the wide and often conflicting range of meanings that can be derived from evolutionary theory. Contemporary environmentalism then inherits a riven, contradictory language that is amenable politically to both the left and right (and

indeed, to the apolitical): a metaphoric that varies according to what is taken as the prime unit of meaning (the gene, the individual, species, bioregion, planet?), and a vision of the social in which the “struggle for existence” could be glossed as a struggle for survival as much as conquest. Beer continues:

Darwin can be seen either as providing a grounding vocabulary for colonialism, or . . . equally as resisting “intrusion” and idealising the closed environment of island spaces because they give opportunities for the most “natural” form of natural selection in which the indigenous inhabitants uncover among themselves more and more ecological niches through the act of variation. (xxi)

In this sense it is intriguing that the remote oceanic island, so important a space in the genealogy of evolutionary thought, also forms a kind of centrepiece in *The Sea Around Us* (and the serialisation of this middle chapter in *The Yale Review* of September 1950 did much to ignite public interest in the work). The subject also leads to perhaps the strongest condemnation of human action in the book and the passage that most foreshadows *Silent Spring*:

The tragedy of the oceanic islands lies in their uniqueness, the irreplaceability of the species they have developed, by the slow process of the ages. In a reasonable world men would have treated these islands as precious possessions, as natural museums filled with beautiful and curious works of creation, valuable beyond price because nowhere else in the world are they duplicated. W. H. Hudson’s lament for the birds of the Argentine pampas might even more truly have been spoken of the islands: “The beautiful has vanished and returns not.” (96–97)

It is characteristically simple but loaded writing, as evolutionary concepts of endemism and speciation blur into notions of heritage, intertextuality, and aesthetics. The “stocking” of such islands over millennia (a metaphor implying oversight and directedness where, properly speaking, there is none); the uniqueness of the life-forms that evolved there (but a

uniqueness only perceptible by disruptive human agency); the clues that they offered to what Darwin (whom she quotes) called “that mystery of mysteries—the first appearance of new beings on earth”: all of these are set against the destruction that Carson traces as the European maritime empires come into being: “Upon species after species of island life, the black night of extinction has fallen” (94).

As such, the paradox that we have already traced in Carson’s ocean trilogy—that its reverent and lyrical response to the natural world is also in one sense a product of American naval power and invasive technologies—can be extended much further back. The same global networks of exploration and knowledge production that yield the voyage of HMS Beagle also herald the sixth great wave of extinction on earth. The fortieth anniversary edition of *Silent Spring* proclaims the book “The Classic that Launched the Environmental Movement,” but a work like Richard Grove’s *Green Imperialism* (1995) asks us to envision a much longer, more global and more vexed genealogy of environmentalism.

The “diffusion model” suggested by the anniversary dust jacket (that environmentalism happens first in the West and is then exported to the rest) must be altered in favour of a reading that sees the discourse of conservation as in many ways a product of the European maritime empires encountering “the South.” Any attempt to understand the foundations of (Western) environmentalism, writes Grove, “actually involves writing a history of the human responses to nature that have developed at the periphery of an expanding European system” (12). This periphery—in particular the isolated colonial outposts of St. Helena, Mauritius, and the Cape of Good Hope where mariners impinged on closed ecosystems—“became central to the formulation of Western environmental ideas” and remains crucial when constructing “an historical anthropology of global environmental awareness” (12).

Beyond this, one sees the difficulty in “thinking” ecology as a concept: the circumscribed space and symbolic density of the remote island yield an irresistible metaphor of a stable, closed, and complex system. But such “total relations” can only be read by the disruptive human presence: they are produced by the very breach through which we have entered. The “museum” of the island ecosystem is one abstracted from

human society, one where any change is figured (conservatively) as harmful. It offers itself as a stable end-point to evolutionary processes—even though notions of “climax” and “balance” are largely defunct in contemporary ecology, since they posit a human-centred timescale that is hardly admissible in the totality of organic evolution. “In fact, complexity itself,” writes Dana Phillips, “once thought to guarantee ecological stability, is now seen as, well, more complex than that” (22). And as Coetzee’s disenchanting Elizabeth Costello reminds us when lecturing on “The Poet and the Animals,” no less than the nineteenth-century picturesque or the prospects of Romanticism, our lay, almost mystical sense of an ecological connectedness inevitably turns on the privileged position of the viewing subject. It is a vision only available to a cultural text that reasserts its separation even as it seeks to exist as only one part of the whole. “Animals,” she remarks, “are not believers in ecology” (*The Lives of Animals* 54).

III

... a complex, precise and highly integrated system . . .
Rachel Carson, *Silent Spring* (1962)

Turning finally to *Silent Spring*, I hope once again to address the “simplicity” of its prose surface not prior to but *following* an awareness of complexity: the variable politics and sedimented figurations that underlie a concept like ecology. This dialectic between the simple and the complex is visible from the first pages of the work, with an author’s note stating that “I have not wished to burden the text with footnotes,” yet pointing toward the extensive and meticulous list of sources at the end of the book, should readers wish to “pursue some of the subjects discussed” (Carson vi). The principle is at work throughout the text, allowing the reader to enter at the desired level of complexity on a spectrum ranging from fable and personal anecdote to peer-reviewed literature. It is a quality that makes the text an unusually adaptable one yet also renders it vulnerable to the charge that it absorbs all kinds of evidence and gives them all equal weighting. The “literariness” that I hope to explore, then, inheres not in its lyrical turn of phrase but in its tendency to move freely

(or to Carson's detractors, irresponsibly) between different registers and orders of signification: from scientific findings to subjective testimony; from organic chemistry to well-worn cultural archetype and back again.

Nowhere is this strategy more visible (and more risky) than in the opening section, "A Fable for Tomorrow," which begins in the form of a fairy tale: "There was once a town in the heart of America where all life seemed to live in harmony with its surroundings" (1). Describing how this small-town idyll is overcome by a "strange blight," it combines (as several critics have noted) two of the main narrative structures that modern environmentalism will draw on again and again: the idyll and the apocalypse. From the books of Genesis and Revelation to the post-apocalyptic imaginings of Margaret Atwood and Cormac McCarthy, such genres are deeply encoded into Judaeo-Christian cultures of nature: the first and last words on the subject, as it were. Today, the prevalence of this pastoral/apocalypse "binary code" might go some way to explain the representational challenge that Nixon explores with regard to environmental crises. The complexity of a "wicked problem" like climate change continues to elude the ready-made narratives of last-minute salvation or spectacular disaster propagated by the bestseller, eco-thriller, or Hollywood blockbuster. Rather than working through the processes of compromise, contraction, and mitigation that global warming requires, personal and political responses (as Al Gore remarked in *An Inconvenient Truth*) all too often retreat into either denial or fatalism: responses that are, in part, the long-held cultural logics of pastoral and apocalypse continuing to play themselves out.

In its historical moment, though, *Silent Spring* was still trying to bring such ideas of global, systemic pollution into conceptual focus and cultural currency, and doing so via a further combination of the very ancient and the very modern. Underwriting the book, as Ralph Lutts shows, is an unspoken analogy between pesticides and another form of "slow violence" that was invisible, cumulative but far more prevalent in public consciousness during the 1960s—that of nuclear fallout. The opening fable, then, is setting in motion both deep cultural archetypes as well as entirely contemporary imaginaries generated by the complex propaganda relays of the Cold War. Using *Silent Spring* to begin his

introduction on ecocriticism, Garrard remarks that (via such rhetorical operations) “the great achievement of the book was to turn a (scientific) problem in ecology into a widely perceived ecological problem that was then contested politically, legally and in the media and popular culture”; it was constructed not only to achieve certain political results (President John F. Kennedy’s Special Advisory Committee chief among them), but also “a subtle revision of the concept of ‘pollution’ itself” (6–7).

Nonetheless, abstracted from a more complex whole, the deliberate simplicity of the opening fable proved irresistible to those attacking Carson. In October 1962 the public relations department of the Monsanto Corporation (an industry leader in the manufacture of agricultural pesticides) produced a parody entitled “The Desolate Year.” Attempting to mimic Carson’s prose, it evoked the perils of a world without pesticides:

Quietly then, the desolate year began. Not many people seemed aware of the danger. After all, in the winter, hardly a housefly was about. What could a few bugs do, here and there? How could the good life depend on something so seemingly trivial as bug spray? Where were the bugs anyway? The bugs were everywhere. Unseen. Unheard. Unbelievably universal. Beneath the ground, beneath the waters, on and in limbs and twigs and stalks, under rocks, inside trees and animals and other insects—and yes, inside man. (Qtd. in Lear 431)

Parody, of course, is always an indirect form of tribute: it only works against forms that have achieved a certain level of cultural visibility (a status which it then confirms and amplifies). But it is worth probing why this particular example seems so ineffective. For one thing, the idea that “the bugs were everywhere” is a major part of Carson’s argument. In the chapter “Nature Fights Back” the text explores in great detail the vital importance of “natural” insect resistance (which indiscriminate pesticide use would suppress) quoting the ecologist Robert Metcalf: “The greatest single factor in preventing insects from overwhelming the rest of the world is the internecine warfare which they carry out among themselves” (247). And if the garden of the opening

fable is that of Eden, this chapter gives us a very different vision of a nocturnal hunting ground:

Most of us walk unseeing through the world, unaware alike of its beauties, its wonders and the strange and sometimes terrible intensity of the lives that are being lived about us. . . . Perhaps we may have noticed an oddly shaped insect of ferocious mien on a bush in the garden and been dimly aware that the praying mantis lives at the expense of other insects. But we see with an understanding eye only if we have walked in the garden at night and here and there with a flashlight have glimpsed the mantis stealthily creeping up upon her prey. . . . Then we begin to feel something of that relentless pressing force by which nature controls her own. (249)

One sees here how the “lyrical” dimension of Carson’s writing (which Monsanto attempts to ridicule) is being reconfigured for polemical effect. As with her passages about the “meaningless” profusion of oceanic life, the prose here engages what Steiner calls the “teeming strangeness and menace of organic presences” (140): not just the “relentless pressing force” of predation and resource competition, but also the sheer otherness of non-human life—the pressure that it exerts at the boundaries of human representation.

Critics were quick to condemn Carson in gendered terms as sentimental and overly emotive, a bunny-loving amateur. But far from being a site of sentimental and self-indulgent evocation, the ecological “balance” of this night-time garden is disclosed as a resolutely materialist and pragmatic vision. Moreover, the chapter goes on to show that this equilibrium is itself not given or “natural,” anticipating the charge of innocence levelled at those framings of environmentalism that depend solely on a recourse to an Eden before the Fall:

In some quarters nowadays it is fashionable to dismiss the balance of nature as a state of affairs that prevailed in an earlier, simpler world—a state that has now been so thoroughly upset that we might as well forget it. . . . The balance of nature is not

the same today as in Pleistocene times, but it is still there: a complex, precise and highly integrated system of relationships between living things which cannot safely be ignored any more than the law of gravity can be defied with impunity by a man perched on the edge of a cliff. The balance of nature is not a *status quo*; it is fluid, ever shifting, in a constant state of adjustment. (Carson 246)

“Complex, precise and highly integrated”—the phrase seems to offer itself as a description of the larger text. And much of its hidden complexity resides, I would suggest, in an awareness of how ideas like “the simple” and “the complex” can be deployed as rhetorical strategies, either for or against environmentalist lobbies: that these are, in effect, tropes and speech acts just as much as neutral descriptors. The passage above, for example, shows how *Silent Spring* appeals to the “law” of natural systems while at the same time acknowledging their contingency: “[T]he balance of nature is not a *status quo*.” And indeed, the suppleness of its argumentation seems to inhere in just this “balancing act,” as the text shuttles between value-judgement and contingency. At certain junctures, “nature” is personified and gendered in a way that seems impossibly quaint, but in the larger workings of the text, we are given a powerful sense of the social processes that constitute what is “natural”—“naturalisation,” that is, as a process of acquiescing in the contingent as if it were the inevitable: “Have we fallen into a mesmerized state that makes us accept as inevitable that which is inferior or detrimental . . . ?” (12). She then quotes the ecologist Paul Shepard, who (in one of the broadest rhetorical strokes in the book) widens such thinking into a larger indictment of post-War American society: such thinking “idealizes life with only its head out of water, inches above the limits of toleration of the corruption of its own environment”: “Why should we tolerate a diet of weak poisons, a home in insipid surroundings, a circle of acquaintances who are not quite our enemies, the noise of motors with just enough relief to prevent insanity? Who would want to live in a world which is just not quite fatal?” (Shepard qtd. in Carson 12). The rising tension of the rhetorical questions here and the broader

critique of a technologically administered society both seem to prefigure an anti-globalisation stance like that of Roy quite distinctly. Indeed what makes Carson's text still timely, and what links the two campaigners most directly, is the way that each calls into question the credibility of the expert—and what one might call the politics of certainty—in a market-driven economy. “Who made the decision that sets in motion these chains of poisonings . . . ?”, we read in *Silent Spring*: “Who has decided—who has the *right* to decide—for the countless legions of people who were not consulted . . . ?” (127; emphasis in original). In Roy's “The End of Imagination,” similar questions are posed but in a more fervent register, given that there is (in her view) not even a language available to conduct a collective discussion about an issue like nuclear weapons in a country as divided as India:

Who the hell is the prime minister to decide whose finger will be on the nuclear button . . . ? Who the hell is he to reassure us that there will be no accidents? How does he know? Why should we trust him? What has he ever done to make us trust him? What have any of them ever done to make us trust them?
(161–62)

Yet equally, such passages reveal marked differences between their styles. Whereas Roy—as the celebrity “writer-activist”—is very much present in her essays, it is characteristic of Carson that moves towards larger cultural meanings are often made by citing others (so too the epigraphs by Albert Schweitzer and E. B. White), and such moments bring into focus the nature of the personal that is at work in the text.

In her reflections on “The Modern Essay” (1925), Virginia Woolf remarked that “it is only by knowing how to write that you can make use in literature of yourself; that self which, while it is essential to literature, is also its most dangerous antagonist” (221). As a cultural critic always concerned with “the common reader,” she summarised the essayist's dilemma: “Never to be yourself and yet always—that is the problem” (221). The lines suggest how difficult it is to isolate what constitutes a personal style, or signature, in any given text. Yet if parody usually works best when satirising an obtrusive sense of self-hood in writing

(the “dangerous antagonist” of self-importance and mere opinion), then Carson’s prose gave little opportunity for the public relations department of Monsanto.

Silent Spring reads as both an intensely personal document yet also one in which the narrative “I” has been sublimated to a remarkable extent—hence the repeated use of the first person plural: “we,” “our,” “us.” And it is hard not to read this as, in part, a product of deeply personal backstory that underwrites the work: Carson’s struggle with cancer and a range of other debilitating conditions prior to its publication, and her death soon after in April 1964. Her chronic ill health demanded an unusual distance from the text, even during the process of composition. Writing to a friend following an infection in 1961–62, she remarked that the only good thing in the experience was “the long time away from close contact with the book,” which may have generated the “broader perspective which I’ve always struggled for, but felt was not achieving”: “Now I am trying to write it all more simply and perhaps more briefly and with less exhaustive detail” (qtd. in Graham 35). She was referring specifically to the third chapter, “Elixirs of Death,” a “Who’s Who” of industrial poisons (as she liked to call it) that proved one of the most difficult sections and was compulsively rewritten. “The material was overwhelming in volume, and often subtle in detail,” writes Frank Graham in an early survey of the book’s reception: “How could she get the story across to the great mass of readers, untrained in science, who must ultimately provide the pressure that would bring about saner policies? How could she make chlorinated hydrocarbons compelling?” (35).

Tracking the relation between the simple and the complex at this molecular level, one begins to discern, perhaps, the deep structure of the work. To understand the lethal nature of modern insecticides, Carson remarks, it is necessary to grasp how they are linked to “the basic chemistry of all life”: the almost infinite capacity of carbon atoms for uniting with each other and other substances in chains, rings, and other configurations. Explaining via diagrams how chloroform and the cleaning fluid carbon tetrachloride can be produced from methane by simple substitutions of hydrogen atoms for chlorine, she goes on to say:

In the simplest possible terms, these changes rung upon the basic molecule of methane illustrate what a chlorinated hydrocarbon is. But this illustration gives little hint of the true complexity of the chemical world of the hydrocarbons, or of the manipulations by which the organic chemist creates his infinitely varied materials. . . . By seemingly slight changes the whole character of the substance is changed; for example, not only what is attached but the place of attachment to the carbon atom is highly important. Such ingenious manipulations have produced a battery of poisons of truly extraordinary power. (20)

Here then is the “grammar” not only of agricultural pesticides but of organic evolution itself: a system that produces immense complexity from a series of simple propositions. Human language, as Wilhelm von Humboldt showed, is a system that makes infinite use of finite means: an insight that has been fundamental for both linguists and geneticists in the twentieth century. And beyond her customary skill at synthesis and visualisation, what Carson’s hard-won attempt to dramatise the dialectic of the simple and complex at the atomic level sets in motion is an aspect of the text that still reads as contemporary. It is the way that *Silent Spring* relocates the concept of ecology from “out there” (the wilderness, the forest reserve, the oceanic island) to “in here.” Able to move between different worlds and different scales, it brings the ecological vision into more intimate and proximate spaces: the garden, the household, and finally the human body itself. Having described the “web of life—or death” in a river system, Carson writes:

But there is also an ecology of the world within our bodies. In this unseen world minute causes produce mighty effects; the effect, moreover, is seemingly unrelated to the cause, appearing in a part of the body remote from the area where the original injury was sustained. “A change at one point, in one molecule even, may reverberate throughout the entire system to initiate changes in seemingly unrelated organs and tissues,” says a recent summary of the present status of medical research. (189)

One senses the personal here, even as it is sublimated: Carson attempting to filter and simplify her text, even while struggling with her own ailing body.

Following this, it is revealing to close with two very different versions of what science might consist of, each appearing in Lear's biography. The first is from a column by R. Milton Carleton, a "ubiquitous critic for industry associations" and member of the National Association of Science Writers who objected strongly to Carson's work in his gardening column. *Silent Spring*, he wrote, "is NOT a scientific work" (431). Full of errors not noticeable to the lay reader, it was the result of "a writer who has ventured into an unknown field and had absorbed all sorts of evidence, some of it sound, some of it worthless, and given everything equal billing" (431). Beyond all the gendered attacks on Carson, this is the larger critique that still carries weight: the idea that scientific discourse must (like any other) proceed by limiting its field, and that Carson's continual, metaphorical "crossings" between registers, between anecdotal detail and peer-reviewed journals, result in a dilution of the text.

Yet another, very different idea of what science consists of appears in a letter from Carson to her doctor George Crile in 1960, following his frank diagnosis of the cancer that was spreading through her body:

You smiled when I suggested that medicine could ever be scientific, but one of the things I appreciate in you, and one of the things I mean by "scientific," is your awareness of what is *not* known and your unwillingness to rush in with procedures that may disrupt that unknown but all-important ecology of the body cells. I appreciate, too, your having enough respect for my mentality and emotional stability to discuss this all frankly with me. (Qtd. in Lear 379–80; emphasis in original)

The remarks take on added weight following Carson's unhappiness with her previous physician and Lear's speculation that she may not have been provided with the facts about her condition earlier because, according to medical protocols of the 1950s and 60s, a diagnosis of malignancy would generally be given to the husband of the woman being

examined; as an unmarried woman whose most intense relationship was with another woman (Dorothy Freeman), Carson did not fit this social paradigm (Lear 368). Carleton's idea of science writing as commanding a strictly defined field and of confidently separating valid from invalid forms of knowledge is modified here by an awareness of the scientific method having always to work with sites of profound unknowability and unpredictability. Tellingly, it is a vision that is derived from the bringing of her ecological vision into the most personal domain imaginable. If critiques of ecology as a metaphor often focus on how it relies on distant, undisturbed systems, or how the perceiving human intelligence reasserts its separation from the world even as it proclaims interconnection, then here we have something very different: a vision of science that is embodied in a startlingly literal sense: an ecology of cells and tissue that is already, inevitably, and fatally disturbed.

If Carson was able to raise such issues with her physician and a few close friends, her rapidly spreading illness was something that she worked hard to keep out of the public domain, worried that it might distract attention from the work and make her book vulnerable to further charges of overstatement and hysteria. The personal backstory is meticulously suppressed and sublimated, yet it surely contributes to the tone of elegy that pervades *Silent Spring*, a quality that reveals itself, perhaps, in the more obviously "literary" moments of the text where Carson's immersion in a rich network of canonical texts shows through.

To cite just one example in closing: at the end of the chapter "Needless Havoc," she describes the painful deaths suffered by birds and ground squirrels affected by the unselective use of insecticides—or as she renamed them (with characteristic attention to language), "biocides." The attitude in death of such small creatures—head and neck outstretched and mouth containing dirt, "suggesting that the dying animal had been biting at the ground"—leads her to close with the question: "By acquiescing in an act that can cause such suffering to a living creature, who among us is not diminished as a human being?" (100). The prose makes itself vulnerable, certainly, to the charge of sentimentality, but underlying and strengthening the language is a verbal echo of John Donne's famous "Meditation XVII":

No man is an island, entire of itself; every man is a piece of the continent, a part of the main; if a clod be washed away by the sea, Europe is the less, as well as if a promontory were, as well as if a manor of thy friend's or of thine own were; any man's death diminishes me, because I am involved in mankind, and therefore never send to know for whom the bell tolls; it tolls for thee. (1305)

This biblically inflected, narrating “I” that is “involved in mankind” and “diminished” by any loss of the larger social totality is one that Carson’s text seems intent on relating to all organic life. In its continual attention to the cultural sense that we make of the natural world, her oeuvre suggests “the human” itself as a quality constructed out of and calibrated by our relations with the “endless forms” produced by evolution. As such, it seems apt that the metaphor of the isolated oceanic island is refused here; rather than the static “museum” of natural forms in *The Sea Around Us*, we are offered, via an intricate pattern of allusion in Carson’s work, a transformative “literary ecology” that braids together nature writing, polemic, and deeply personal intimations of mortality. And as her biographer points out, such sounds and sea-going metaphors were echoed again in the lines from T. S. Eliot’s “The Dry Salvages” that were read at the scattering of Carson’s ashes along the coast at Sheepscot in the summer of 1964:

The sea has many voices . . .
The distant rote in the granite teeth . . .
And under the oppression of the silent fog
The tolling bell
Measures time not our time, rung by the unhurried
Ground swell, a time older than chronometers, older
Than time counted by anxious worried women
Lying awake, calculating the future.
Trying to unweave, unwind, unravel
And piece together the past and the future,
Between midnight and dawn, when the past is all deception,
The future futureless, before the morning watch

When time stops and is never ending;
And the ground swell, that is and was from the beginning,
Clangs
The bell.
(1250)

Notes

- 1 This paper emerges from a symposium held at the University of Cape Town in May 2012 to mark the fiftieth anniversary of Rachel Carson's *Silent Spring*. Hosted by the Institute for the Humanities in Africa (HUMA), the event was intended to explore the contemporary resonances of Carson's text from the global South and also to consider the emerging field of the environmental humanities. Writers, historians, literary scholars, and social anthropologists were asked to intervene in debates where the voices of natural scientists are typically more prominent.
- 2 Following the serialisation of *Silent Spring* in *The New Yorker*, a former Secretary of Agriculture supposedly wrote a letter to Dwight Eisenhower wondering "[w]hy a spinster with no children was so concerned about genetics?", concluding that she was "probably a Communist." As Lear remarks in her biography, "the remark was repeated so many times that its origin became inconsequential" (429). See Roy's "On Citizens' Rights to Express Dissent" for a description of the array of petitions filed against her. In July 1999, following Roy's protest against the Sardar Sarovar dam project, criminal charges were laid against her and the Indian Supreme Court conducted hearings to decide whether the dignity of the court had been violated: "vicious stultification and vulgar debunking cannot be permitted to pollute the stream of justice . . . we are unhappy at the way in which the leaders of NBA and Ms. Arundhati Roy have attempted to undermine the dignity of the Court. We expected better behaviour of them" (*Power Politics* 97).
- 3 Buell pays careful attention to the text in his influential (and canon-forming) *The Environmental Imagination*. See also Waddell's *And No Birds Sing*.
- 4 I have adapted this list from Nixon's "Environmentalism and Postcolonialism."
- 5 As Lewis points out in "Smokey the Bear in Vietnam," the motto of the "Ranch Handers" was a sardonic adaptation of the well-known US Forest Service posters: "Only you can prevent a forest"—a grim splicing of the discourses of domestic conservation and international aggression (598–603).
- 6 See Rotberg's *The Founder*.
- 7 This scheme to "improve the amenities of the Cape" is fictionalised in Harries' novel *Manly Pursuits*, in which Professor Wills, a reclusive Oxford don and ornithologist, is responsible for supervising the release of two hundred English songbirds into forests of the Groote Schuur estate. Confused by the change of hemisphere and season, the nightingales and chaffinches refuse to sing.

- 8 Phrases from Kipling's poem "The Burial" [1912], one stanza of which is engraved on the Rhodes Memorial, further up the slopes (209).
- 9 In her account of South African literature and the politics of place, Barnard links their argument to Gordimer's 1974 novel *The Conservationist*. Focalised through a wealthy Johannesburg industrialist who retires to a plot of veld, this apartheid-era "story of an African farm" reveals how "the discourse of the ecological preservation is . . . exposed as an alibi for territorial possession and policies of exclusion: it offers a way in which the white landowner can express his anxiety about black trespassers and encroaching townships without seeming to be as crudely racist as his less aesthetically attuned Afrikaans neighbours." The Comaroffs, Barnard concludes, "transpose Gordimer's critique of the ideology of conservation onto a grand international scale, one appropriate to an era of globalisation" (173).
- 10 Several environmental historians have since challenged Pratt's account. See for example Grove's *Green Imperialism* and Beinart's *The Rise of Conservation in South Africa*. Beinart writes that there is a danger of oversimplifying this tradition of writing: "Knowledge was built from a multiplicity of indigenous and colonial agents, each with different languages, modes of living, and views of nature" (29).
- 11 Merchant voices a stronger version of this argument in *The Death of Nature*.
- 12 See the introductory sections in Garrard, *Ecocriticism* (5–6). In the often overwrought debates about botanical "invaders" on the slopes of Table Mountain—which have tended to resolve into pine (colonial, bad) versus *ymbos* (native, good)—one would need to disaggregate cultural subtexts from valid ecological concerns. To distinguish, for example, between the stone pines (*Pinus pinea*) and the cluster pines (*Pinus pinaster*): the latter spread rapidly by seed and pose a fire danger; the former do not, and are slowly disappearing from the cultural landscape as they become "senescent" and drop their branches around the Rhodes Memorial.
- 13 See for example "The Ultimate Corporation," McKibben's review of *Private Empire: ExxonMobil and American Power* (2012) by Coll. Supported by Exxon, the American Petroleum Institute aimed in the 1990s to ensure that "recognition of uncertainties" became part of public discourse on the topic and that media coverage recognised "the validity of viewpoints challenging the current 'conventional wisdom'" (54). If one replaces the phrase "media coverage" with "textuality," and "conventional wisdom" with "grand narrative," one has the standard operating procedure, perhaps, for a literary studies seminar at a liberal arts college during the same period.
- 14 "Millions of people around the world suffer the painful and often deadly effects of malaria because one person sounded a false alarm. That person is Rachel Carson" (Project of the Competitive Enterprise Institute).

- 15 In rebutting the charge that Carson's campaign against DDT led to deaths from malaria, the authors make two main points. Firstly, that mosquito resistance to malaria was already making the use of the chemical ineffective by the 1960s. Secondly, the United States ban on DDT in 1971 did not apply outside that country, and the Environmental Protection Agency had no authority over other nations (i.e., Carson's book and the policy changes it precipitated had nothing to do with what did or did not happen in Africa). Since 2000, articles defending DDT have appeared from the Heartland Foundation and been parroted by talk-show hosts such as Rush Limbaugh (217). See the *Guardian* website for a valuable curation by Hickman of articles reflecting on the fiftieth anniversary of *Silent Spring* and tracking such debates across left- and right-wing online platforms: "What is the Legacy of Rachel Carson's *Silent Spring*?"
- 16 The phrase is from Keats' famous definition of "Negative Capability" in 1817: "what quality went to form a Man of Achievement especially in literature & which Shakespeare possessed so enormously—I mean Negative Capability, that is when man is capable of being in uncertainties, Mysteries, doubts without any irritable reaching after fact & reason—Coleridge, for instance, would let go by a fine isolated verisimilitude caught from the Penetralium of mystery, from being incapable of remaining content with half knowledge" (942).
- 17 As the title of Roy's essay suggests, the compound "writer-activist" might also violate a set of gendered assumptions regarding the amateur and professional, the lyrical and the technical: "The Ladies Have Feelings So . . . Shall We Leave it to the Experts?" (*Power Politics* 1).
- 18 The introduction to *Romantic Ecology* has proved an important document in Anglo-American ecocriticism, particularly the passages where Bate calls for a shift from "red" to "green" and makes the point that the broadly Marxian critique of the concept "nature" risks dovetailing with the workings of extractive, highly capitalised approaches to the biosphere: "Nature is a term that needs to be contested, not rejected. It is profoundly unhelpful to say 'There is no nature' at a time when our most urgent need is to address and redress the consequences of human civilization's insatiable desire to consume the products of the earth." Both free-market and Marxian framings of "nature," he seems to suggest, instrumentalise the non-human world: another example of the difficulty in disgregating progressive from reactionary critique in the discourses surrounding environmentalism (56).
- 19 "Wordsworth went to the Lakes, but he was never a lake poet. He found in stones the sermons he had already hidden there" (Wilde 909).
- 20 Haeckel coined the word "oekologie" in his *Generelle Morphologie der Organismen* (Berlin, 1866), giving this more extended gloss in a paper of 1870.
- 21 See Phillips, *The Truth of Ecology*, for a polemical critique of the over-reliance on metaphor and glib analogy in American ecocriticism and an impatience with its devotional, even anti-intellectual quality.

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