Seeds of Change

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Remembering Our Ecological Place: Environmental Engagement in Kingsolver's Nonfiction

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I believe the purpose of art is not to photocopy life but distill it, learn from it, improve on it, embroider tiny disjunct pieces of it into something insightful and entirely new.

—"The Not-So-Deadly Sin"

Through these words, Barbara Kingsolver maps a process of observation, inscription, evolution, and ultimately creation. The same story might be told of a seed's transformation to plant, to bud, to flower, the culmination, Kingsolver beautifully reminds us, that is "the plant's way of making love" ("Knowing Our Place" 38). In this simple gesture, Kingsolver distills for us the poetry of science, a union that might do well to guide us in our current historic moment of environmental crisis, a crisis that calls us to honor our origins, to remember our stories, and to become reacquainted with our biological communities.

Barbara Kingsolver's writing has generated provocative conversations about its recurring themes of community, place, and memory. Scholars such as Magali Cornier Michael study the "diversity within deliberately constructed familial communities" in *The Bean Trees* and *Pigs in Heaven* (73), while Rinda West, regarding the character of Codi in *Animal Dreams,* argues "we see that many problems are rooted in an absence of memory. . . . People forget, but 'the land has a memory' and it holds in the earth the scars of human thoughtlessness" (154). Kingsolver's fiction thoughtfully anticipates the collective power of created worlds, and while

her fiction receives due critical attention for its social commentary, Kingsolver also achieves this effect in her nonfiction. Through her narrative engagement with memory, story, and place, Kingsolver offers an environmental ethic of bioregionalism, ultimately suggesting that when humans begin to understand their place within an evolving biological context, their actions will move toward the sustenance of and care for their human and nonhuman communities.

In "Postcards from the Imaginary Mom" from *High Tide in Tucson,* Kingsolver describes "the masses of nonfiction scholars [as writers] whose subject matter is more vital than it is sexy" (163). Although her comments are not self-referencing, Kingsolver's nonfiction addresses a subject that is indeed vital: human relationship to nonhuman nature. Her literary inscriptions are successful not only because of her artistic sensibilities but also because of her empirical skills of perception as a trained evolutionary biologist. In this way, her nonfiction uncovers the value and need for an interdisciplinary meeting of literature and science, a meeting that both activists and scholars alike are increasingly aware of as crucial for our current state of environmental crisis.

Assuming the complementary voices of science and literary writer, Kingsolver is of course in good company. Rachel Carson is perhaps the most formidable nonfiction voice of the twentieth century to teach us about our biological place using both scientific and poetic language. In the expressive prose of *Silent Spring,* which remains one of the most revolutionary works of environmental science, Carson integrates references to Medea of Greek mythology, the Grimm fairytales, and Robert Frost's metaphorical paths, subtly revealing how literature might inform science writing to render meaning. And although Kingsolver admires both Thoreau and Darwin as "unabashedly . . . scientific and literary," she seems particularly humble about her own interdisciplinary path: "For all the years I studied and worked as a scientist, I wrote poems in the margins of my chemistry texts and field notebooks. But I never identified myself as a poet, not even to myself" ("Confessions of a Reluctant Rock Goddess" 131). And yet, Kingsolver esteems historical thinkers who have taught us through their successful union of these spheres: "Henry David Thoreau, Darwin's contemporary . . . brought to his work an expansive poetic sensibility" ("The Forest in the Seeds" 237). Kingsolver's own writing successfully interweaves these sensibilities without undermining either perspective. She remarks that Thoreau

"understood that the scientist and the science are inseparable, and he insinuated himself into his observations in a way that modern science writers, we virtuosos of the passive voice, have been trained carefully to forsake" (239). Like Thoreau, she treads such depths, understanding that her perceptions of place breathe the same air as her lungs and walk the same soil as her predecessors. In this way, her work responds to a desperate need of our historical moment to reacquaint human life with the physical and conceptual places and processes that sustain and nurture it.

Neil Evernden contends that because of recent scientific discoveries of ecology and cellular biology, humans more fully comprehend the extent to which "there is no such thing as an individual, only an individual-in-context, individual . . . defined by place" (103). Evernden, a natural scientist, continues to argue that science alone is insufficient for conservation: "environmentalism involves the perception of values, and values are the coin of the arts" (103). In the field of literary scholarship, the emergence and growth of ecocritical studies is perhaps the most hopeful enactment of interdisciplinary engagement to confront environmental crisis. Camps of scientists and poets have been preaching to their own choirs, but with too little impact on the wider masses that remain unaware, or unconvinced, of how and why as citizens of this earth we should care about the ecological sustainability of our daily choices and impulses. Through their accessible explanations of ecological processes, Kingsolver's narratives examine how humans are individually and collectively wed to place. If there is ever to be a practical application of ecocritical scholarship, if it is ever to effect change, it must, as Kingsolver's essays do, be unafraid to embrace and listen to the lessons of science.

The scholarship of ecocritic Glen Love is indeed a call for such praxis, recognizing that "[w]e have to keep finding out what it means to be human. And the key to this new awareness is the life sciences" (6). Tearing down the long divisive notions that the sciences are antithetical to the humanities, Love reminds us, and Kingsolver enacts for us, that to more fully understand our humanity we must more fully understand our biology. Kingsolver's nonfiction offers us a paradigmatic example of how narrative discourse can achieve this union and perhaps even nourish the mindful citizenship of its ready listeners willing to take her words to the earth.

Central to Kingsolver's invitation to environmental engagement is her framework of memory. Her essay "Memory Place," for example, begins with lush descriptions of a spring morning drive down the deep and winding

roads of the Kentucky woods. The silence of the front seat is broken with what she describes as her daughter's sigh and childlike "poetic logic": "'This reminds me of the place I always like to think about'" (170). This narrative intrusion reminds the reader that the literary translation of the deep forest is rooted in Kingsolver's immediate experience, in this instance her role as a mother. At the same time, as the prose unfolds, Kingsolver sketches her present moment against memories of familial play in these woods:

> My brother and sister and I would hoist cane fishing poles over our shoulders, as if we intended to make ourselves useful, and head out to spend a Saturday doing nothing of the kind. We haunted places we called the Crawdad Creek, the Downy Woods (for downy woodpeckers and also for milkweed fluff), and—thrillingly, because we'd once found big bones there—Dead Horse Draw. ("The Memory Place" 170–71)

Through their active play, Kingsolver and her siblings gave story to their woods, unknowingly participating in the ancient ritual of place-lore that we find in the native tribal cultures of North America as well as in the Celtic inscriptions of *dinnseanchas,* a place-naming identified by natural features and by human interaction with these topographies, what J. F. Foster calls a "venerable if patchy folk natural history," that for centuries have connected humans to their landscapes through local story (43).

Moreover, Kingsolver's recollections in this essay concern something less tangible than active play and events. Her memory is also of emotive states, a learned appreciation that is nourished by her patience for seasonal returns and remembrance of what will come:

> Then we waited again for spring, even more impatiently than we waited for Christmas, because its gifts were more abundant . . . and somehow seemed more exclusively *ours.* I can't imagine that any discovery I ever make, in the rest of my life, will give me the same electric thrill I felt when I first found little righteous Jack in his crimson-curtained pulpit poking up from the base of a rotted log. ("The Memory Place" 171)

The "gifts" that Kingsolver refers to belonged to her and her siblings; they were "more exclusively ours," because of her timed investment in their ar-

rival and in their passing. This is not a proprietary arrangement, however. These places were theirs not because of an arbitrary legal contract but rather because of an organic biological contract of physical and emotional sustenance. Ultimately, from the child's perspective this place was *theirs* because they gave story to it and it, in turn, contributed to the possibilities of these stories through a symbiosis of human, place, and memory. Considered within the larger context of Kingsolver's work, nonfiction essays that carefully insinuate a biologist's acuity, this childhood awe is not without consequence. Such wonder leads her into a mature appreciation for an inheritance of the land's sustenance.

The narrative inscriptions in this example are not mere gestures of nostalgia. Her record and reflection contribute to an evolving ethic for how she proceeds in the world: "[I]t was the experience of nature, with its powerful lessons in static change and predictable surprise. Much of what I know about life, and almost everything I believe about the way I want to live, was formed in those woods" ("The Memory Place" 171). In the case of these "lessons" of what to predict, they are only possible because of such "experience," experience that is made meaningful because she returns to this place; as a child she returns season after season, recalling what should come, and as an adult she returns through memory and through the eyes of her daughter. Nature is didactic only to the extent that we acknowledge our communal participation in the movements of the natural processes. The learned patterns of her home woods are formative tools that nurture and sustain Kingsolver, even in their physical absence. These are her literal and figurative roots in place. And so the memory is an active presence in her place identity: "In times of acute worry or insomnia or physical pain, when I close my eyes and bring to mind the place I always like to think about, it looks like the woods in Kentucky" ("The Memory Place" 171). Ultimately, Kingsolver's childhood play taught her to rely upon the physical actors of her experience, to see place not as mere context but as a character in the script of her life story.

Even in this comfort, however, Kingsolver's turn to her identity source is not a naive one; she understands that while the place might be fixed in memory, what these woods "look like" is quickly changing, and because of her evolving connection with this place, these changes matter to her. As the essay evolves, so too does Kingsolver's ecological discourse on the Kentucky landscape of Horse Lick Creek. Though this waterway has "won enough points for beauty and biological diversity to be named a 'wild river,'" Kingsolver gives voice to its threatened viability ("The Memory Place" 172):

> Nobody, and everybody, around here would say that Horse Lick Creek is special. . . . In addition to the wild turkeys, the valley holds less conspicuous riches: limestone cliffs and caves that shelter insectivorous bats, . . . fast water where many species of rare mussels hold on for their lives. All of this habitat is threatened by abandoned strip mines, herbicide and pesticide use, and literally anything that muddies the water. So earthy and simple a thing as *mud* might not seem hazardous, but in fact it is; fine silt clogs the gills of filter-feeding mussels, asphyxiates them, and this in turn starves out the organisms that depend on the filter feeders. ("The Memory Place" 173–74)

Moving from personal narrative to ecological explication, the essay juxtaposes human story with land story, in both cases illuminating unanticipated value. Just as sibling play acquires new worth in the moments of adulthood struggle, humans acknowledge the land's riches when it is in its most vulnerable state. With attention to the geological detail and native dwellers of Horse Lick Creek, Kingsolver gives voice to a biological explanation of its ecological fragility. She illustrates for the reader that this place and its dangers are not always what they might seem, for the threats come not just in foreign pesticides and objects, but also in the mere redirection of seemingly harmless mud; the cruelest consequence of human apathy in fact brings the earth to turn upon itself.

In the same way, Kingsolver brings the reader's attention to the challenge of confronting these violations. Situating humans' earthly presence, Kingsolver ultimately locates the potential for healing in local thought and action:

> But when human encroachment alters the quality of a place that has supported life in its particular way for millions of years, the result is death, sure and multifarious. The mussels of Horse Lick evolved in clear streams, not muddy ones, and so some of the worst offenders here are not giant mining conglomerates but cattle or local travelers who stir up daily mudstorms. . . . Saving this little slice of life on earth—like most—will take not just legislation, but change at the level of the pickup truck. ("The Memory Place" 174)

This passage is careful not to simplify the process of endangerment. It is not the case that the threatened mussels were healthy in clear waters and now are harmed in muddy ones. Kingsolver writes that these mussels "evolved in clear streams." Theirs is not a static existence that is suddenly pushed into change because of human action, and yet now, because of muddied waters, an impossible adaptation is being asked of these mussels. Such impossibility suggests a disconcerting imbalance. In this one passage, human agency is both humbled and pronounced.

Even in our temporal smallness, our actions yield a tremendous power that must be acknowledged and surrendered at the level of the individual. As our national history of civil rights reminds us, such change is perhaps the more daunting task, particularly when, as is the case with many environmental decisions, economic survival is at stake:

> Poverty rarely brings out the most generous human impulses, especially when it comes to environmental matters. Ask a hungry West African about the evils of deforestation, or an unemployed Oregon logger about the endangered spotted owl, and you'll get just about the same answer: I can't afford to think about that right now. ("The Memory Place" 174)

Kingsolver incisively acknowledges the global predicament of these choices, giving story to a challenging and painful dilemma, that of human nature's immediate economic dependency on land use. Despite the comparatively short histories of human habitation that create this use and need of the land, the consequences are cogent, often allowing humans to conclude that we must choose between short-term economic stability and long-term environmental sustainability. This binary thinking brings environmental activism to a standstill because it perpetuates false divisions of human sustenance. What we cannot afford, it turns out, is to understand the earth's wellness as separate from the economic decisions that place the short-term interests of human markets over long-term interests of biological health. Any solution to debates on land use that relies on the compartmentalization of land and labor for its rationale will ultimately fail. What this also means is that we must be honest with ourselves about distinguishing between the economies that sustain us and those that appease us. Hunger and convenience are not equal considerations.

In telling the story of this small community of Horse Lick, Kingsolver draws our eye to the choices we make about which places warrant our investment. Too often, voices of the environmental movement privilege the most remote, the most exotic and extreme of our landscapes. In so doing, activists risk neglecting the voiceless communities of both human and nonhuman nature, an omission that the environmental justice movement works carefully to heal:

> We point to our wildest lands—the Amazon rain forests, the Arctic tundra—to inspire humans with the mighty grace of what we haven't yet wrecked. Those places have a power that speaks for itself that seems to throw its own grandeur as a curse on the defiler. . . . But Jackson County, Kentucky, is nobody's idea of wilderness. I wonder. . . . Who will complain, besides the mute mussels and secretive bats, if we muddy Horse Lick Creek. ("The Memory Place" 174–75)

As if in answer to her wondering, the essay unravels the local histories of this area. The family life of Polly and Tom Milt Lakes, for instance, invites a consideration of those who would complain, who would care, a story made more pronounced by her visit to the Lakes family cemetery, "where seventy or more seasons of rain have eroded the intentions of permanent remembrance" ("The Memory Place" 175). This faded word against stone is this land's first whisper of vulnerability. The lives had passed, but "the place itself seems relatively unaltered—at least at first glance" ("The Memory Place" 175). Continuing farther along the road, she observes: "The pollution here is noticeable. Upstream we passed wildcat strip mines, bulldozed flats, and many fords where the road passes through the creek" ("The Memory Place" 176). The disruption of this land comes in the form of development decisions, but it also comes in the ordinariness of the human traveler's path. Kingsolver is again assigning agency to the local and individual decisions that map the land's fate through daily routine.

Kingsolver also connects such ruin to a changed agricultural relationship to the land cycles and to the consequences of human habit:

> When Tom Milt and Polly Lakes farmed and hunted this land, their lives were ruled by an economy that included powerful

> obligations to the future. If the land eroded badly, or the turkeys were all killed in one season, they and their children would not survive. ("The Memory Place" 177)

The mere magnitude of the American expanse permits us to postpone the inevitable consequences of our decisions; removing our agriculture and land dependent economies from our homes allows disinterested development to persist in the wake of excessive consumption. The turn from the local to the global may delay recognition of these inevitabilities, but their eminence remains. Without a sense of obligation that comes from our attachment to immediate communities, this delay will still lead to our demise.

This changed dependence on the land, however, is about more than just economic separation from our source; it is essentially about "a failure of love for the land" as more than commodity, a love that is cultivated not by economy but by a willed remembrance of *all* that it teaches us ("The Memory Place" 177). A "new question in the environmentalist's canon, it seems to me, is this one: who will love the *imperfect* lands, the fragments of backyard desert paradise, the creek that runs between farms?" ("The Memory Place" 180). This is indeed the question that is at the center of bioregional thinking. "One might argue that it's a waste of finite resources to preserve and try to repair a place as tame as Horse Lick Creek. I wouldn't. I would say that our love for our natural home has to go beyond finite, into the boundless" ("The Memory Place" 180). While there is inherent value in knowing that true wilderness exists, the reality is that most humans have not intimately experienced the vast places so often associated with environmentalism and thus have not learned from them in the same way that they have learned from their own backyards. Our imaginative spaces begin with our own places of origin, our own locale, however these places might change with time and need, and however aesthetically unimpressive they may appear to the human eye that has been conditioned to equate grandness with value. Kingsolver invites us to see the value and force of our local habitat for the intricacies of our connection to it. By weaving together stories about a family car ride, recollection of her own childhood romps, detailed observation of current ecological processes, and the possibility for change, Kingsolver reminds us that this connection is a tapestry of childhood, motherhood, science, and legislation. It can never be just one of these. Memories of the "place [we] like to think about" teach us this, because they are never apart

from the past or the present that they negotiate. This is why and how Horse Lick gains new importance, not just for the characters of this essay, but now, because of the essay, for the reader as well.

Kingsolver's narrative return to her home place recurs throughout her nonfiction. Even while recognizing and appreciating her formed home in the desert land of Arizona, she simultaneously relies on her native landscape of Kentucky. In response to this settled life in the desert, she writes in "High Tide in Tucson":

> And yet I never cease to long in my bones for what I left behind. I open my eyes on every new day expecting that a creek will run through my backyard under broad-leafed maples. . . . Behind the howl of coyotes, I'm listening for meadowlarks. (6)

The topographical specificity of her home landscape and its wildlife summons her imaginative expectation. And yet, Kingsolver's individual memory of her local origin quickly melts into its larger context: "No creek runs here, but I'm still listening to secret tides, living as if I belonged to an earlier place: not Kentucky, necessarily, but a welcoming earth and a human family. A forest. A species" ("High Tide in Tucson" 7). Kingsolver understands her place in a biotic community through the lens of the Kentucky forest, suggesting that while we may "long" in our "bones" for our places of origin, they are only the starting points from which we envision our role in the larger narratives of ecological interconnection. For Kingsolver, this place is beside a running creek while for her neighbor in the Tucson desert land it might be the settling sand. Whether it is a riverbed, a prairie horizon, or a sea salted wind, there are fragments of place the ready listener can rely on to reveal a larger biological habitat. This turn is purposeful in Kingsolver's nonfiction and is the very convergence upon which she synthesizes her eye as a scientist with that of a literary voice.

Kingsolver's remembrance of a personal sense of place is described in emotional terms, but it is also situated in physical, bodily terms of primal connection. Her consistent return to biological origin is intricately informed by her attunement to evolutionary biology. She writes in "High Tide in Tucson": "What does it mean, anyway, to be an animal in human clothing? We carry around these big brains of ours like the crown jewels, but mostly I find that millions of years of evolution have prepared me for one thing only: to

follow internal rhythms" (8). In their articulation of the emotional sensibilities that shape human relationship, Kingsolver's essays simultaneously articulate the biology, the animal nature of human beings that exceeds the capacity for rational thought, which we so often privilege as our salvation. Glen Love argues that in such recognition lies the value and import of ecocritical study: "Although I recognize that our perceptions of nature are necessarily human constructed, these constructions are also, necessarily, the product of a brain and physiology that have evolved in close relationship to nature" (8). In this context, we might understand Kingsolver's internal rhythms as both literal and figurative. Such confluence is a powerful example of how the life sciences effectively teach us "what it means to be human" (Love 6).

Through her nonlinear movement between personal and public, human and nonhuman, Kingsolver's nonfiction communicates this awareness in a way that appropriately positions the human story within the larger diachronic landscape of evolution.[1] In so doing, her reflections on human behavior and proclivity are grounded not merely in her literary insight, but also in her biological understanding of human animal instinct. The power of these reflections is that seemingly ordinary events inspire their creation. Observing the quirky behavior of her daughter's pet hermit crab, Buster, Kingsolver writes: "Like Buster, we are creatures of inexplicable cravings. Thinking isn't everything. . . . I can laugh at my Rhodesian Ridgeback as she furtively sniffs the houseplants for a place to bury bones, and circles to beat down the grass before lying on my kitchen floor. But she and I are exactly the same kind of hairpin" ("High Tide in Tucson" 8). An understanding of these affinities, however, demands that human perception is guided by an understanding of the past, by a collective memory of what it is to exist as a being whose decisions are at the very least influenced by biological forces that may or may not fit their immediate contexts. The canine's instinct is to find rest only after spinning circles in an effort to turn tile into earth. This behavior reaches into the depths of an entrenched memory of how to claim the earth as a participant in a pack's survival. And while in the context of domestication such seemingly comical behavior risks violating rational order, from an evolutionary perspective it is a cogent reminder of a biological past that witnesses a comparatively fleeting present. By extension, this analogy suggests that if we as humans limit our explorations of self, of community, to our rational capacities, we will undoubtedly fall short in figuring out not only who we are but also how we will survive.

While Kingsolver points to the peculiar behaviors that propel us through our ordinary days, she also risks considering the darker implications of being a part of such a lattice:

> It's easy to speculate and hard to prove, ever, that genes control our behaviors. Yet we are persistently, excruciatingly adept at many things that seem no more useful to modern life than the tracking of tides in a desert. At recognizing insider/outsider status, for example, starting with white vs. black and grading straight into distinctions so fine as to baffle the bystander—Serb and Bosnian, Hutu and Tutsi, Crip and Blood. ("High Tide in Tucson" 8–9)

In this passage, Kingsolver asks us to confront the dismal human capacity for purposeful division, thus dissipating naive assumptions: human place within an evolutionary context should not be idealized as a peaceful balance. There are base and annihilating consequences for survival: "Deference to the physical superlative, a preference for the scent of our own clan: a thousand anachronisms dance down the strands of our DNA from a hidebound tribal past, guiding us toward the glories of survival, and some vainglories as well" ("High Tide in Tucson" 9). Acknowledgment of our place within the web of evolutionary feat must embrace even the darkest of the incongruities of human action and reaction.

However, Kingsolver does not fall into a simplified determinism; rather, she uses physical imagery of control to remind us of our agency: "If we resent being bound by these ropes, the best hope is to seize them out like snakes, by the throat, look them in the eye and own up to their venom" ("High Tide in Tucson" 9). In this image, we assert agency through recognition of our animal natures. The ropes that we resent so much are alive, and we must scavenge them, "like snakes," clench this life at its source, confronting its power and grotesqueness. The only thing more destructive than these ropes, according to Kingsolver, is the human inclination to neglect, or worse, deny them. We "rarely do" seize them as Kingsolver admonishes, making us the "silly egghead of a species that we are" ("High Tide in Tucson" 9). Humans willfully forget these ropes because we resist ourselves as animal beings, a resistance that diminishes the potential of individual and collective memory to sustain human existence, and that is rooted in and perpetuated by modern alienation from nonhuman nature.

Environmental philosophers and biologists alike have effectively challenged this cultural construction of nature as Other. And yet, while cultural theorists, literary critics included, might claim to recognize that humans are, as Emerson would argue, part and particle of nonhuman nature, there is a dearth of explorations of our animal natures. There are even fewer studies that explore how both the natural sciences and the humanities can illuminate these natures for a fuller understanding of ecological interaction. Kingsolver's nonfiction offers us both a subject for such study and an articulation of it:

> It's starting to look as if the most shameful tradition of Western civilization is our need to deny we are animals. . . . Air, water, earth, and fire—so much of our own element so vastly contaminated, we endanger our own future. Apparently we never owned the place after all. Like every other animal, we're locked into our niche: the mercury in the ocean, the pesticides on the soybean fields, all come home to our breastfed babies. ("High Tide in Tucson" 10)

This passage offers a narrative unwinding from our global to our local place. Braiding personal story into a reflection on comprehensive consequence, Kingsolver's testimony thoughtfully reintroduces humans into their biological homes, reminding us of our implication in environmental degradation. Human denial of biological origin has led to illusions of human ownership and control of place. The prospect of such control is nebulous at best; the paradox of such power suggests that our potential for damage is ultimately as great as the ties that connect us to place.

Kingsolver's careful recognition that there are also other influences on human action and will, however, grants her position authority. Assessing the controversial though well-respected claims for genetic determinism of renowned biologist E. O. Wilson, for example, she writes: "In seeking biological explanations Wilson provided almost no direct evidence for genetic control (as there is almost none to be found). . . . He ignored other levels of pressure—the social, material, and economic contexts—that influence decision making in the enormously flexible human brain" ("Semper Fi" 73). Human beings' evolutionary connection to the land is not exclusively biological; what we learn from a truly integrated understanding of natural history is that it is simultaneously connected to cultural histories. By

positioning personal memory of place against intellectual scientific explorations, Kingsolver's nonfiction enacts such integration, thereby emphasizing nature as both connected to and more than social constructions.

But even E. O. Wilson would argue that "human advance is determined not by reason alone but by emotions peculiar to our species" and the more intimately attuned we are to our emotional realities the more fully we will engage with our biological ones: "Humanity is part of nature, a species that evolved among other species. The more closely we identify ourselves with the rest of life, the more quickly we will be able to discover the sources of human sensibility" (Wilson 203). Kingsolver's nonfiction brings the reader to reflections on such identification, specifically to how humans dwell as part of the natural world through the memory of personal story. She also demonstrates, however, the way larger scripts of memory inform her personal experience. Kent Ryden suggests that when humans ask for stories we are essentially asking for "memory over the land" (54). Ryden's words imply an implicit connection between story, recollection, and the land. The materiality of this connection, however, manifests itself in the very processes of memory that enable the relations between person and place: "The notion of sense of place would be impossible without memory, the recollection of personal history grounded in a particular landscape or set of landscapes. Anything that awakens such memories or keeps them alive . . . can be understood as an expression of sense of place" (Ryden 75)

Ryden's sense of an awakening suggests that recognition of ourselves as a part of a place, whether it is in Horse Lick Creek or rural Bosnia, cannot be separated from memory. Memory, both individual and collective, relies on narrative connection. Personal attachment to and knowledge of place, one's bioregional identity, occurs through the invocation of and return to memory.

In a similar way, if science is to illuminate the paths that connect human and nonhuman nature, it too must negotiate the present through the lens of the past. Kingsolver's nonfiction does not merely tell us about such biological and cultural filters, it uses them to explicate her attachment to place. This explication is mindfully articulated in her response to the Heard Museum, a center of Native American heritage. Kingsolver writes: "It tells an extraordinary tale of human landscapes cradled and shaped by physical ones" ("The Spaces Between" 151). Kingsolver's maternal language describes human stories "cradled" by the land, thus reinforcing her ethics of place as relying on ecological dependence and emotional affection. This nurturance, however, is not an essentialist feminization: neither of the land nor of woman's inclina-

tion to care for it.[2] Rather, it is a humble recognition that humans exist in the arms of and because of our physical expanse. Without recognition of both of these landscapes, the "change at the level of the pick-up truck" will continue to slip from our grasp.

This persuasive discourse gains life in Kingsolver's essays through story and, more specifically, through a narrative articulation of the processes of memory.[3] In his incisively lyrical essay "Landscape and Narrative," Barry Lopez distinguishes between what he names our "external" and "internal" landscapes. The former of these, he writes "is the one we see—not only the line and color of the land and its shading at different times of the day, but also its plants and animals in season, its weather, its geology, the record of its climate and evolution" (64). Kingsolver is keenly aware of such seasonal rhythms and nuances in her nonfiction essays, engaging these details not as mere context but as participant in the narrative. In "Knowing Our Place" from *Small Wonder,* Kingsolver describes her family's summer dwelling in southern Appalachia, calling attention to variations on a day's rainfall:

> We pace the floorboards of its porch while rain pummels the tin roof and slides off the steeply pitched eaves in a limpid sheet. I love this rain; my soul hankers for it. Through a curtain of it I watch the tulip poplars grow. When it stops, I listen to the woodblock concerto of dripping leaves and the first indignant Carolina wrens reclaiming their damp territories. (32)

Kingsolver is unafraid to acknowledge her emotional need for these surroundings, in all their record of home and in all their climatic lushness. The fluidity of these lines captures a sensorial immersion into the rhythms of this place, holding still this moment, but also gesturing toward a pervasive movement: the birth of the poplars, the arrival of the wrens. Beginning with a familial collective "we," moving to the personal "I," the narrative ends with a turn to all life native to the moment and its fruition.

As the essay unfolds, Kingsolver's tactile and olfactory details invite the reader to feel the wetness of the ground, to smell the age of its crops. Such descriptions reinforce the truth that this is a place with a history, with seasons, and that to capture a moment is to necessarily be a part of this past: "My daughters hazard the damp grass to go hunt box turtles and crayfish, or climb into the barn loft to inhale the scent of decades-old tobacco. That particular dusty sweetness, among all other odors that exist, invokes the most reliable

nostalgia for my childhood" ("Knowing Our Place" 32). The beautiful spontaneity of child play is set against the mnemonic sequences of its place, and it is through this stitching that Kingsolver's exterior landscape is wed to an interior one. Human use of the land, in the form of youthful scavenges and agrarian commerce, helps to create and shape this story in potent ways, just as sensory details connect places and inform narratives of memory. Lopez defines this dialogue of internal and external landscapes as a "kind of projection within a person of a part of the exterior landscape. Relationships in the exterior landscape include those that are named and discernible . . . and others that are uncodified or ineffable. . . . That these relationships have purpose and order . . . is a tenant of evolution" (65). For this moment of Kingsolver's essay, the evolutionary phenomenon is as seemingly simple as a generational passing on of place, and yet as Lopez's words remind us, this culmination is indeed purposeful, perhaps *because* of our evolution. Is teaching our young *how* to allow the contours of the woods into our stories of play and imagination any different than a bird teaching its young where to find berries or how to find a winter path to a faraway place? Our "human sensibility," as Wilson called it, may in fact be particular to our species, but it is no less a part of our animal beings that rely on relationship and community.

Both Lopez and Kingsolver see story as an extension of this purpose. Lopez writes: "The purpose of storytelling is to achieve harmony between the two landscapes, to use all the elements of story . . . in a harmonious way to reproduce the harmony of the land in the individual's interior" (68). The purpose is also to further engender storytelling as rooted in nonhuman nature, and Kingsolver sees such communion with place as a path to ecological understanding:

> Whether we are leaving it or coming into it, it's *here* that matters, it is place. Whether we understand where we are or don't, that is the story: To be *here* or not to be. Storytelling is as old as our need to remember where the water is, where the food grows, where we find our courage for the hunt. It's as persistent as our desire to teach our children how to live in this place that we have known longer than they have. ("Knowing Our Place" 40)

Regardless of how we choose to "be" in place, the narrative impulse endures; the move toward story abides as instinctually as thirst to drink, as parent to pedagogy.

By moving from personal memory of place to a broader discussion of human evolution, Kingsolver articulates this reverence for the embeddedness of story and place as the impetus for environmental engagement. Even if the stories tell of human failure to honor earthly origins, biological inevitabilities will not yield:

> Protecting the land that once provided us with our genesis may turn out to be the only real story there is for us. The land *still* provides our genesis, however we might like to forget that our food comes from dank, muddy earth, that the oxygen in our lungs was recently inside a leaf. ("Knowing Our Place" 39)

Kingsolver's ear for the dialogue of natural rhythms, for the shared oxygen of a breath, reveals a biologist's sensibility. Her descriptions of place are not merely metaphorical. She weds science to human perception and in so doing moves the reader's eye to the "bronze-eyed possibility of lives that are not our own" ("Knowing Our Place" 40). Ultimately, this is how the life sciences teach us what it means to be human. Once we understand the sustenance of our existence, the biological roots of our stories, we can no longer responsibly choose to exist on the margins of our communities.

In her essay "Losing Home," Melissa Holbrook Pierson perceptively observes "home is physical before it can be metaphorical. It is also personal while being collective." Through their narrative mapping of Kingsolver's place, her nonfiction essays in *High Tide in Tucson* and *Small Wonder* astutely enact an epistemology that recognizes these layers of home. If we come to know our localities with these prescriptions in mind, we are moved to act differently not just in how we exist in our own isolated lives, but also how we engage with our local communities. Anthropologists Pamela Stewart and Andrew Strathern argue that field study reveals to ethnographers that "perceptions of and values attached to landscape encode values and fix memories to places that become sites of historical identity," thus making the landscape a certain "codification of history itself" (1). Such processes of value invite us to reconsider the limitations of our cultural prescriptions for these landscapes, limitations that may only be overcome through a rediscovery of the physical over the metaphorical.

At one level, these connections seem intuitive, not in need of uncovering, and yet within an increasingly profit-driven globalization that in its most sordid and ironic form denies relationship, and devalues communal

threads, the seeming simplicity of the story beguiles the listening ear. The values of knowing and dwelling in place that Kingsolver communicates so clearly in *High Tide in Tucson* and *Small Wonder* come to labored fruition in her most recent book *Animal, Vegetable, Miracle: A Year of Food Life*. This study seems to implicitly demonstrate the environmental engagement for which *High Tide in Tucson* and *Small Wonder* have prepared Kingsolver. A memoir narrative created in the company of her family, *Animal, Vegetable, Miracle* documents what it means to know and understand the most vital source of our sustenance—our food. She remarks that this project is about the "adventure of realigning ourselves with our food chain" (6). And yet this journey is steadily understood through the lens of its global importance: "Isn't ignorance of our food sources causing problems as diverse as overdependence on petroleum, and an epidemic of diet-related diseases?" she asks as she inscribes her rationale (*Animal* 9). Attention to the personal, to the local, is the first integral gesture toward a global social consciousness. The resulting text records how one family learns to understand this web by living within the resources of their farm and their local community. In this way, it is a document of bioregional living.

Understood within the context of Kingsolver's earlier nonfiction, *Animal, Vegetable, Miracle* enacts the consequences of a personal biological and emotional investment in place origin. Kingsolver understands the tangibility of this connection when she describes a food culture as a presence that "arises out of a place, a soil, a climate, a history, a temperament, a collective sense of belonging" and as "an affinity between people and the land that feeds them" (17, 20). The collective sense of belonging and the affinity that Kingsolver attributes to a food culture is only possible through a narrative engagement with what the land was and is. This is why the most recent study tells a familial story of agricultural science and culture.

In response to what Kingsolver calls the loss of our "intuitive sense of agricultural basics," the project suggests that without such empathy, our investment in place falters (*Animal* 9). Humans nurture this investment, or at the very least begin to understand its need, through knowledge of food origins and conscious preparation; cooking, as Kingsolver describes it, is "good citizenship" (130). Using the collaborative narratives of her husband and daughters to record food processes, the memoir reminds us of the economies of sustainability, bringing their tactile growth into the most intimate corners of the authors' kitchen.[4] Through form and content, the book reminds us that we learn good citizenship at the most local of unions, in our

families, in our homes, in our towns, in knowing our place as an evolving origin.

At the core of Kingsolver's nonfiction essays is the notion that if unchecked, alienation from our evolutionary biology can lull us into a dangerous and presumptive apathy. In *High Tide in Tucson* and *Small Wonder,* she achieves this through hopeful narratives that use story to connect her own histories to their nonhuman homes, while in *Animal, Vegetable, Miracle* she more consciously invites her local communities into this narrative. In all of her nonfiction, hope lies in the persistent human desire to find a connection to land. Ruminating about the addictive quality of gardening, Kingsolver reflects that it is "probably mixed up with our DNA. Agriculture is the oldest, most continuous livelihood in which humans have engaged . . . the first activity that gave us enough prosperity to stay in one place, form complex social groups, tell our stories" (178). Conventional wisdom teaches us about the value of these stories, about the need to listen to one another, to ask about how we get along in our minds, our families, our communities. And yet what we seem to have forgotten is that the fiber of these stories is bound to our relationship with the land.

Academics are beginning to give new energy to this relationship, in part because of ecological criticism, and in part because our current environmental crisis confronts us with this reality in ways that are more immediate than ever before.[5] This immediacy does not undermine the reality that any polemical crisis affords a choice; we must choose how we will respond to the present story of the land, whether we will act toward union or alienation. This is a long-spun dilemma in a new form; it was the choice of Coleridge's ancient mariner, and now it is ours.

In Virginia Woolf's autobiographical *A Sketch of the Past* she describes a revelatory moment in a St. Ives garden: "I was looking at a plant with a spread of leaves; and it seemed suddenly plain that the flower itself was a part of the earth; that a ring enclosed what was the flower; and that was the real flower; part earth; part flower" (71). Woolf ultimately attributes this moment to her existential and earthly place: "It proves that one's life is not confined to one's body and what one says and does; one is living all the time in relation to certain background rods or conceptions" (73). Is it possible that the contours of a flowerbed, perhaps the most local of life processes we can nurture, could

contain and prescribe such evolutionary meaning? Is that as far as we need to look for our map of how to proceed? Our current environmental crisis is inarguably daunting, and perhaps we do not know for certain if our vegetable gardens or our canvas grocery bags or our community recycling initiatives will give us the time we seek or change the course of our earthly story. But for now, just beyond our windowpane, there is still a seed resting in the moist soil beneath a rainstorm, and if we choose to embrace its scientific promise of dependence, in time, Kingsolver reminds us, it will teach us how to love more than ourselves.

Notes

1. Scholars such as Christopher Manes would argue that such perspective is needed: "It is no exaggeration to say that as a cultural phenomenon, as opposed to a scientific discourse, evolutionary theory has been absorbed by the *scala naturae* and strategically used to justify humanity's domination of nature. Evolution is often represented graphically as a procession of life forms moving left to right, starting with single-celled organisms . . . up to "Man," the apparent zenith of evolution . . ." (23).
2. Sherilyn MacGregor's *Beyond Mothering Earth: Ecological Citizenship and the Politics of Care,* in which she calls for a "project of feminist ecological citizenship," offers an integral discussion of this distinction, moving ecofeminism into "non-essentialist" activism (6).
3. Nicola King argues that "identity, or a sense of self, is constructed by and through narrative," but that "it is not only the *content* of memories, experiences and stories which construct a sense of identity: the concept of the self which is constructed in these narratives is also dependent upon assumptions about the function and process of memory and the kind of access it gives us to the past" (2–3). The assumption that rightfully seems to imbue Kingsolver's writing is that this memory relies on an understanding of place.
4. The economic sustainability of the local food movement earns the attention of prominent environmentalists such as Bill McKibben, who in *Deep Economy* argues that "local economies would demand fewer resources and cause less ecological disruption . . . they would allow us to find a better balance between the individual and the community" (105).
5. Daniela Koleva, a sociologist of culture and oral history, remarks on this phenomenon in the context of her research project "Experienced History," which invoked a life history method to record human experience of historical events in present-day Bulgaria. She writes: "we did not originally aim to include the theme of the environment, or to account for the formation and development of environmental consciousness . . . ," but "the constant reappearance of various aspects of environment in autobiographical narratives without the asking of specific questions is evidence of how deep is our consciousness of our environment" (63).