

ERIKA PERLOFF

Morning Veils, 2014
Pastel on Paper, 12 x 9 in



COURTESY THE ARTIST

EVA SAULITIS

Listening and Seeing With All That I Am

On Being a
Scientist-Poet

Two imaginative channels—the scientific, the artistic—carved their way through me simultaneously when I was in my early twenties, a marine biology graduate student living in a wall tent and following whales in a small boat for four months at a time. My primitive camp sat above a rocky shore on an otherwise uninhabited island in a remote corner of Prince William Sound, Alaska. That part of the sound, with its intricate geography of islands, islets, fjords, bays, and narrow passageways, became my imaginative whetstone, both as a scientist and as a writer. The whales I studied traced the contours of islands as they hunted harbor seals, and I followed in my boat, my field assistant perched on the bow, watching for rocks; I eventually learned that geography by heart. The sound revealed itself slowly in this way, over seasons.

Often thwarted from whale research by weather and the unseaworthiness of my boat, we hiked barefoot through fens and bogs and old growth collecting edible plants, and swam in frigid ponds on dares. The sound is a place of hiddenness, secrets within secrets. The bay where we anchored the boat during storms, for instance, we named Cove of Coves. Such intricacy shelters stories: a cove might contain a raft of sea otters, a shipwreck, a flock of harlequin ducks, a bear carcass, a cabin ruin, boulders shaped like extinct sea cows, or a trio of orcas feeding on a seal, gulls shrieking and diving all around them. The islands, mostly uninhabited now, in the earlier twentieth century bustled with herring salteries, canneries, and fox farms; and before that, indigenous fish camps and villages. The sound now feels haunted by stories of human failure, displacement, and abandonment, the most significant in my lifetime being the story of the *Exxon Valdez* oil spill, twenty-five years ago this March 24.

To be a field biologist conducting long-term research is to have one's imagination shaped not only by one's study animal, but also by a place—the animal's habitat, which is inseparable from its life and its ecology—and by one's perception of that place. I think of Lorine Niedecker's poem "Paean to Place," how the title opens into this epigraph: *And the place/was water*. Mid-poem, she writes: "I grew in green/slide and slant/of shore and shade/Child-time—wade/thru weeds." At the same time as I had to grow up, to buck up to the responsibilities inherent in my field work

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despite my being a complete greenhorn—staying alive, not sinking the boat, not burning down our canvas house with a misplaced candle or gas lantern—it felt very much that I was a child being reborn those years, out of my field work with orcas, and out of the cradle of Prince William Sound’s endlessly rocking, shockingly cold waters, devastations, and incessant rains.

Words on a page were—still are—a spontaneous and necessary response to everything I experienced daily, which came at me as flood, both scientific and sensory—all that didn’t fit onto a data sheet. I was, imaginatively, as an artist and scientist, an infant absorbing much more new sensation and information and questions than I could possibly process without my big black journal and pen, my Coleman lantern, and the long, long twilight of Alaskan midsummer. I had the extraordinary good fortune of sharing those first summers with an Alaskan-born poet, Molly Lou Freeman, who was my field assistant. She filled our hand-built bookshelves with poetry volumes, and filled my mind with her way of seeing and questioning. Once, carving into the carcass of a stinking, decaying dead orca washed up on a brown-bear-infested island, knifing out a skin sample, she asked me, “Eva, what does it mean that we’re having to do this?” The first formal creative essay I wrote arose out of that question—and every essay since, when I think about it.

Field work schooled me in patience and endurance, as days and hours, often rainy, cold ones, passed without finding orcas. As the practice of poetry taught me later, this blankness, this waiting, staring, bored, restless, almost

hypnotic state is an aspect of imagination. It is a prerequisite to science, to poetry, this wild patience out of which something suddenly occurs.

Science in its pure form—the quest to understand the world—is, to me, a beautiful thing and an incredible teacher, and not so different, at its core, from philosophy and art. But isolated from other ways of knowing, it shows its limitations, and in the margins of what science allows one to say or think, I sought, and still seek, a more encompassing language and vision with which to express what I witness in the natural world: an ecological poetic, a poetic ecological.

Says “The Blue River Declaration: An Ethic of the Earth”: “...we are creatures of consciousness, emotion, and imagination, beings through whom the universe has evolved the capacity to celebrate its own beauty and explore its own meaning in the languages of science and story.” The scientific method of generating stories proceeds thus:

- Observation
- Hypothesis (which can be rephrased as a question)
- Experiment (designed to answer the question)
- Data collection
- Data analysis
- Conclusion (an answer to the question, within a degree of uncertainty and significance in larger context)

The writer Doug Chadwick, who studied mountain goats in graduate school, calls science “an organized form of wonder.” The organization of that wonder is governed by strict laws—laws of observation, of thought, of expression. Reading a scientific paper, you will come up against not only specialized language and indecipherable statistical formulation, but also the apparent absence of the human instrument—the observer, the thinker, the writer, the wonderer. Scientific reports and papers must be written in the passive voice. In most journals, “I” and “we” are forbidden, as if by effacing these pronouns, the subjective human being is equally effaced. But of course it’s a ruse.

The observer, no matter how objective, how detached, how well trained, is a being of certain sensory abilities, preconceptions, emotions, hungers, ambitions, anxieties

of influence and culture, rivalries, illnesses, and passionately held notions. We all know this. And yet—those absent pronouns. And yet—that language, foreign to all but a tiny subset of humanity. It is a language built on the altar of detachment, of separation between head and the rest—heart, spirit, soul, body, whatever you want to name it. And there are reasons, of course. All of us need to see the world less as an object for our self-projection and more as it truly is, to honor its otherness and its mystery and our place in it. David Ignatow put it this way: “I should be content/to look at a mountain/for what it is/and not as a comment/on my life.”

But we’re not content. In fact, our discontent, our inability to know a mountain or orca for all it truly is, drives our poetry, our painting, our essaying, our science. Science has taken the practice of stripping to the purely objective to an extreme. It’s what I came up against when I entered that world as a graduate student. Its language felt like scree on my tongue. My mentors in the field, who’ve now been studying orcas in the North Pacific for more than thirty years, biologists I deeply admire, smacked me down again and again, not only for my blurry or underexposed whale identification photographs, but also for my shoddy assumptions, too-quick conclusions—even for my overuse of adjectives. They trained me hard, and it was humbling and even humiliating at times, but there was value in that education, for me as a scientist and for me as a poet. To have “good eyes” in field biology, when out observing orcas, became for me the highest compliment to earn. I learned to see. Not what I wished to see. Not what confirmed my presumptions about the way the world worked. But the shock and awe of the actual, which was and is for me a source of wonder, and terror.

According to the eighteenth-century philosopher Adam Smith, the scientific imagination is set in motion by the elements of “surprise, wonder, and admiration.” But in grad school, I learned nothing of philosophy, of Adam Smith; I never heard the words “surprise,” “wonder,” or “admiration” used in a lecture. Science was an enclosure, fencing out all but the so-called objective real.

Science was the corset in which I seethed and against which my experience of the world bulged and strained its bounds. I was, as the “Blue River Declaration” declares, a creature “...of consciousness, emotion, and imagination,”

stuffed into whalebone stays. And my education in science, as I moved through graduate school, was one of narrowing, tightening, specialization. The corset got smaller, more claustrophobic.

The division I struggled with, the corset I invented and cinched around my science-self, was itself imaginary. The study of poetry and writing has taught me this: There’s no division. As Cyrus Cassells writes in “Down From the Houses of Magic,” “No lack, no lack, but in my human mind—”

No division, no separation, but in our human minds.

The opened imagination precedes any poem, and it precedes any science. It is the beginning. It is also the ending, the imagination scrolling outward from every poem and every science. The opened imagination precedes insight and understanding and vision. A scientist must imagine the possible before the actual can be seen and grasped. At the conclusion of an experiment or paper or poem, there is not a period, but a colon: the next poem, the next experiment, the next question, the next revision.

The same scientists who shrink from the term “imaginative”—associating it with fantasy, anthropomorphism, wishful thinking, fuzzy logic, projection, or inaccuracy—perform imaginative acts routinely. I have seen them. They observe a unique behavior, and a question arises: What does it mean? And late into the night, speculations in the form of stories unspool around the boat cabin in messy strings and tangles. What if? The idea for a new experiment formulated out of one observation, thin air, dark chocolate, rum, and Sleepytime tea. Imagination precedes knowing. And knowing is not static, but informed and furthered by imaginative acts.

My husband, Craig, and I do whale research the old-fashioned way. We are an endangered species, actually. We work off small boats, not NOAA ships. We live in the field for weeks or months at a time, fishing for dinner, anchoring up in coves during storms, searching for whales with underwater microphones called hydrophones that dangle from long cables. We wield binoculars and intuition. When we hear calls on a hydrophone, we attach it to a directional device made out of a cooking wok wrapped in neoprene and attached to an expandable boat hook with hose clamps. We lower the dish off the side of the boat, and I put a tiny speaker to my ear as Craig leans over the boat’s

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Davenport Calm, 2014
Pastel on Board, 11 x 14 in



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side, lowering the dish, slowly turning it this way and that until I shout, “I hear them,” and he thrusts his arm in the direction the dish is pointing, and we start up the engine and go. Sometimes we are lucky and the situation is right with the orcas, and we manage to get a satellite tag onto a fin; and then, if we have cell phone service, we might call a colleague in town who can check the website and give us the tagged animal’s last location. But a lot of the time we have no cell phone service. Orcas being the far-ranging, unpredictable creatures they are, days and days can go by without finding them. And we spend those days imagining where they might be, and how to find them.

In their absence, we imagine ourselves into their realm—how the salmon might be moving, and how the orcas might be responding to those movements. And we imagine ourselves back into the past, combing through memory and computer files of previous years’ encounter data, searching for patterns. We imagine them in the context of observations we made the last time we saw them, and in the context of radio calls reporting whale sightings out of our range. We imagine their response to environmental change, bad weather, or the weekend influx of charter boats.

So often our imaginations fail us. And this is the beauty and frustration of studying such animals. It is essentially impossible to imagine the world in which they exist. E.O. Wilson said, “Every creature lives in its own sensory world,” and that is true of every human and every nonhuman; and in the case of an aquatic creature, it is true in an even more striking way. In the case of the orcas I study, how does one comprehend the sensory world of a sonic creature, who receives sound through oil-filled canals in the lower jaw, who reads the environment as echoes? How does one comprehend a creature whose vision is acute only at close range, because ocean water in summer is murky with plankton and light fails to penetrate beyond the surface layers, but whose acoustic abilities are enhanced because sound travels much faster in water than in air? But we try to imagine. It takes a lifetime to comprehend a little of the life of an animal that spends 90 percent of its time below the surface. Without imagination in a case like this, without the willingness to see in our minds what we can’t see with our eyes, without risking being utterly wrong, and without inventing ways to test our theories, we would be

left timing dives, counting breaths and breaches and fluke slaps, and trying to parse meaning from these cold hard numbers. Which would be like trying to parse the meaning of a poem only by considering its meter.

The best scientists I know are people who spend their entire lives trying to imagine themselves into the animal imagination. Like any writer or artist who desires to see clearly, to search for truth, to get past the known and received, they work hard to strip what gets in the way. We think of the scientist as detached, impassive. And yet, as I said earlier, it’s a ruse. In the field, at the computer, the scientist adopts the persona of the objective observer, “the small figure in the landscape who bears witness,” to paraphrase the poet Barbara Guest. That imaginative device of the speaker in a poem that creates distance and perspective and allows us to see freshly—is she that much different from the poet who adopts the mind-set of the scientist to collect the most accurate data possible?

Wonder is the seed of any imaginative act. To wonder, to muse, to be flattened and dazed by, to be awed, stupefied, stumped, befuddled, mystified, to question our own eyes. The imagination is innate to our species. To walk down the dusty road in summer with a ten-year-old girl who is carrying one of those hard briefcases with snaps, and which houses her plant collection, is to be in the realm of both scientific and artistic wonder and method. My ten-year-old nephew Quinn and his best friend Eric, last fall, in a rain- and wind-storm, decided to build a trail down their steep forested bluff to the water. They discovered, among other things, a hidden stream. My sister followed them with a bucket of beach gravel for their trail building, and Eric stopped, turned to her, and said, “This has been the best day of my life—in terms of discovery.” Another boy I know, who is growing up in a Chugachmiut native village in Prince William Sound, shot his first deer at the age of nine. He knows the habits of river otters and martens because he traps them with his father. At home, he meticulously draws prehistoric creatures, and creates detailed sketches of river otters, martens, deer, moths, whales, and insects, using a biology textbook for models. There is no division in his mind. He can simultaneously have wonder and reverence for animals and the impulse to kill and eat them. The same imagination he brings to his knowledge of the natural world he brings to the blank page, to the

story-making self. To wonder and to watch. Data collection and awe. To hunt and to love. Observation and imagination. Science and art. No division but in the human mind.

And then it is divided, the way we butcher a cow. Split into parts. Classrooms. Periods. Texts. And then, at least for me, a life of putting the self, the whole self, back together again. Ceasing to believe I have to choose only one way of knowing at the exclusion of others. Ceasing to believe that writing poetry and prose and speaking out politically lessen my credibility as a scientist.

The rage for order is the passion of the scientist as well as the poet, who seeks some kind of form to contain language, image, thought. The scientist seeks patterns, order—and the animal continually breaks patterns, creates disorder. The poem, as well, pushes hard against whatever form we use. I come up against my limits time and again—of seeing, of language, of form, of imagination.

Together with poetry, the indigenous perspective of orcas in Alaska shows me ways to break out of given forms of understanding. It forces me to imagine my study animal from the perspective of a culture that believed humans and animals spoke the same language, the one poet W.S. Merwin refers to when he writes: “I want to tell what the forests/were like//I will have to speak/in a forgotten language.” The one Alaskan poet Peggy Shumaker refers to when she writes: “In a language lost to us/God is singing.” The humans and orcas that once spoke that common language could transform into one another and back, zipping in and out of their skins.

Wendell Berry writes that “To create is to involve oneself as fully, as consciously and imaginatively, as possible in the creation, to be immersed in the world.” That is the work of both science and art. I know now that it’s entirely possible to honor both the means and methods of science and the means and methods of art, and to live a life exploring the ecotone of their overlap. It’s entirely possible for me as a scientist to do solid research work, and to advocate politically for the animals I study and for their habitat. To research them, and to love them, and to imagine myself into them, and to grieve when they are injured. For me, a fragile hope resides within these intersections—the hope of healing the rift that divides our culture and threatens our planet.

At the end of each field season, my mentor, the late

great walrus biologist Bud Fay, would send me a stern letter, which would take many days to arrive by float plane at a fish hatchery ten miles from my field camp. “Eva, it’s high time for you to get back to Fairbanks. It’s time to get down to brass tacks.” Enough wandering the sound, gathering data, and filling journals with sentences and yellow Rite in the Rain field books with notes.

Time to figure out what it all might mean.

But to this day it’s hard for me to leave that place where I am whole. Where “I am listening with all I am,” in the words of poet Christian Wiman. *That’s* the brass tacks. That’s the stance of the poet, the scientist, how they are the same. There is the gathering. There is the wondering, the pondering. There is the weaving our findings into a larger story that stretches out before us and after us. There is the admiration for other life forms, what we learn about them, and what remains hidden, unknowable.

When I write a poem, I am listening with all I am. When I observe a pod of orcas, I am listening and looking with all I am. If I am doing my work, I am zipping in and out of my own skin, my own mind, to accomplish that total listening.

Eva Saulitis is the author of *Leaving Resurrection* (essays), *Into Great Silence* (memoir, forthcoming from Beacon Press), and *Many Ways to Say It* (poetry). A new poetry collection, *Prayer in Wind*, is forthcoming in 2015. She teaches creative writing in the low-residency MFA program at the University of Alaska Anchorage.

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Between Tides, 2014
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