

My current book project, *Holding on to Proteus; or, Toward a Poetics of Gaia*, explores the protean semiosis infusing not only language, but also Gaia. This talk pulls from the second chapter, which places Jody Gladding's *Translations from Bark Beetle* in the context of biosemiotics. Before looking at Gladding's work, however, I establish a couple concepts I see as crucial to my overall project, concepts I establish in the books' introduction and first chapter: 1) semiosis precedes consciousness—that is, to echo Charles Peirce and biosemiotician Wendy Wheeler, there are ways of knowing but not knowing that you know, a kind of “abductive reasoning,” “the strange—obscure and dark—semiotic process whereby signs are read, and interpreted, often without ever necessarily having reached consciousness at all”¹; and 2) this semiosis has its own agency—apart from human consciousness. Concerning both concepts, we see an agency of semiosis in language conflated with the agency of Gaia, in Ronald Johnson's “earthearthearth” poem.² Here the language fuses, and through the fusing, through the squeezing of the square, the semiosis explodes almost exponentially into an array of words and phrases: ear, hear, hear the earth, hearth, art, earth art, and so forth. On the next page of *ARK*, Johnson provides a diagram of mitosis and an ode to the cell!—“prosper / O / cell // through there where the forest is thickest.”³ The happy coincidence that fusing the word “earth” together yields such a semiotic abundance is beyond uncanny. The familiar word suddenly becomes strange and alien as if Johnson simply responded to the driving energy of language to ever move *toward* semiosis, not unlike the driving “towardness” of Gaia.

A preface on biosemiotics is also in order before looking at Gladding's work. I start with the observation that other writers have articulated the biosphere-as-semiosphere concept prior to the formal emergence of the term biosemiotics. I think of Gary Snyder's thoughts on the way that human language has its roots in the semiotics of the earth:

Without conscious device we constantly reach into the vast word-hoards in the depths of the wild unconscious. We cannot as individuals or even as a species take credit for this power. It came from someplace else: from the way clouds divide and mingle, . . . from the way the many flowerlets of a composite blossom divide and redivide, from the gleaming calligraphy of the ancient riverbeds, . . . from the wind in the pine needles, from the chuckles of grouse.⁴

And there are other individuals who intuited how human semiosis had to have emerged from the biological processes preceding the human.

That said, the “biosemiotic project” is an interdisciplinary venture, a few decades in the making, grounded in the premise that “*all* life—from the cell all the way up—is characterized by communication, or semiosis,” and it “places humans back in nature as part of the richly communicative global web teeming with meanings.”⁵ For Wheeler and other biosemioticians, the “biosphere is also the semiosphere.”⁶

Jesper Hoffmeyer, a biologist and a philosopher, helped coalesce the field and gave initial impetus to biosemiotics. He puts it this way: “The biosemiotic idea implies that life on Earth manifests itself in a global and evolutionary *semiosphere*, a sphere of sign processes and elements of meaning that constitute a frame of understanding within which biology must work.”⁷ Hoffmeyer addresses the unexamined bias that cells grow like robots, getting a precise script from the DNA. In Hoffmeyer’s view, DNA is passive, and not at all animate. The real work gets done by the cell’s membranes that use DNA, as well as their context, to figure out what to **become**:

Living cells, through their membranes, use DNA to construct the organism, not vice versa. It is the active functioning of these membranes as well as the membrane-connected proteins that direct life’s activity, not the passive and inanimate DNA. It is, in other words, in the semiotic functioning of the cellular membranes that we shall

seek what can be called life's *agency*, its inherent future-directedness, its survival project.⁸

When exploring the membranes within membranes of the animal body, Hoffmeyer emphasizes that the DNA “cannot ‘know’ where in the organism any given constituent cell is located”—that kind of knowledge can only be obtained through the “communicated surfaces” of a cell and the “small feelers called *filopodia* that stretch out from the cell.”⁹

And the amount of surfaces whereat the semiotic processes take place boggle the mind. Due to the body's fractal make up, Hoffmeyer estimates that a human body has “perhaps as much as thirty square kilometers of membrane structure.” The surfaces teem with “biosemiotic activity whereby molecular messages are exchanged in order to bring the biochemical functions on the inside and the outside of these interior membranes into accordance.” He sees skin to be a “meta-membrane” made up of the “very same interface principle” as that of the membranes of a cell.¹⁰ But, to foreshadow, we forget, or at least I forget, that something as tiny as a bark beetle *also* has its own vastness of fractal membranes. It too, on a different scale, is a super-organism, teeming with biosemiotic activity in its own cells as well as in the coexisting swarm of microbial activity of its own gut.

Part of Wheeler's argument is that the semiosis that makes human culture so rich—and I think of the protean dynamism of Gloria Anzaldúa's *Borderlands / La Frontera*, Melville's *Moby-Dick*, Cummings' life's work, jazz, postmodern art, Gladdings' project—“already happened at a biologically prior stage.” “Just as the ‘tree of life,’” she continues, “is also found in other natural systems of bifurcation (plants; lungs; blood supplies; river deltas, etc.), so we should not be surprised to find that the elaborated system of semiosis discovered in human cultural evolution is also found, in simpler forms, at every stage of life.”¹¹ Wheeler's project is large in scope as she wants to “trace the ‘habituation’ of semiosis in the history of the *cosmos*.”¹² Not the just the animal body. Not just

in a plant. Not even just on planet earth. Rather, she sees semiosis pervading the material universe.
[go to earth; aside about now starting the talk]

Since 2004, I have routinely visited the mountains near and around Lake Granby just outside of Rocky Mountain National Park. I've witnessed the yearly progression of the spread of the Mountain Pine Beetle, from the sawdust-sap oozed out of their bored holes, to their galleries, to the blue-stain caused by the fungus that follows the beetle (and which actually kills the tree), to the slow fading of a green mountainside into a swath of rusty needles. No fire tore through this mountainside, though, and I saw the rust also fade, this time into a gray. Still no fire. After nearly a decade, a few young Lodgepole Pine trees have grown, but moreover, the almost immortal Aspen have spread their groves, turning the mountainside fairly green again. All this from the deck of my wife's family cabin that overlooks Lake Granby and the mountains cradling it.

During the summers from 2006-2010, I also worked as an arborist in the Front Range cities of Colorado. We received monthly updates from Colorado State University's forestry department as to how to respond to the beetle epidemic as the beetles made their way from the mountains down into the trees of the Urban ecosystem where we did our work.

All this to say, Jody Gladding's *Translations from Bark Beetle* mesmerized me right from the title and book cover.¹³ I read it, cover to cover, and then integrated it into my courses as soon as possible. It is a marvelous book to teach, as students get the profundity of the Latin of *translate*, which points toward a *carrying across*. Gladding carries the language of bark beetle from beneath the bark of the tree, across to a rubbing, across into human language. She carries a poem written on an egg which exists in its own materiality, over into a photographed image, over into online spaces, over into her book, and then carries the poem in another *translation* onto another page that exhibits just text. She hears a raven call, and carries that over onto the printed page, and so much more.

However, upon my first reading, I doubted the project. I didn't understand how her work could be so quiet regarding the devastation ushered in by the beetle. Nowhere does she villainize the beetle. Nowhere does she explicitly lament the swaths of trees devastated by the beetle "invasions." Nowhere does she express explicitly angst over the implications of the beetle's flourishing in the Boreal Forests. Re-reading, though reveals two explicit places where she expresses angst: 1) in **one poem** integrates the violence of rape into the overall project of the book, and, at the poem's end, gives us several iterations of questions (How do we address this violence, how do we dress the wound with gauze, how do we dress the violated body) questions that resonate with how do we *address* anthropogenic climate change; and 2) she includes a **poem that**, through its understatement, points toward a grappling with loss and the implications of the beetles' proliferation as a result of global warming.¹⁴ This poem, "**Habitat**," she writes on an icicle.¹⁵ The **image**, though, shows the cloth into which the icicle melted. One can see what looks like orange ink on the cloth. The absence of ice points toward the melting of the habitats at both poles of the **earth**. True, the reader must fill in the backstory, not unlike Hemmingway's legendary story "For Sale. Baby Shoes. Never Worn." The backstory of "Habitat" includes the peril of today's changing ecosystems as Gaia responds to global warming.¹⁶

But Gladding's project is not to villainize the beetle, nor, aside from these two poems lament the destruction; rather, Gladding witnesses, observes, records, and translates what she sees as the language of bark beetle written beneath the bark of a tree, celebrating that semiosis.

Dissenters immediately object. The seemingly mindless **grooves** do not constitute a language. The bark beetles do not look at the grooves in any sort of semiotic way. If anything a woodpecker might see the grooves in the context of semiosis as the grooves point toward the present absence of food.

However, in an interview, Gladding provides insight into *how* these grooves *can* be understood as a language worth translating. She sees the act of grooving-making to be the way the bark beetles “make poems.” “My feeling,” she says, “is that they are love poems. Like many of our poems, they speak of longing.” She continues:

It takes many bark beetles, developing through many stages of their lives, to complete a bark beetle poem. Often they are working parallel to one another, making lines that never cross, though they can sense one another’s vibrations through the wood.¹⁷

At the last ASLE conference, Jonathan Skinner shared work on *vibrational poetics*, and since that moment, I have seen the concept emerge time and time again, from the little bug gnawing her way out of the table at the end of Walden, to the mat-making endeavors of Queequeg and Ishmael, to Whitman’s *only the lull I like, the hum of your valvéd voice*, to the somatic energy of the early spirituals transmuting into all the vibrations of Jazz, and, of course, to the vibrations of the rubbings Gladding made of the bark beetle language. My work on *zoo-poetics* gravitated to the what George Kennedy sees as the rhetorical energy buoying up every gesture, gesticulation, and vocalization in the semiosis shared within and between animal (and maybe plant!) species.¹⁸ “Stop this day and night with me,” Whitman admonished, “and you will discover the origin of all poems.”¹⁹

That origin seems inextricably bound up with vibrational poesis, and, at least for this reader, lends a significant amount of consequential weight to Gladdings’ translations.

Though the **grooves** are not part of the beetle’s semiosis, the vibrations caused by gnawing through the wood are. They respond to each other’s vibrations, seeing those vibrations as having semiotic implications. And if we think about semiosis as taking place at the membrane level, these beetles participate in an active awareness and interpretation of what those membranes of the outer surface of their bodies feel. We cannot pretend to articulate the substance of the “knowing” of the

beetle, but, to echo Pierce and Wheeler, an abductive reasoning is at work. The beetles respond to the vibrations of another beetle, and “know” that another beetle is gnawing on either side, and they don’t cross paths.

The grooves, then, become the mark, the “glyph” as Gladding suggests, left over from the semiotically rich process of traveling *toward*.

As the first poem of the book, “Toward” establishes the meaning Gladding found as she translated this language.²⁰ I am reminded of Derrida’s “animalist perception” in language,²¹ felt in every preposition, that presses *toward* its object, reaching for it, hungry for it, at times ambushing it: so much depends upon. . . .

The beetle activity resonates with the movement *toward*, as does any poet’s process of *poiesis*. In the interview, Jen Bervin asks “Can you walk me through your process, from finding the poem, to making the rubbing, to identifying forms”—however, Gladding responds,

May I walk you through the bark beetle’s process instead?

In summer, an adult beetle flies in search of the particular kind of tree that serves as its host. It chews a hole through the bark and creates a small chamber in the wood for mating. After mating, the male leaves and the female chews a main tunnel, depositing eggs at notches all along it. The eggs hatch into larvae that chew their way from the notches, making tunnels that get wider as they grow. They overwinter at the end of these tunnels. In spring they form pupae, then hatch into adult beetles that bore holes straight through the bark and fly off to repeat the cycle.²²

The beetle, then, lives out a continual process of moving toward, toward the tree, toward mating, toward laying eggs, and toward an Ariel-like breaking-free from within the tree.

“Toward” raises questions as to what counts as a language, what counts as a preposition, what is part of speech, and what remains separate from speech. Do we have room, conceptually, to

expand our notion of language in order to recognize and appreciate the semiosis at work among bark beetles? No doubt about it, the grooves have an aesthetic quality. How do we reconcile the aesthetics of the beetle's grooves with the sheer destruction they cause?—and how the destruction is yet another *marking* on the earth that further affirms the Anthropocene and the anthropogenesis of global warming, where drought-stricken trees lack the reserves of sap to fight off the beetle?

I don't think biosemiotics can resolve all of these questions, but it can help. And I am not yet comfortable with my response to these questions, but I'll forge ahead nonetheless. As mentioned, biosemiotics is a point of entry into the Poetics of Gaia, and biosemiotics provides the nomenclature and perspective to see how the biosphere is a semiosphere teeming with “swarm intelligence”—a swarm intelligence that necessitates and sustains a poiesis, a dialectic, of destruction and creation. The Permian-triassic extinction wiped out 95% of all plants and animals . . . and the dinosaurs evolved out of the 5% that remained. Such events point toward the resiliency of Gaia—a resiliency that is inextricably bound up with semiosis, or so I suggest. As Gladding says in the interview, the “relationship between beauty and destruction is fairly complicated.”²³ The language of the beetle gives us a glimpse into a semiosis that flourishes amidst a destruction, but the very fact that the beetle flourishes is why Gaia has sustained several extinction events. The glyphs point toward a vibrational poiesis that will always move *toward* . . . *toward* that next moment of flourishing even as it ushers in collapse.

I close with an anecdote. While at the American Literature Association conference in Boston, I had the chance to spend a few hours in one of Harvard's arboretums. I stumbled upon one of my most beloved of all trees: **the Weeping European Beech**. For those not aware of this species, it epitomizes a dialectic of robust and rigorous growth of a massive trunk that aspires skyward, but the branches reach out as cascading vines that descend, being most at home when they grow back into the ground only to rise up again. To sit amidst the canopy of most trees, one must

climb. With the Weeping European Beech, you only need to walk inside as the branches create a domelike structure 50 feet in diameter. Once inside, you can easily scurry up and along the think vine-like branches and into any number of places along the trunk, so much so, that this particular tree had been carved into by numerous people. As a former arborist/tree-climber, I cringe at the aggressive destruction. So much of a tree's vitality depends upon the Phloem just beneath the bark of the tree—that is, the part of the tree that moves energy from the leaves to the rest of the tree! These human glyphs disrupt that flow. And yet, in the context of Gladding's poem "Toward," the carvings struck me with a profound resemblance to the language of bark beetle. Here, etched in the tree, were innumerable traces of human couplings, ever moving *toward*, not unlike the beetle. And like the beetle, these humans etched their toward-ness in the tree itself. This person plus that person. Addition signs. Hearts. The very iambic throb of Gaia. Knives making a similar vibrational hum as that of the beetle's jaws. Humans, like the beetle, bring destruction. I am not fully sure how to reconcile the dialectic between destruction and creation, because, as Morton points toward, today's losses are their own Hyperobjects, "massively distributed in space and time."²⁴ How does one reconcile a toward-ness that instigates a geo-trauma that has ushered in the age of the Anthropocene? Of course, the difference between bark beetle and human is that we are aware of the ethical dimension of our *toward-ness*. In this time of mass extinction and ecological crisis, perhaps our best response is to enter into the process of *poiesis* not only in the realm of language, but also in our communities made up of humans, plants, animals, and matter, and to channel a slice of Gaia's resiliency, that sheer abundance of semiotic energy all wrapped up in the word *toward*, which has got to be its own Hyperobject in and of itself. Perhaps, though, the semiotic energy that drives Gaia's resiliency is yet another iteration of a pharmakon, something that's both poison and cure, something that ever brings us back to the nexus of ode and elegy.

- Derrida, Jacques. *The Animal That Therefore I Am*. Edited by Marie-Louise Mallet. Translated by David Wills. New York: Fordham UP, 2008.
- Gary Snyder. *The Gary Snyder Reader: Prose, Poetry, and Translations, 1952-1998*. Washington, DC: Counterpoint, 1999.
- Gladding, Jody. *Translations from Bark Beetle*. Minneapolis: Milkweed Editions, 2014.
- Gladding, Jody, and Jen Bervin. "Three Dimensions: An Interview," February 1, 2017. <https://www.poetryfoundation.org/features/articles/detail/70136>.
- Hoffmeyer, Jesper. *Biosemiotics: An Examination into the Signs of Life and the Life of Signs*. Edited by Donald Favareau. Translated by Jesper Hoffmeyer and Donald Favareau. Scranton: University of Scranton Press, 2008.
- Johnson, Ronald. *ARK*. Edited by Peter O'Leary. Chicago: Flood Editions, 2013.
- Kennedy, George A. "A Hoot in the Dark: The Evolution of General Rhetoric." *Philosophy and Rhetoric* 25, no. 1 (1992): 1–21.
- Moe, Aaron. "Toward Zoopoetics: Rethinking Whitman's 'Original Energy.'" *Walt Whitman Quarterly Review* 31, no. 1 (2013): 1–17.
- . *Zoopoetics: Animals and the Making of Poetry*. Lanham: Lexington Books, 2014.
- Morton, Timothy. *Hyperobjects: Philosophy and Ecology after the End of the World*. Minnesota: University of Minnesota Press, 2013.
- Wheeler, Wendy. "The Biosemiotic Turn: Abduction, Or, the Nature of Creative Reason in Nature and Culture." In *Ecocritical Theory: New European Approaches*, edited by Axel Goodbody and Catherine E. Rigby, 270–82. Under the Sign of Nature. Charlottesville: University of Virginia Press, 2011.
- . *The Whole Creature: Complexity, Biosemiotics, and the Evolution of Culture*. London: Lawrence & Wishart, 2009.
- Whitman, Walt. *Leaves of Grass in the Walt Whitman Archive*. Lincoln: Center for Digital Research in the Humanities, University of Nebraska, 1995.

¹ Wendy Wheeler, "The Biosemiotic Turn: Abduction, Or, the Nature of Creative Reason in Nature and Culture," in *Ecocritical Theory: New European Approaches*, ed. Axel Goodbody and Catherine E. Rigby, Under the Sign of Nature (Charlottesville: University of Virginia Press, 2011), 270–71.

² Ronald Johnson, *ARK*, ed. Peter O'Leary (Chicago: Flood Editions, 2013), 67.

³ *Ibid.*, 68.

⁴ Gary Snyder, *The Gary Snyder Reader: Prose, Poetry, and Translations, 1952-1998* (Washington, DC: Counterpoint, 1999), 177.

⁵ Wheeler, "Biosemiotic Turn," 270.

⁶ *Ibid.*, 272.

⁷ Jesper Hoffmeyer, *Biosemiotics: An Examination into the Signs of Life and the Life of Signs*, ed. Donald Favareau, trans. Jesper Hoffmeyer and Donald Favareau (Scranton: University of Scranton Press, 2008), 5.

⁸ *Ibid.*, 32.

⁹ *Ibid.*, 30.

¹⁰ *Ibid.*, 27.

¹¹ Wendy Wheeler, *The Whole Creature: Complexity, Biosemiotics, and the Evolution of Culture* (London: Lawrence & Wishart, 2009), 123, 126.

¹² *Ibid.*, 123.

¹³ Jody Gladding, *Translations from Bark Beetle* (Minneapolis: Milkweed Editions, 2014).

¹⁴ *Ibid.*, 46, 66.

¹⁵ *Ibid.*, 77.

¹⁶ When I revise this talk, I think I will need to also talk about how the series of tree images and poems also could be seen as laments for the fallen/falling trees and the collapsing ecosystems. Perhaps the best way to see it is that she *tells all the truth but at a slant*—to echo Dickinson and Camille Dungy’s “Tell It Slant: How To Write a Wise Poem,” *Poetry Foundation*, 10 June 2014, Accessed 10 June 2017.

¹⁷ Jody Gladding and Jen Bervin, “Three Dimensions: An Interview,” February 1, 2017, <https://www.poetryfoundation.org/features/articles/detail/70136>.

¹⁸ Aaron Moe, *Zoopoetics: Animals and the Making of Poetry* (Lanham: Lexington Books, 2014), 8; see also Aaron Moe, “Toward Zoopoetics: Rethinking Whitman’s ‘Original Energy,’” *Walt Whitman Quarterly Review* 31, no. 1 (2013): 1–17; see also George A Kennedy, “A Hoot in the Dark: The Evolution of General Rhetoric,” *Philosophy and Rhetoric* 25, no. 1 (1992): 1–21.

¹⁹ Walt Whitman, *Leaves of Grass in the Walt Whitman Archive* (Lincoln: Center for Digital Research in the Humanities, University of Nebraska, 1995).

²⁰ Gladding, *Translations from Bark Beetle*, 5.

²¹ Jacques Derrida, *The Animal That Therefore I Am*, ed. Marie-Louise Mallet, trans. David Wills (New York: Fordham UP, 2008), 92.

²² Gladding and Bervin, “Three Dimensions: An Interview.”

²³ Gladding and Bervin, “Three Dimensions: An Interview.”

²⁴ Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (Minnesota: University of Minnesota Press, 2013), 1.