



**GREENING THE MAPLE:
CANADIAN ECOCRITICISM IN CONTEXT**
edited by Ella Soper and Nicholas Bradley

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SECTION 6

**IN FULL BLOOM:
NEW DIRECTIONS IN CANADIAN THEORY**

CHAPTER 22

Poetics of the Semiosphere: Pataphysics, Biosemiotics, and Imaginary Solutions for Water (2011)

*Adam Dickinson*¹

In the small Ontario village of Port Carling, some seventeen miles west of Bracebridge, our party located a large pyramidal shaped edifice of some 22 feet in width, some 12 or so feet deep and at its apex reaching a height of nearly 24 feet. The structure is located on a shallow incline and rests between two modern structural domiciles... Modern mythobastardization has nurtured the common belief that the structure is a Victorian water tower erected to supply the early settlement with a plentiful water supply from the proxigious lakes. – Kurt Wursthagen, “Piccu Carlu: The Muskoka-Maya Connexion”

INTRODUCTION: READING THE WATER TOWER

The citizens of the village of Port Carling (incorporated in 1896), located in the rugged Canadian Shield region of Muskoka, Ontario, have imagined the history of the municipal water supply in their community in a generally unremarkable way. A series of research papers published in 1981, however, tell a different and surprising story. Conducted with the assistance of the Department of Cartographical Complication and prepared in part for the Institute of Onto-genetics, these research papers propose and respond to the possibility that the Port Carling water tower is not a water tower at all, but an ancient example of proto-Mayan architecture.² What is more, “the pyramid itself is a three-dimensional linguistic unit within a macrosyntax.”³ The purpose of the water tower is semiotic, according to the authors: “In Muskoka lies the evidence of a writing system contradictory in its own force relations, a writing in which both form and content seem subservient to the material base.”⁴ The material base, in this case, is the water and rock both in and around the tower, which leads the researchers to a startling conclusion: the people of Port Carling “are drinking their reading and writing.”⁵

This re-imagining of Port Carling’s water supply was part of a special issue of the journal *Open Letter*, which featured a snapshot of Canadian pataphysical⁶ poets, including Steve McCaffery, Christopher Dewdney, and bpNichol along with their various imagined institutes and personae. A subsequent millennial edition of the journal (1997) testifies to the enduring interest in pataphysics among younger Canadian poets like Darren Wershler and Christian Bök. Pataphysics is “the science of imaginary solutions,” or the study of exceptions – a pseudoscience that traces its roots back to the proto-avant-garde French writer, Alfred Jarry.⁷ Pataphysical poets employ methodological constraints in experimental poetic composition in order to parody reductionist scientific analysis and to complicate questions of perspective and meaning. Examples include catalogues of exceptions, useless reference books, constraint-based writing, and “ready-made” found texts. As Craig Dworkin points out, “such seemingly meaningless procedures can yield unexpected information;

the imaginary solution is a perfectly concrete answer to a question no one had thought to ask.”⁸

In what follows, I propose an alternative conception of the relationship between experimental poetic and theoretical scientific epistemologies in order to argue that pataphysics is central to an emerging postmodern ecocriticism because it complicates and combines both the question of signification and the question of the environment. Pataphysical poetics push social constructionism to the extreme, parodying it not as a means of undermining it, but of expressing the contingencies and interconnections in the overlapping worlds of signification that constitute cultural and biological environments.

Just as R. W. Wursthagen, Richard Truhlar, and others focussed their attention on the pataphysical re-imagination of water in the bucolic, pastoral setting of Ontario’s “Cottage Country,” I want to focus my attention on two contemporary Canadian poets explicitly engaged with shifted urban perceptions of water and experimental recreations of the pastoral genre. While not commonly identified as pataphysical poets, and only more recently as ecopoets,⁹ both Erin Mouré in *Sheep’s Vigil by a Fervent Person* and Lisa Robertson in *Occasional Work and Seven Walks from the Office for Soft Architecture* imagine scientific research into the urban environment and its membranes of alternative civic memory and natural history. Through the invention of an imagined poetic persona (a “heteronym” like Fernando Pessoa’s creation of Alberto Caeiro), Mouré’s *Sheep’s Vigil by a Fervent Person* does more than simply translate the exuberant pastoral landscapes of Pessoa/Caeiro’s *O Guardador de Rebanhos*¹⁰ from Portuguese to English; her book-length poem also translates Toronto’s buried river system into an imagined landscape where the flow and function of water in the city become irrepressibly significant. Beginning in 1884, Taddle Creek, Garrison Creek, and a number of other smaller streams in Toronto were systematically buried by the city to obscure the problem of inadequate waste management associated with increasing urbanization. The creeks had become contaminated by sewage, so the growing city suppressed them, integrating them into the subterranean sewer system.¹¹ Mouré uncovers the rivers,

imagining an alternative solution to the problem of water in the city. Her pastoral, the result of various compositional constraints that merge the landscape and language of Toronto with Pessoa's original text, enacts a species of poetry that imagines itself as science, a text that turns to the empirical methodologies of the natural historian for imaginary solutions to the impediments of realist epistemologies and the expected fidelities of conventional translation practice. Moreover, Mouré's text represents a pataphysical pastoral that translates or "deterritorializes" genre, identity, and environment in ways suggestive of the unorthodox scientific theories of one of the founders of modern ecology, Jakob von Uexküll (1864–1944), and his emphasis on the distinct *Umwelt* (self-world, or subjective universe) of living things. By "deterritorialization," I mean, in the terms of Gilles Deleuze and Félix Guattari, the opening up of systematically fixed relations to new forms of organization, the possibility inherent within a territory or system for transformation. Through such deterritorializations, pataphysics ultimately puts into question what we might think of as realism, or scientifically sanctioned realism. *Sheep's Vigil for a Fervent Person* "is a miniature Toronto," Mouré claims in *My Beloved Wager*.¹² She describes her work as a "translation" of Caieiro's text and it represents for her "a history of water, for Toronto ... is a city of water, built on running water. It buries water but water continues to define the city."¹³ In this way, Mouré's pataphysical pastoral exposes the invisible, alternate reality of the buried waterways as a study of the exceptions that inhabit the city and deterritorialize it from the inside out.

By employing unconventional analytical methodologies in site reports and "propositions,"¹⁴ Robertson's *Occasional Work and Seven Walks from the Office for Soft Architecture* is similarly concerned with water and fluid dynamics in the recent history of the city of Vancouver – a city, as Robertson notes in her introduction, dissolving "in the fluid called money."¹⁵ The lyrical essays, which double as extended prose poems, were mostly written to accompany various art exhibitions; however, they also reflect Robertson's concern with the changing "urban texture" of Vancouver between the developments associated with Expo '86 and the acquisition of the rights to host the 2010 Winter Olympics. Accompanied

by the “Seven Walks” in the book – which are excursionist wanderings into the multiple surfaces of the landscape with the help of a Virgilian guide – the texts re-imagine various attempts to define Vancouver’s public spaces in idealized pastoral terms, paying particular attention to the contested definitions associated with the proliferation of corporately sponsored public fountains. Like Mouré’s use of heteronyms in *Sheep’s Vigil*, Robertson translates her authorial identity into the persona of the Office for Soft Architecture in order to, as she points out in her *PhyllyTalks* correspondence with McCaffery, “escape the author called ‘Lisa Robertson’” and pursue multiple points of contact with the surfaces of the city.¹⁶ The Office is a pataphysical creation, an imagined institute, which, similar to other Canadian pataphysical collectives such as the Toronto Research Group and the Institute for Linguistic Onto-genetics, aims to “explore the poetics of anomaly, on the assumption that literary research must be more experimental than instrumental.”¹⁷ Robertson’s Office opposes instrumentality by way of its explicit embrace of paradox and impediments in its research practices.

While the shifts in cultural *Umwelt* that result from the deterritorialized pastoral can be read, like Mouré’s text, in the terms of Uexküll’s unorthodox science, I propose to read Robertson’s concern with surfaces and membranes of civic memory in the context of biosemiotics and its extension of Uexküll’s *Umwelt* theory. Biosemiotics, an emerging field in biology, takes issue with traditional scientific reductionism by asserting that many forms of meaningful communication have been ignored in the scientific materialist discussion of the biosphere. Biosemiotics proposes the primacy of the “semiosphere” over the biosphere; it is concerned with living systems as nested sets of surfaces. The surface is where multiple signalling processes act on the cell membrane according to contextual recognition. Robertson’s pataphysical text – as well as Mouré’s, for that matter – is similarly concerned with the surface of “reality” as it is constituted by the contextual recognitions of cultural conventions, especially the rhetoric and practice of empirical observation and description. Proceeding as a self-described natural historian, the imagined Office for Soft Architecture reveals that expanded and oppositional fields of

signification are necessary for understanding and being responsible to the myriad of intercommunicating surfaces at work in the ecology of urban relationships.

Semiosis is the basis of biological life for biosemiotics; it is also the basis of ethical cultural life in the context of environmentalist politics. We often fail to care about things that do not signify for us; we need to expand and complicate our worlds of signification. The pataphysics of Robertson and Mouré engage the environment, not according to the objective realism of scientific materialism, but rather as a complex set of semiotic relationships where diverse forms of signification and alternative realities interact. We need to be alive to different *Umwelten*, to the different ways that water, for example, signifies to humans and non-humans, so that, like the citizens of Port Carling, we may reckon with natural history as cultural history and the unexpected ways in which we drink our reading and our writing.

CONTEXT: REALISM, PATAPHYSICS, AND THE UNORTHODOX SCIENCE OF UEXKÜLL

In a recent issue of *Interdisciplinary Studies in Literature and Environment*, Glenn Adelson and John Elder combine the science of ecology with the practice of literary criticism in an examination of Robert Frost's poetry. In their conclusion, the authors caution that one should pay attention to the poem and its referential dimension as opposed to the potential "tendentious controversies" of literary theory.¹⁸ Emphasis on the referential has long been a focus of ecocriticism. Lawrence Buell in *The Environmental Imagination* famously calls for a revival of realist aesthetics as a means of being accountable to what contemporary literary theory suppresses.¹⁹ In his preface to *The Greening of Literary Scholarship*, Steven Rosendale identifies the "mimetic concepts of literature's representation of nature that currently dominate ecocritical thought."²⁰ This referential turn can be seen productively as an expression of an ecocritical commitment to environmentalist politics, an "earth-centered" approach, as

Cheryll Glotfelty calls it, to bring attention to very real and pressing material concerns.²¹ Unfortunately, such views have facilitated a rejection of postmodernist modes of thinking and poststructuralist methods of reading in favour of what Serpil Oppermann calls a “naive version of the mimetic tradition,” which, ultimately, has had an impoverishing effect on ecocritical interpretive strategies.²²

An important point that has escaped significant attention, however, is the fact that the emphasis on realism in ecocriticism has increasingly manifested itself as an appeal to science and the resources of scientific analysis in interpreting texts. On the one hand, scientific principles are unearthed explicitly as evidence of environmental literacy, such as Adelson’s and Elder’s claims that the poem “Spring Pools” reveals “Frost’s understanding of the perennial nature of flowers, water, and tree buds.”²³ On the other hand, from a more methodological perspective, the loose definitions of ecocritical practice have inspired calls for a tighter integration with the scientific method.²⁴ As an extension of this increasingly systematic rigour, one of the principal aims of the ecocritic, according to Camilo Gomides, is “to gauge how well a work of art represents the physical world, with a bias toward works that display verisimilitude.”²⁵ Thus, in this case, scientific methodology is readily associated with and emerges out of a realist aesthetic.

The appeal to science in the emphasis on realism in ecocriticism finds one of its chief proponents in Glen Love and his work *Practical Ecocriticism*. Love proposes that postmodern practices and poststructural methods must be overcome in order to foster an environmental writing that accurately reflects the biological world, and by extension the cultural world, made available by scientific understanding. The pastoral, in particular, offers an opportunity for a scientifically informed literature with real consequences for environmentalist politics. A pastoral sufficiently grounded in the actual natural processes of the biological sciences has the potential “to be more valid and meaningful than those stories ‘too far removed’ from the hard actualities beneath social constructions.”²⁶

Love’s notion of a scientifically informed pastoral is an example of what Terry Gifford calls the “post-pastoral,” with its self-conscious

avoidance of the sentimental attributes that plague the traditional pastoral, including retreats to rural Arcadian fantasies. It is to this traditional definition (a discourse of retreat and idealization) that I refer throughout this essay when I talk about pastoral conventions; however, I do so with Gifford's qualification in mind that the pastoral is a historically complicated and contested term.²⁷ The texts I examine below do not fit into the category of the post-pastoral, as defined by Gifford, because they do not emphasize the requisite realist aesthetics.²⁸ Rather, as I will explain, Mouré and Robertson play with and ironize pastoral customs in order to direct attention to the semiotic surfaces of the city (both culturally and biologically) and the resultant shifts in perceptible realities that these require.

If the ecological pastoral for Love is best seen as science expressed through poetry, what do we make of poetry that imagines itself as science? What do we make of texts that turn to the strict methodologies of science for imagined, "unreal" ends? As an example of such an enterprise – one that I think has been overlooked by ecocritical preferences for literature that reflects the literal truths of science – I turn to the pseudoscience of "pataphysics." Pataphysics is the science of imaginary solutions, the study of exceptions; it examines how contingencies and anomalies that conventional scientific procedures cast as extrinsic to any system are in fact intrinsic. Pataphysics, as Jarry points out, "will examine the laws governing exceptions, and will explain the universe supplementary to this one," which is a universe that one might envision – and that perhaps one *should* envision – in place of the established one.²⁹ Pataphysics supersedes metaphysics; it interrupts it in ways potentially productive for environmental ethics. As Bök argues: "pataphysics studies exceptions in order to make the weaker case the stronger."³⁰ This practice is consistent with ecocritical interests in realigning the terms of value when it comes to the environment and marginalized creatures, landscapes, and social commitments.

Pataphysics cannot easily be dismissed as anti-scientific postmodern play. It is thoroughly engaged with the methodologies and consequences of scientific thinking. Moreover, pataphysical texts are not

simply mimetic renderings of scientific insight in literary form; rather, they constitute “translations” or “deterritorializations” of scientific ideas and practices into alternate epistemological possibilities. In other words, science is deterritorialized as poetry. In *A Thousand Plateaus*, Deleuze and Guattari define deterritorialization as the “cutting edge” of an assemblage.³¹ By this they mean the creative potential of an assemblage to be exposed to new forms of organization.³² Science and poetry, as disciplines, as assemblages of methodological strategies, are brought together in pataphysics, not as a totalized unity, not as the literal expression of scientific principles in poetic form (as some ecocritics would have it), but as an articulatory relationship that transforms the ostensible “territories” of what constitutes science and poetry in the first place. Pataphysics effects a translation not unlike Mouré’s poem or Robertson’s natural history of surfaces; the original text is there (just as it is in terms of the traditional disciplinary distinctions between science and poetry), but the conventional realities of genre and content are altered, the perspective is shifted.

Translations and deterritorializations of this sort, and their potential to produce new types of inquiry, are evident in the pataphysical experiments of poets like Christopher Dewdney and Christian Bök. For example, in “Parasite Maintenance,” Dewdney uses diagrams and disciplinary rhetoric to expose the assemblages of neuroscience, language acquisition, and parasitology to a new form of organization. The result is an emergent analysis of poetic innovation and its capacity to counter the semiotically restrictive effects on human hosts of the “living and evolving intelligence” of language.³³ Similarly, Bök’s *Crystallography* explores the conception and manifestation of clarity (as it pertains to writing and thinking) in the distinct but overlapping phenomena of poetry and crystals. Employing a methodological constraint that intentionally “misreads the language of poetics through the conceits of geology” and crystalline forms, the text reveals that the structure of snow, for example, provides a way to rethink the semiotic capacities of lyric poetry.³⁴ In an accompanying note to a diagram of cryometric forms, Bök writes: “Semiotic saturation increases from a solid state of monosemy to a fluid state of polysemy

until meaning etherealizes itself in the region of cloud formation.”³⁵ As these examples from Bök and Dewdney illustrate, pataphysical experiments engage science in order to imagine new kinds of deterritorialized analysis that become neither conventionally scientific nor conventionally poetic in their procedures. Other pataphysical projects, such as Kenneth Goldsmith’s perceptually constraint-based methodologies in *Soliloquy* and *Fidget* among others and Robert Kocik’s exploration of intersections between prosody and pathology in *Rhrurbarb*, illuminate the expanded and paradoxical fields of signification necessary to understanding the interconnecting surfaces at work in the negotiation between subjective interiors and ostensibly objective, environmental exteriors.³⁶

While Robertson mentions only briefly that her pastoral poetics are concerned with an urban “pataphysical Utopia,”³⁷ her imaginary research office is clearly engaged with the rhetoric and practice of scientific analysis. She deterritorializes the descriptive modes of the natural historian into alternate, paratactic, antimetaphysical forms of empirical observation and expression: “The work of the SA [Soft Architect] paradoxically recompiles the metaphysics of surface, performing horizontal research which greets shreds of fibre, pigment flakes, the bleaching of light, proofs of lint, ink, spore, liquid and pixilation, the strange, frail, leaky cloths and sketchings and gestures which we are.”³⁸ In doing so, the Office for Soft Architecture, as I will demonstrate, exposes the exceptional surfaces and marginalized membranes of the urban environment, drawing attention to the double-sided nature of these surfaces, the combined influences of biological and cultural effects.

In its engagement with questions of perception and signification, pataphysics shares similar points of emphasis with ecological science, particularly the unorthodox, exceptional methodologies of the early ecologist, Uexküll.³⁹ As an alternative to conventional scientific interest in objectively determinable niches and mechanical material processes, Uexküll proposes in his writings that the emphasis in ecology should be placed on the subjective interaction of species with their environments. He writes in “The Theory of Meaning” that in studying biology, we “always begin with a subject that finds itself in its *Umwelt* (subjective

universe) and we examine its harmonious relationships with individual objects that have appeared as meaning-carriers to the subject.”⁴⁰ The stem of a blooming meadow-flower, for example, is an environment of multiple interpretations: the cow sees it as food, the ant sees it as a path, the cicada-larva sees it as a home, and a girl gathering flowers sees it as part of her bouquet.⁴¹ The meadow-flower has no objective meaning as such; it signifies variously according to the *Umwelten* of the creatures who use it. In pataphysical fashion, Uexküll, writing contemporaneously with the modernist avant-garde, imagines how the world looks according to moths, bats, crabs, dogs, spiders, and ticks to name but a few. As Giorgio Agamben remarks in *The Open*, Uexküll’s strange descriptions constitute “a high point of modern antihumanism and should be read next to *Ubu roi*,” Jarry’s famous pataphysical creation.⁴²

All of these descriptions and illustrations constitute pataphysical elaborations of imagined systems of meaning, where “the constancy of subjects is substantiated far better than the constancy of objects.”⁴³ Uexküll’s *Umwelt* theory undermines the primacy of scientific objectivity just as pataphysics challenges the generalities of science in favour of particulars.⁴⁴ Compositional constraints imposed on the generation of pataphysical texts enact often subtle shifts in what signifies as meaningful. For Uexküll, the limitations imposed by the sensory capacities of different organisms similarly shift the nature and number of perceivable phenomena – the thickness of a spider’s web, for example, is too thin to be perceived by a fly’s eye.⁴⁵ Instead of avoiding the question of meaning and its subjective implications, which have been anathema to traditional scientific methodologies, Uexküll underscores that “meaning is the guiding star that biology must follow.”⁴⁶ The exceptions, contingencies, and anomalies of any particular creature’s perspective become, like pataphysical constraints, intrinsic to any system of world-making. Moreover, these fundamental and particular differences in the nature of signification inform the larger “contrapuntal melody” that characterizes the relationship between different *Umwelten* in an ecosystem.⁴⁷ Organisms are constrained by the specific signifying environments of the creatures that they depend on (the spider depends on what is meaningful for the fly).

For example, Uexküll notes that “The spider’s web is certainly formed in a ‘fly-like’ manner, because the spider is ‘fly-like’.... To express it more accurately, the spider’s ‘fly-likeness’ comes about when its body structure has adopted certain themes from the fly’s melody.”⁴⁸ Counterpoint for Uexküll is the structural theme that links *Umwelten* with each other: the eye must be sun-like, the bee must be flower-like, the leaf must be rain-like, even the coffee cup must be coffee-like for meaningful relationships to be possible.⁴⁹ The ecologist becomes a musician for Uexküll, or by extension a pataphysician, concerned with the “exceptional singularity,” as Bök would say, of what counts as meaningful in the environment of tones and melodies.⁵⁰

MOURÉ: TRANSLATING THE BURIED CREEKS

Mouré’s translation *Sheep’s Vigil by a Fervent Person* is an example of a pataphysical pastoral that deterritorializes the environment of Toronto in order to enact a shift in cultural *Umwelten* in the ecological terms of Uexküll. The original text, Alberto Caeiro’s *O Guardador de Rebanhos* (*The Keeper of Sheep*), is itself a product of a kind of translation or deterritorialization: Caeiro was in fact an invented persona of the Portuguese poet Fernando Pessoa (who had created a series of “heteronyms,” as he called them, of various writing personalities, each with separate biographies and aesthetics). It was not until his death in 1935 that these writers were discovered to have been the same person. Mouré translated the book-length poem while living in Toronto during the summer of 2000. She recounts in her preface to *Sheep’s Vigil* that she realized “Pessoa had entered Toronto, living a pastoral life in Toronto’s not-quite-vanished original topographies.”⁵¹ She began noticing the buried creeks that flowed under and into the city’s infrastructure (as she listened at manhole covers and storm drains), and the creeks in turn found their way into her pastoral translation.

While she never directly discusses her work as pataphysical, Mouré’s translation is an example of pataphysics, I would propose, in several

different ways. On the one hand, Pessoa/Caeiro's work itself resists metaphysics, or, we might say, supersedes metaphysics. The speaker of the poem, a shepherd, proclaims at length the folly of metaphysical perspectives through extended meditations on observation and the virtues of empiricism:

There's enough metaphysics in just going about life with your eyes open.

...

Just open your eyes and see the sun!
If you do, you can't think anymore about anything
because sunlight is fab, more than all the thoughts
of philosophers and poets lumped together.
Sunlight doesn't know what it does
And, as such, doesn't goof up, and is ordinary and good.⁵²

Mouré's shepherd is an imagined pseudo-scientist, an empiricist zealously dedicated to perceiving the environment in an unorthodox, unmediated way: "I believe in the world and in marigolds, / Because I see them. But I don't think on it / For thinking can't understand..."⁵³ Additionally, Mouré's translational methodology serves as a critique of the normative, domesticating "science" of translation (with its expectations for the fluent reproduction and domestication of texts), or as Mouré calls it: "the translation practice most common in English that claims to 'represent' the author, while eliding the translator and the translator's sitedness."⁵⁴ Mouré re-imagines an exceptional pataphysical practice where translation deterritorializes into translational, a "performative gesture altering space, altering the original, and altering [her] own voice and capacity in English."⁵⁵

The constraints Mouré imposed as part of her methodology are, as she describes, "preposterous" and "excessive":⁵⁶

I worked within a framework of my own readerly response
that pulled into the translation not just the semantic level of

the Caeiro text but also the chance or hazardous appearance of words provoked in me by the sound of Portuguese.... I noted two more guiding principles. First, the idiom in the target language had to be resolutely Canadian but also a little old-fashioned, a little quaint from a twenty-first-century perspective (as Caeiro's Portuguese, it is said, was a little curious and simple as well). Second, the excessive or exorbitant gesture was permitted.⁵⁷

By responding to the poem through the abundant pursuit of "lines of flight" supplementary to its anti-metaphysical universe, Mouré's text illustrates the accidents and anomalies intrinsic to the system of translation. Moreover, Toronto is a city of water, but water is ignored, or bracketed as an inconvenience, according to the engineering science of urban construction. In Mouré's pataphysical poem, conversely, water and its poetic parapaxis – all the other kinds of accidental expressions of water in the city (be they people, cats, flowers, things flowing downhill, by chance, by accident) – are intrinsic to the organization of the city, despite being rendered as exterior to the city by urban planners. In various sections of the poem, the rivers have become subjects of idle conversations on buses (the Humber flows down from up north), the speaker points out, but few pay any further attention.⁵⁸ The speaker, by contrast, stoops to listen at manhole covers over Taddle Creek, while "Duped men" pass by honking. She "want[s] to show them / The small buds just now in leaf alongside rivers, / and they want to get fast to Bathurst and St. Clair."⁵⁹ The point of the poem is to shift the way in which water signifies in the urban environment, deterritorialize its quaint "idle" and "idyll" associations (in the context of the classical pastoral eclogue):

What I'd give to be the creek under the road at No Frills
So that people could sense water on the way to the Laundromat

What I'd give to be the scrub poplars at the parking lot of
No Frills

For they've just sky above and water below them

Well, and an ugly parking lot ...⁶⁰

Here the idealized landscape, the equivalent of the pastoral retreat, is not one of Arcadian dimensions, but one where conventional apprehensions are disrupted, where water does not fit into any narrative or arrangement beyond its own flow, "concentrating," as the speaker describes in a later section, "without plans / On flourishing and coursing."⁶¹ The *Umwelt* of the speaker is such that water matters in ways unperceived by the downtown businessman, who "senses there's a creek there ... but he'll never find it..."⁶² *Sheep's Vigil* presents an imaginary solution to the problem of water in the city, in this case uncontrolled waterways in the form of creeks and rivers that interfere with Toronto's orderly sense of urban and suburban development. The city has translated water in one way and Mouré has translated it in another, changing the variables of perspective in doing so. The outside becomes the inside in this text; it is the ostensibly foreign which illuminates the local as Pessoa's poems are credited with teaching Mouré to attend to the buried creeks in a city she eventually came to inhabit "with great joy."⁶³ The importance of the foreign to the local (a pataphysical predicament) extends to Mouré's sense of literature and translation more generally: to write about place and home requires exposure to other literatures and cultures. Translation serves to "Locate us as foreigners to what it translates, necessary foreigners, and – at the same time – as inhabitants of our own language, our own place, and our own opened possibilities for literature."⁶⁴

By imagining herself as the creek and as the poplars, Mouré's speaker enacts, not only the change in perspective that a shift in *Umwelt* requires, but also a change in identity, which is manifested literally in the translation of her authorial identity from Erin Mouré to Eirin Moure (the Galician spelling of her name). However, translation is more than an authorial identity; it is geographic, as Mouré declares, in its capacity to "surprise, and locate us."⁶⁵ By subjecting her pastoral translation to the pataphysical constraints of her "sitedness" in the environment

of Toronto, the poem imagines an *Umwelt* where the particularities of water, as a kind of anarchic “tactical” movement through the city (in the terms of Michel de Certeau) become the carriers of significance, rather than the totalizing “strategic” burials and effacements enacted by the projects of urban development and commercial interest.⁶⁶ The power of Mouré’s pataphysical pastoral does not lie in its ability to reflect the ecological insights of science in the form of literary realism or according to the procedural fidelities associated with translational fluency. Rather, Mouré’s shepherd is an eccentric natural scientist concerned with imaginary solutions, with deterritorializing and amplifying cultural *Umwelten* to the abundant realities beyond the ones we think we know.

ROBERTSON: FOUNTAINS, MEMBRANES, AND BIOSEMIOTICS

If diverting rivers into the city sewer system is one way of re-imagining water, public fountains are another. In light of Uexküll’s insights about perceptual worlds, Robertson’s *Occasional Work and Seven Walks from the Office for Soft Architecture* can be read as a collection of pataphysical texts engaged with the signifying surfaces (social, historical, rhetorical, and biological) of the urban environment of Vancouver – including the history of its public fountains. In “The Fountain Transcript,” a text accompanied by altered postcards depicting Vancouver with water fountains emerging from public buildings and, in one example, water shooting from the mouth of a polar bear at the zoo, the Office announces that the economies of its methodologies (which involve, among other things, bodily intuitions, chance, and friendship) will find their “antithesis in a fountain somewhere.”⁶⁷ Concerned with imaginary solutions and with refashioning the rhetoric of systematic empirical research, the Office seeks to “sketch the terrain of a future analysis” where “inquiry will erupt from its own methodological grid like syllables from our teeth and lips. We expect to be deliriously misinterpreted. We fountain, always astonished by the political physiology of laughter.”⁶⁸ Fountains are explored in

this text as research that fails to come to conclusions, as monuments that fail to be momentous. The city's fountains are industrial constructions that are "hidden among corporations ... relevant only as cheerful prosthetics to the atmosphere of the logo."⁶⁹ However, given Vancouver's lack of large, "bombastic" public fountains, the small, modest, personable settings of the fountains in the financial district of the city seem contrary to the grandiose aspirations of the corporations. Public fountains in Vancouver, therefore, exceed the confines of their civic definition – they are defined by misinterpretation, both in construction and reception: "They are corporate fantasies. Yet stylistically these fountains' nostalgia is not for omniscience but for unfashionable minor happiness; in this sense they flood the grid with its countertext."⁷⁰ The countertext of minor happiness and highly localized significance is what the Office explores by presenting a small inventory of fountains (including Vancouver's infamous leaky condominiums) that underscores the degree to which the economies of systematic research and corporate logic find their antithesis in water resistant to being packaged in commercially advantageous ways. By misinterpreting the city's imagination of water – through actual use at the local, personal, intimate level – the Office encounters fountains as exceptional anti-metaphysical interruptions of the civic grid. These "delirious misinterpretations," as Robertson calls them, recur throughout the book as fountains in their own right, as assertions of alternative *Umwelten*, as imagined solutions to various attempts at totalizing or homogenizing the environments of the city.

Like Mouré's *Sheep Vigil*, Robertson's *Occasional Work* is a pataphysical translation of the pastoral genre, as evidenced by its concern with idealized landscapes and idealized civic rhetoric. It extends her engagement with the "Virgilian corpus" in works such as *Debbie: An Epic* (1997), *XEclogue* (2nd ed., 1999), and *The Weather* (2001), which, as Stephen Collis notes, also explore "the ornamental and emblematic as pure surface."⁷¹ In her research into the palimpsestic nature of urban surfaces in *Occasional Work*, Robertson studies the history of a waterfront park in East Vancouver that has been constantly reinterpreted by the city. Having once been the proposed original site of Vancouver, it

has become variously the location for a hotel, a swimming pool, a Japanese internment camp, a factory, and then parkland. In her *PhyllyTalks* correspondence, Robertson points out that in New Brighton Park “This overlay – old world fantasy, leisure and industrial, racial and natural constructions – defines for me the pastoral. This is the pataphysical Utopia here in Vancouver. I want to represent its politics, as they appear fragmented in the landscape.”⁷² Just as Mouré imagines an eccentric empiricist listening at manhole covers for buried streams, Robertson imagines a research institute that uncovers the natural history of an urban space by attending to the translations of water, built structures, and capital. Mouré’s shepherd is Robertson’s excursionist, walking through possible worlds of the urban pastoral with a Virgilian guide, asserting the multiple surfaces and skins that emerge in alternative and expanded forms of attention.

Robertson’s text can be read, like Mouré’s, as an example of a deterritorialized pastoral that attends to the translations of environment, capital, genre, and identity in order to enact shifts in cultural *Umwelten*. For example, in “Fourth Walk,” while wandering through a decaying industrial district of Vancouver, the speaker at first aestheticizes her desire to recognize her suddenly unfamiliar city as a traditional struggle of “the heart.” This nostalgic retreat into the utopian ideals of love for a recognizable homeland is a pastoral convention. However, Robertson’s excursionist begins to want “the heart to mean something other than this interminable roman metronome of failed eros and placation.”⁷³ Her solution is to reframe her fields of signification, to deterritorialize her observational practice in order

... to notice the economies that could not appear in money: vast aluminum light sliding over the sea-like lake; the stack of disposable portable buildings labeled Women and Men; decayed orchards gone oblique between parking lots and the complex grainy scent that pervaded the street. As we walked we presented one another with looted images, tying them with great delicacy to our mortal memories and hopes. It was

as if at that hour we became strands of attention that spoke.
In this way we tethered our separate mortalities to a single
mutable surface.⁷⁴

The restricted economy of commerce, with its systematic logic and prescribed privilege, has determined both the city and these pastoral protocols of rhetoric and observation – Robertson explores at length in *XEclogue* the degree to which pastoral poetics have historically depended on patriarchy and class.⁷⁵ This entrenched *Umwelt* is interrupted in “Fourth Walk” by an alternate perspective, by an imaginary empiricism of “strange rules” that looks at and gives voice to things otherwise effaced by the metaphysics of capital.

As a consequence of Robertson’s particular concern for signifying surfaces and membranes, I propose to push this investigation of *Umwelten* a bit further and argue that the pataphysics of *Occasional Work* can be read in the context of the emerging field of biosemiotics, which is a theoretical extension of Uexküll’s *Umwelt* theory. Despite my focus on Robertson here, I wish to emphasize that *Sheep’s Vigil* is equally relevant to this discussion, given Mouré’s focus on the city as an enormously complex memory system in which different membranes (pedestrians, cats, buried rivers) have different capacities to remember and signify. Biosemiotics is the study of life processes as a function of semiosis. It is “an isolated discipline,” as biosemioticians themselves admit, “that lies at the outskirts of science, somewhere between biology and linguistics.”⁷⁶ This exceptional, pataphysical status makes biosemiotics an explicit challenge to dualist thinking that divides science from art and rational objectivity from subjective embodied meaning. Biosemiotics has emerged out of the cybernetic and ethological writings of Uexküll, the anthropological theories of Gregory Bateson, and the inflections of C. S. Peirce’s triadic model of the sign in the work of Thomas Sebeok. The discipline has been further developed by Jesper Hoffmeyer’s argument for the primacy of the “semiosphere” (or the world of signs and signification) over the biosphere, as well as the primacy of the sign over the molecule. Wendy Wheeler argues in “Figures in a Landscape,” that culture is “a *natural* evolution in

a world always already ‘perfused with signs.’”⁷⁷ She goes on to argue in *The Whole Creature* that biosemiotics is part of an intellectual continuum that involves poets and poetry. The centrality of intuitions and hunches in scientific discovery, as expressions of biosemiotic processes, reveal, according to Wheeler, that “Poetry is the model of scientific discovery.”⁷⁸

At the heart of biosemiotic theory is a critique of reductive notions of communication at the cellular level in molecular biology and at the intra- and interspecies level in zoology. Established biological conceptions of communication depict materials transported biochemically in order to trigger a switch. Additionally, on a larger scale, animal behaviour is frequently explained objectively according to genetic “hard wiring.” Traditional biology has ignored the importance of interpretive activity in favour of genetic causal explanations. Biosemiotics, on the other hand, envisions life as interconnected webs of communication and nests of surfaces where organisms and organic procedures within organisms (indeed, within cultural systems as a whole) respond to information through particular interpretations. The animal or cell behaves the way that it does not simply because of genes but also because of semiotic activities. Take, for example, the bird that pretends to have a broken wing in order to lure a predator away from its nest. Whether or not the predator falsely interprets this sign, as the bird hopes, is not a law-like certainty. As Hoffmeyer points out, “clearly the act of pretending in this case has to be well executed.”⁷⁹ For biosemiotics, interpretive membranes such as the skin are as much in control of life as DNA. A human body, Hoffmeyer notes, is made up of about thirty square kilometres of membrane structure.⁸⁰ It makes more sense, he argues, to locate human personhood not in the brain but in the skin, which is the fundamental locus of sensory interpretation.⁸¹

While Darwinian evolutionary theory is very important to biosemioticians, the emphasis on genes and molecular explanation in neo-Darwinism does not adequately account for the affective forces of lived reality. Hoffmeyer argues in *Signs of Meaning in the Universe* that from a biosemiotic perspective the guiding principle of life is semiosis: “The most pronounced feature of organic evolution is not the creation

of a multiplicity of amazing morphological structures, but the general expansion of ‘semiotic freedom,’ that is to say the increase in richness or ‘depth’ of meaning that can be communicated: From pheromones to birdsong and from antibodies to Japanese ceremonies of welcome.”⁸² The primacy of interpretation in biosemiotics means that subjectivity emerges in all life activities. All organisms, as Hoffmeyer points out, and Uexküll before him, are immersed in ecological relationships in ways that require them to learn signs in order to survive and to interact with their surroundings (*Umwelt*). Similarly, pataphysics, as experimentally employed in texts like Mouré’s and Robertson’s, is concerned in biosemiotic fashion with the surface of “reality” as it is constituted by the contextual recognitions of cultural conventions. Pataphysics enacts a concern for the “aboutness” of communication inasmuch as the application of constraints (through compositional methodologies) to particular systems interrupts the metaphysical assumptions that serve to obscure the different ways in which things matter, the different “abouts” to which they are relevant. In other words, pataphysics underscores the unavoidable articulatory mix between the subjective and the objective.

Bök argues that pataphysics “expresses on behalf of poetry what the metaphysics of science represses in itself: its own basis in signs.”⁸³ As that which deconstructs the metaphysics of scientific reductionism, pataphysics has much in common with biosemiotics in terms of its emphasis on the primacy of interpretative frames in determining reality and in its emphasis on increasing the complexity of what qualifies as significant. Hoffmeyer points out that “imagination is the creative exploitation of error.”⁸⁴ Mistakes are necessary for “all true development in this world.”⁸⁵ Pataphysics, as the science of imaginary solutions, as the science of exceptions, can similarly be seen as the creative exploitation of error. Ultimately, by controlling compositional variables to determine unusual frames of significance, pataphysics underscores that we are creatures of the semiosphere. This, I propose, is the ethical dimension that makes it most relevant to ecocriticism. Pataphysics complicates any cultural *Umwelt* by revealing it to be a nest of surfaces where different creatures and landscapes signify in diverse and potentially neglected ways. The

perceptual shifts enacted by pataphysical poetics are complicit with, as Hoffmeyer points out in the context of ethics, “our existential need to empathize with other *Umwelt* builders in this weird and wonderful world.”⁸⁶

Robertson’s pataphysics in *Occasional Work* is not simply a metaphorical rendering of alternative scientific principles; rather, the engagement with membranes, as critical sites of interpretation in her work, literally and distinctly re-imagines the form of biosemiotic concern with signification. Whereas biosemiotics focusses on the poetics of biological membranes, Robertson’s pataphysics – a science in its own right given its concern with analytical rhetoric and empirical data in site reports – researches the poetics of cultural membranes. For example, in “How to Colour,” the Office investigates colour as a highly affective cultural membrane that influences communication between subjects and environments: “It is as if colour hails us. When it does so our entire surface is concentric. We are soothed refreshed or repelled.... Colour, like a hormone, acts across, embarrasses, seduces.”⁸⁷ Just as biosemiotics seeks to correct the overemphasis on genes at the expense of membranes and environment, Robertson points out that “Soft Architecture will reverse the wrongheaded story of structural deepness” and attend instead to surfaces like colour, cloth, and scaffolding, to name but a few of the focusses for various essays in the book.⁸⁸

The Office examines *Rubus armeniacus*, a swift-growing blackberry species native to southwest Asia that Environment Canada has classified as a “minor invasive alien,” as it spreads over built surfaces in southwestern British Columbia, “transforming chain link and barbed wire to undulant green fruiting walls.”⁸⁹ Its capacity to cover and alter the surface appearance and function of buildings inspires the Office to see the plant as “an exemplary political decoration, a nutritious ornament that clandestinely modifies infrastructural morphology. Here affect invades the centre.... *Rubus* shows us how to invent.”⁹⁰ In pataphysical fashion, the margin becomes the centre, the surface influences the identity – the result is deterritorialized architectural practice. As Wheeler notes in “Figures in a Landscape,” biosemiotics assures us that culture and nature

cannot be discretely separated: “Creativity in culture and language reiterates creativity in nature.”⁹¹ The Office lauds “the limitless modification of the skin” that is “different from modernization”⁹²; it revels in the deterritorialized notions of contemporary built surfaces that the plant creates.⁹³

The walks in *Occasional Work* attend not only to the membranes of natural and cultural history but also to the relational surface of interpretation itself. This is consistent with biosemiotic interest in the ontological reality of relations and the emphasis on relationships (rather than individual species) as carriers of causality.⁹⁴ In Robertson’s walks, “My guide,” who serves to accompany and direct the attention of the first-person narrator, functions as a “Virgilish paramour.”⁹⁵ Just as the Roman poet Virgil translated the pastoral into Latin by way of his *Eclogues*, and just as Dante wrote Virgil into the *Divine Comedy* as a guide, Robertson translates her own pastoral forebear into a guide “who was like a text” through which she reads her environment.⁹⁶ In the “Sixth Walk,” she confesses a desire to know her guide, which is a wish to know the mechanism of interpretation through which her ambulatory encounters with the city have been framed. The guide, a pastoral architect, is literally a skin, a membrane that helps determine significance for the narrator. To pay attention to the guide is to attend to the significance of surfaces as the site, in biosemiotic terms, of multiple signalling processes acting according to contextual recognition. Self-conscious reflection on the guide makes the pastoral a “lexemic battleground” of rhetorical surfaces for Robertson, a term she borrows from McCaffery.⁹⁷ Her pataphysical poetics emphasize the agency of these surfaces, their capacity for re-signification, for generating innovative interpretations that foreground the marginal and the exceptional, whether it be decaying orchards or gendered experiences.

By expanding *Umwelten*, Robertson’s poetics enact communicative complexity. Her text reports on the different layers of interpretation that have been at work in the historically renegotiated membranes of coastal parkland, for example, or public fountains, or invasive blackberry species, or scaffolding. These interpretations are affected by both “genetic”

factors, or, in other words, deep structural determinants including official urban planning and zoning restrictions, and “epigenetic” factors,⁹⁸ or environmental contingencies exterior to certified civic plans, such as the ways in which people, animals, and plants have used and altered space regardless of its official designation. Robertson presents her research into the systematic genetic codes of governmentally determined memory and framed civic history, including historical plaques and the placement of memorial fountains. She also reports on the epigenetic environmental factors that have determined how the life of the area takes place, and how it is remembered differently through graffiti, unintended plant species, and the irrepressible signification of water in nearby leaky condos. Her research into these sites is deeply concerned with the “aboutness” of information in the semiosphere of the city. Ubiquitous urban scaffolding, for example, “works as a filter of exchange and inscription that localizes and differentiates the huge vibratory currents swathing the earth.”⁹⁹ Robertson’s as well as Mouré’s pataphysical experiments enact an expansion of potential worlds of signification, not in order to assume a more comprehensive or total way of knowing, but to be responsible to the paradoxes, gaps, and multiplicities that necessarily constitute any nature of things or spaces.

By exploring the implications for ecocriticism of poetry that imagines itself as science (pataphysics) and science that imagines itself as poetry (biosemiotics – inasmuch as biosemiotics can be said to be concerned with the semiotic resources of poetry), my intention is to argue for a renovated, semiotically concerned conception of environmental ethics in the humanities. The shifts in perspective that biosemiotics requires of traditional scientific thinking are relevant to the shifts in thinking that pataphysics requires of ecocritical interpretations of contemporary poetry. I want to be sensitive, however, to differences between these disciplines even as I argue for points of connection. Biosemioticians such as Hoffmeyer have worked against popular models that apply linguistic metaphors to genetic systems like DNA, arguing that these models privilege “digital” codes (alphabets and words) over “analogue” codes (body language and contingent bodily forms).¹⁰⁰ Hoffmeyer

stresses, rather, that code-duality is fundamental to semiotic survival: digital codes (genetics) as well as analogue codes (embodied interactions with the physical environment) are both integrally involved with life processes.¹⁰¹ Therefore, I want to make it clear that cells do not simply “read” their environment in the way that humans digitally read texts. Biosemiotics as well as pataphysics require that we think of reading and writing in more broad semiotic terms.¹⁰² Ultimately, I want to argue for a paratactic relationship between biosemiotics and pataphysics. What the former explores in the “scientific” realm, the latter explores in the “humanities” or “cultural” realm (to the degree that these distinctions are even meaningful – in fact, both disciplines deconstruct distinctions between subject and object, culture and environment). Nonetheless, let us think of biosemiotics and pataphysics, in the terms of Uexküll, as contrapuntal forms of research with different starting positions, different environments of signification.

CONCLUSION: DRINKING OUR READING AND WRITING

In a discussion of community arts in the context of water management and pollution in Toronto, Liz Forsberg and Georgia Ydreos issue a distinctly pataphysical call for imagined sculptures that would use collected rainwater or snow melt to “erupt into polyphonic fountains.”¹⁰³ Similarly, art projects like “Human River” (a parade of people draped in shiny fabric in order to re-embodiment Toronto’s many buried creeks) enact semiotic expansions of cultural *Umwelten*, akin to those explored in *Sheep’s Vigil* and *Occasional Work*, by allowing urban citizens to “savour sensory shifts while disrupting our usual grid-like paths through the city.”¹⁰⁴ The aim of such real and imagined works, with their emphasis on the multifaceted ways water signifies environmentally and culturally, is evocative of Astrida Neimanis’s assertion that any politics of water management and water rights must proceed from the idea that “we are both materially and semiotically entwined with other bodies of water in a gestating,

differentiating and interpermeating relation.”¹⁰⁵ Neimanis asks: “if we acknowledge that we are neither materially nor semiotically discrete from one another, even as we maintain our difference – what sort of social and political responses to other watery bodies are demanded of us?”¹⁰⁶ To accept a biosemiotic perspective on relationships between the physical and ideological surfaces of place is to understand our semiotic connection to creatures and materials beyond the ostensible limitations of our skin. Mouré’s speaker quite literally espouses a vision of Toronto’s water as semiotically connected to multiple times and places. Similarly, Robertson’s Office for Soft Architecture examines the manifold signifying surfaces of water in the city as a means of critiquing the confinement of water to industrial decoration.¹⁰⁷ In addition, Robertson’s Soft Architecture might be said to characterize the speculative environmentalist urban designs of Mitchell Joachim.¹⁰⁸ His proposals range “from impact absorbing ‘soft cars’ and towers clad in compacted trash to moveable dwellings and ‘meat houses.’”¹⁰⁹ These pataphysical creations enact biosemiotic concerns with biological and cultural membranes by shifting how food, energy, waste, and water signify in order to foster “a breathing interconnected metabolic urbanism.”¹¹⁰

Timothy Morton argues that the idea of nature is caught between competing substantialist and essentialist interpretations. Nature is at once a substance, “a squishy thing,” and an essence, a transcendent abstract material.¹¹¹ According to Morton, environmental thinking would be refreshed by exposing the different “fantasy images” of what constitutes the natural.¹¹² As I have been arguing here, pataphysics, in its concern with imaginary solutions and exceptions, is fundamentally concerned with ironizing and exposing fantastic reified notions of nature. The pataphysical poetics of Mouré and Robertson do more than simply expose fantasies, however, as Morton implies they must. Robertson claims that “we are Naturalists of the inessential”; her aim is not to revel in the “fantasized balance” of an organized view of nature, but to expose and attend to the various contexts of “environmental disturbance and contingency.”¹¹³ The natural scientists in both works by Mouré and Robertson stand in relation to such articulatory histories of

surfaces not as objects, not as settled subjects, but as relational, semiotic surfaces themselves – surfaces that are neither completely substances nor essences, but thresholds. The result is, not collapsed distinctions between subject and object or inside and outside, but a semiotically deepened sense of the complexity of nature and the natural as these materials and ideas come to signify in the contingent and limited *Umwelten* of the city.

My aim here is to directly challenge persistent realist and scientific materialist attitudes in ecocriticism that remain suspicious of the emphasis on semiotic concerns in postmodern literary theory. Jacques Derrida's claim in *Of Grammatology* that "*il n'y a pas de hors-texte*"¹¹⁴ – often cited by ecocritics as an example of poststructuralism's disregard for nature – can be reconsidered in an ecocritical light, given the importance of signification to biosemiotic notions of ecology and environment. I propose that imaginary solutions have practical consequences, as evidenced by the cultural re-signification of Toronto's waterways through "citizen-led efforts to recall, rethink and restore our communal aqua," which has led to important memorial and biological rehabilitation.¹¹⁵ We drink water, it goes without saying. However, we also drink reading and writing. We drink our own as well as that belonging to those non-human others for whom we and water signify in ways that can only be imagined.

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NOTES

- 1 Adapted and expanded from “Pataphysics and Biosemiotics in Lisa Robertson’s Office for Soft Architecture,” *Interdisciplinary Studies in Literature and Environment* 18, no. 3 (summer 2011): 615–36.
- 2 R. W. Wursthwagen, “Piccu Carlu: The Muskoka-Maya Connexion,” *Open Letter* 6–7 (winter 1980–81): 151.
- 3 Richard Truhlar, “Report from Piccu Carlu: The Muskokan-Mayan Shift,” *Open Letter* 6–7 (winter 1980–81): 155.
- 4 Wursthwagen, “Piccu Carlu,” 148.
- 5 Adrian Fortesque, “Ambulatory Signification: A Letter,” *Open Letter* 6–7 (winter 1980–81): 170.
- 6 Jarry spells *pataphysics* with an apostrophe (’pataphysics) in order to announce the fact that its origins are elsewhere, beyond the domain of the name. McCaffery and Nichol in the Toronto Research Group (TRG) spell *pataphysics* with two apostrophes, or an open quotation mark: “pataphysics. The TRG writes in the introduction to the *Open Letter* issue that the double apostrophe marks at once a double elision and “a shift from/to quotation” (Toronto Research Group, “Introduction,” *Open Letter* 6–7 [winter 1980–81]: 70). The emphasis on signification here (even in the context of non-signification that the authors go on to claim) is relevant to the discussion of semiotics below. However, for the sake of consistency and concision (admittedly pataphysical constraints), I will drop all apostrophes around the word.
- 7 Alfred Jarry, *Exploits & Opinions of Dr. Faustroll, Pataphysician* (1911), trans. Simon Watson Taylor (Boston: Exact Change, 1996), 22.
- 8 Craig Douglas Dworkin, “The Imaginary Solution,” *Contemporary Literature* 48, no. 1 (2007): 54.
- 9 There has been very little scholarship done to date on Mouré and Robertson from an ecocritical perspective. See Adam Dickinson, “The Weather of Weeds: Lisa Robertson’s Rhizome Poetics,” *Rhizomes: Cultural Studies in Emerging Knowledge* 15 (winter 2007). Web.
- 10 Translated as *The Keeper of Sheep*, originally published in 1914.
- 11 As Alfred Holden points out, “Lake Ontario was big enough and far enough away from where most people lived that discharge there seemed like the final solution” (Alfred Holden, “The Forgotten Stream: The Real Taddle Creek – A Brief History,” *Taddle Creek* 1, no. 1 [1997]. Web. Accessed 11 May 2008.) The systematic ingenuity of city planners had served to make invisible a portion of the city’s environmental reality.
- 12 Erin Mouré, *My Beloved Wager: Essays from a Writing Practice* (Edmonton: NeWest, 2009), 200.
- 13 *Ibid.*, 199.
- 14 Lisa Robertson, *Occasional Work and Seven Walks from the Office for Soft Architecture* (Astoria: Clear Cut, 2003), cover.
- 15 *Ibid.*, 1.
- 16 Lisa Robertson and Steve McCaffery, “Correspondence,” in *PhillyTalks #17*, ed. Alan Filreis (Philadelphia: Kelly Writers House, 2000), 33.
- 17 Christian Bök, *’Pataphysics: The Poetics of an Imaginary Science* (Evanston, IL: Northwestern University Press, 2002), 84.
- 18 Glenn Adelson and John Elder, “Robert Frost’s Ecosystem of Meanings in

- “Spring Pools,” *Interdisciplinary Studies in Literature and Environment* 13, no. 2 (2006): 15.
- 19 Lawrence Buell, *The Environmental Imagination: Thoreau, Nature Writing, and the Formation of American Culture* (Cambridge, MA: Harvard University Press, 1995), 92.
- 20 Steven Rosendale, ed., *The Greening of Literary Scholarship: Literature, Theory, and the Environment* (Iowa City: University of Iowa Press, 2002), xxv.
- 21 Cheryll Glotfelty and Harold Fromm, eds., *The Ecocriticism Reader: Landmarks in Literary Ecology* (Athens, GA: University of Georgia Press, 1996), xviii.
- 22 Serpil Oppermann, “Theorizing Ecocriticism: Toward a Postmodern Ecocritical Practice,” *Interdisciplinary Studies in Literature and Environment* 13, no. 2 (2006): 107.
- 23 Adelson and Elder, “Robert Frost’s Ecosystem of Meanings,” 8.
- 24 Camilo Gomides, “Putting a New Definition of Ecocriticism to the Test: The Case of *The Burning Season*, a Film (Mal)Adaptation,” *Interdisciplinary Studies in Literature and Environment* 13, no. 2 (2006): 13.
- 25 *Ibid.*, 22.
- 26 Glen A. Love, *Practical Ecocriticism: Literature, Biology, and the Environment* (Charlottesville: University of Virginia Press, 2003), 87.
- 27 Terry Gifford, *Pastoral* (New York: Routledge, 1999), 147.
- 28 *Ibid.*, 49.
- 29 Jarry, *Exploits & Opinions*, 21–22.
- 30 Bök, *Pataphysics*, 30.
- 31 Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987), 88.
- 32 Adrian Parr, ed., *The Deleuze Dictionary* (New York: Columbia University Press, 2005), 67.
- 33 Christopher Dewdney, “Parasite Maintenance,” in *Alter Sublime*, by Christopher Dewdney (Toronto: Coach House, 1980), 78.
- 34 Christian Bök, *Crystallography*, 2nd rev. ed. (Toronto: Coach House, 2003), 156.
- 35 *Ibid.*, 114.
- 36 Kenneth Goldsmith, *Fidget* (Toronto: Coach House, 2000); Kenneth Goldsmith, *Soliloquy* (New York: Granary, 2001); Robert Kocik, *Rhrurbarb* (Bowdoinham, ME: Field, 2007).
- 37 Robertson and McCaffery, “Correspondence,” 24.
- 38 *Ibid.*, 17.
- 39 Uexküll was a largely marginalized figure in twentieth-century ecology, dismissed as a vitalist and because of his resistance to evolutionary theory. His work has subsequently attracted renewed interest, however, particularly among biosemioticians. See Uexküll’s “A Stroll Through the Worlds of Animals and Men” for more specific examples of his strange descriptions of non-human *Umwelten* (Jakob von Uexküll, “A Stroll Through the Worlds of Animals and Men: A Picture Book of Invisible Worlds” [1934], in *Instinctive Behavior: The Development of a Modern Concept*, ed. and trans. Claire H. Shiller [New York: International University Press, 1957], 5–80).
- 40 Jakob von Uexküll, “The Theory of Meaning,” *Semiotica* 42, no. 1 (1982): 52.
- 41 *Ibid.*, 29–30.
- 42 Giorgio Agamben, *The Open: Man and Animal*, trans. Kevin Attell (Stanford, CA: Stanford University Press, 2004), 45.
- 43 Von Uexküll, “Theory of Meaning,” 71.

- 44 Bök, *'Pataphysics*, 9.
- 45 Von Uexküll, "Theory of Meaning," 42.
- 46 Ibid., 43.
- 47 Ibid., 63.
- 48 Ibid., 66.
- 49 In *A Thousand Plateaus*, Deleuze and Guattari acknowledge the importance of Uexküll's emphasis on the affective meaning of an environment to their concept of deterritorialization. The spider and the fly are involved in a perpetual relationship of deterritorialization and reterritorialization: "How could movements of deterritorialization and the processes of reterritorialization not be relative, always connected, caught up in one another? The orchid deterritorializes by forming an image, a tracing of a wasp; the wasp reterritorializes on that image. The wasp is nevertheless deterritorialized, becoming a piece in the orchid's reproductive apparatus. But it reterritorializes the orchid by transporting its pollen. Wasp and orchid, as heterogeneous elements, form a rhizome" (10).
- 50 Bök, *'Pataphysics*, 3.
- 51 Erin Mouré, *Sheep's Vigil by a Fervent Person: A Translation of Alberto Caeiro/Fernando Pessoa's O Guardador de Rebanhos* (Toronto: Anansi, 2001), viii.
- 52 Ibid., 15.
- 53 Ibid., 7.
- 54 Mouré, *My Beloved Wager*, 199.
- 55 Ibid., 177.
- 56 Ibid., 188.
- 57 Ibid., 189.
- 58 Mouré, *Sheep's Vigil*, 59.
- 59 Ibid., 81.
- 60 Ibid., 55.
- 61 Ibid., 85.
- 62 Ibid.
- 63 Mouré, *My Beloved Wager*, 198.
- 64 Ibid., 200.
- 65 Ibid.
- 66 Michel de Certeau points out that *strategies* "seek to create places in conformity with abstract models" (Michel de Certeau, *The Practice of Everyday Life* [Berkeley: University of California Press, 1984], 29). Moreover, "strategies are able to produce, tabulate and impose these spaces" (30). *Tactics*, on the other hand, "do not obey the law of place, for they are not defined or identified by it" (29); "they can only, use, manipulate, and divert these spaces" (30).
- 67 Robertson, *Occasional Work*, 59.
- 68 Ibid.
- 69 Ibid., 55.
- 70 Ibid.
- 71 Stephen Collis, "The Frayed Trope of Rome': Poetic Architecture in Robert Duncan, Ronald Johnson, and Lisa Robertson," *Mosaic* 35, no. 4 (2002): 155.
- 72 Robertson and McCaffery, "Correspondence," 24. With its emphasis on imaginary solutions, the traditional pastoral can be said to possess pataphysical characteristics. In his *PhillyTalks* correspondence with Robertson, McCaffery argues for the pataphysical character of historical forms of the pastoral: "The Virgil-Horace-Rapin-Pope line offers a theory of pastoral as the idealistic portrayal of a Golden Age; a 'pataphysical origin that offers itself as a recuperative quest'" (ibid., 22). He goes on to point out that "pastoral is a kind of urban imaginary, a carefully constructed, overcoded artifice designed to meet the demand of a patrician coterie" (ibid.).
- 73 Robertson, *Occasional Work*, 250.
- 74 Ibid.

- 75 Robertson argues “that pastoral utopias have efficiently aestheticized and naturalized the political practices of genocide, misogyny, and class and race oppression” (Lisa Robertson, “How Pastoral: A Manifesto,” in *Telling It Slant: Avant-Garde Poetics of the 1990s*, ed. Mark Wallace and Steven Marks [Tuscaloosa: University of Alabama Press, 2002], 23).
- 76 Marcello Barbieri, “Editorial: The Challenge of Biosemiotics,” in *Introduction to Biosemiotics: The New Biological Synthesis*, ed. Marcello Barbieri (Dordrecht: Springer, 2007), x.
- 77 Wendy Wheeler, “Figures in a Landscape: Biosemiotics and the Ecological Evolution of Cultural Creativity,” *L’Esprit Créateur* 46, no. 2 (2006): 103.
- 78 Wendy Wheeler, *The Whole Creature: Complexity, Biosemiotics and the Evolution of Culture* (London: Lawrence and Wishart, 2006), 147.
- 79 Jesper Hoffmeyer, *Biosemiotics: An Examination into the Signs of Life and the Life of Signs*, trans. Jesper Hoffmeyer and Donald Favareau (Scranton: University of Scranton Press, 2008), 189.
- 80 Ibid., 27.
- 81 Ibid., 18.
- 82 Jesper Hoffmeyer, *Signs of Meaning in the Universe*, trans. Barbara J. Haveland (Bloomington: Indiana University Press, 1996), 61.
- 83 Bök, *Pataphysics*, 16.
- 84 Hoffmeyer, *Signs of Meaning*, 145.
- 85 Ibid., 144.
- 86 Ibid., 141.
- 87 Robertson, *Occasional Work*, 149.
- 88 Ibid., 16–17.
- 89 Ibid., 126, 127.
- 90 Ibid., 130.
- 91 Wheeler, “Figures in a Landscape,” 104.
- 92 Miriam Nichols notes that the blackberry “does not try to get past the modern with its lingering affection for hard forms, but rather to work upon its surfaces” (Miriam Nichols, “Toward a Poetics of the Commons: *O Ciudadán* and *Occasional Work*,” in *Antiphonies: Essays on Women’s Experimental Poetics in Canada*, ed. Nate Doward [Toronto: The Gig, 2008], 160). In this way, the blackberry does not fall into the strictures of creativity that separate modern from postmodern. Its significance comes, not from its investment in essential artistic taxonomies, but from its complete concern with surfaces and its capacity to deterritorialize and reinvent any surfaces it comes into contact with.
- 93 Robertson, *Occasional Work*, 130. Not unlike Robertson’s discussion of the blackberry species, Mitchell Joachim’s pataphysical creation FAB TREE HAB proposes to grow homes and residential surfaces from living trees. See www.terreform.org/projects_habitat_fab.html.
- 94 Hoffmeyer, *Biosemiotics*, 49.
- 95 Jennifer Scappettone, “Site Surfeit: Office for Soft Architecture Makes the City Confess,” *Chicago Review* 51, no. 4 (2005): 74.
- 96 Robertson, *Occasional Work*, 256.
- 97 Robertson and McCaffery, “Correspondence,” 24.
- 98 Epigenetics attempts to account for influences other than DNA that affect the development of an organism. The term is defined by E. Li as “any heritable influence (in the progeny of cells or individuals) on gene function that is not accompanied by a change in DNA sequence” (E. Li, “Chromatin Modification and Epigenetic Reprogramming in Mammalian Development,” *Nature Reviews*

- Genetics* 3 [Sept. 2002]: 662–73, qtd. in Johannes Huber and Ingolf Schmid-Tannwald, “A Biosemiotic Approach to Epigenetics: Constructivist Aspects of Oocyte-to-Embryo Transition,” in *Introduction to Biosemiotics: The New Biological Synthesis*, ed. Marcello Barbieri [Dordrecht: Springer, 2007], 464). Similarly, as Leslie A. Pray points out, “epigenetic information modulates gene expression without modifying actual DNA sequence” (Leslie A Pray, “Epigenetics: Genome, Meet Your Environment,” *The Scientist* 18, no. 13/14 [5 July 2004], Web). Robertson’s research underscores the degree to which we inherit the spaces of the city, not simply according to their official designation or classification, which would represent genetic inheritance, but also according to the way people and other organisms have used and altered those spaces over time and the alternative memories that inhere as a result. As Wheeler points out in a discussion of the relevance of epigenetics to biosemiotics, “epigenetic inheritance indicates our inseparable lived relation to our environment, including our cultural environment” (Wheeler, *Whole Creature*, 14).
- 99 Robertson, *Occasional Work*, 164.
- 100 Hoffmeyer, *Biosemiotics*, 362.
- 101 *Ibid.*, 80.
- 102 Timo Maran helpfully makes the claim “that it is reasonable to consider [the] natural environment as being textual and related to written texts” (Timo Maran, “Towards an Integrated Methodology of Ecosemiotics: The Concept of Nature-Text,” *Sign Systems Studies* 35, no. 1–2 [2007]: 287). However, his insistence on the capacity of nature writing to directly communicate “nature” resurrects all of the difficulties associated with realist aesthetics that have been discussed above.
- 103 Liz Forsberg and Georgia Ydreos, “Participation/Precipitation: Can Community-based Arts Help Keep Us Afloat?” in *HTO: Toronto’s Water from Lake Iroquois to Lost Rivers to Low-flow Toilets*, ed. Wayne Reeves and Christina Palassio (Toronto: Coach House, 2008), 177.
- 104 *Ibid.*, 172.
- 105 Astrida Neimanis, “Bodies of Water, Human Rights and the Hydrocommons,” *TOPLA: Canadian Journal of Cultural Studies* 21 (spring 2009): 161.
- 106 *Ibid.*, 166.
- 107 It should be noted that my discussion of water in an essay on pataphysics and biosemiotics is highly appropriate given the role water plays as an exemplary object of pataphysical analysis in Jarry’s *Exploits & Opinions of Dr. Faustroll* (15–16) and as a key example of emergent phenomena in Wheeler’s discussion of biosemiotic freedom (Wheeler, “Figures in a Landscape,” 102–3).
- 108 Mitchell Joachim, “FAB TREE HAB: Living Graft Prefab Structure,” *Terreform1*. Web.
- 109 Christopher Hume, “A Meat Home on the Renewable Range,” *Toronto Star* (23 Jan. 2010): E1.
- 110 *Ibid.*, E14.
- 111 Timothy Morton, *Ecology without Nature: Rethinking Environmental Aesthetics* (Cambridge, MA: Harvard University Press, 2007), 16.
- 112 *Ibid.*, 18.
- 113 Robertson, *Occasional Work*, 130.
- 114 Jacques Derrida, *Of Grammatology*, trans. Gayatri Chakravorty Spivak, corrected ed. (Baltimore, MD: Johns Hopkins University Press, 1997), 158.
- 115 Wayne Reeves and Christina Palassio, eds., *HTO: Toronto’s Water from Lake Iroquois to Lost Rivers to Low-flow Toilets* (Toronto: Coach House, 2008), 14.

CHAPTER 23

Literature and Geology: An Experiment in Interdisciplinary, Comparative Ecocriticism

Travis V. Mason

The Earth is a dynamic body with its surface constantly changing. – Harry H. Hess, “History of Ocean Basins”¹

Examine any long-term natural ecosystem in one of the few remaining untouched places of the Earth, and you will find it is dynamically stable, just like your own body. – James Lovelock, *The Revenge of Gaia*²

1. DYNAMIC STABILITY

We are bewildered by the thought that we might have a duty to something so clearly non-human. – Mary Midgley, *Science and Poetry*³

In *Science and Poetry* (2002), British philosopher of science Mary Midgley addresses, among other things, ethical dilemmas about the relation between humans and the earth. Her comment regarding the incredulity with which most humans confront this dilemma, however, begs the question: do ethical relationships necessarily depend upon the degree to which the Other appears human? While a continuum documenting other species' proximity to and distance from humanness (however defined) might support this notion, it would be facile to assume that humanness alone determines one's sense of duty to an Other. However, in light of the increasing fervour of "green consciousness" globally (which is not to say universally), I take Midgley's point that living organisms – humans, primates, marine life, dogs/cats, birds, trees, grasses, fruits/vegetables, mosses/lichens, insects – have by and large been acknowledged by environmentalists as worthy of ethical treatment by humans. If bonobos, for example, occupy a higher position on this imagined continuum than, say, salmon (which are, clearly, non-human), salmon have in turn been evoked more often as part of an ethically green movement than granite boulders and schist. The earth's non-humanness, then, results from its abiotic characteristics. Rocks do not live. Therefore, they are as far removed from humanness as possible. But, as geologists will tell you, much biotic activity on earth depends upon abiotic elements, such as rock and weather. Having developed strategies for reading literature about place, animals, and plants, ecocritics have not deviated too much from this focus on the biotic. Notions of place, land, and landscape, though strictly speaking abiotic, tend to comprise living organisms or, as in the case of landscape painting, to represent ideas/ideals linked to human thought and actions. Rocks and mountains, in other words, fulfil environmental rather than ecological imperatives.⁴

Taken to one extreme, ecocriticism understands humans both as vectors of injustices perpetrated by political and economic globalizing powers against the planet and its inhabitants *and* as agents capable of atoning for such injustices. Taken to another extreme, ecocriticism places humans within a natural and cultural world, a world that acknowledges the revolutionary theories of geologic time, of evolution by natural

selection, and of non-human agency – a world, in short, in which humans, historically, matter very little. Neither of these extremes strikes me as an ideal (and stable) version of ecocritical practice. The following experiment in interdisciplinary and comparative ecocriticism addresses the concerns of both extremes from somewhere in between.

Both interdisciplinary and comparative criticisms gesture beyond boundaries that can potentially restrict the breadth of scholarly investigation. According to Canadian ecocritic Susie O'Brien,

If ecocriticism is to be useful as a mode of critique, it will need to move ... away from simply analysing texts to looking at the institutional structures that frame such practices with the aim, not of transcending them with spurious claims of taking it back to the streets (or woods), but of, as a first goal, understanding how they work within, on, and through the categories of culture and environment.⁵

O'Brien's imperative emphasizes the political aspects of ecologically oriented scholarship and tends toward the ecocritical extreme that sees humans as vectors of harm and agents of change. Without disputing the value of O'Brien's cultural studies approach, I argue that textual analysis retains some usefulness – as a methodology capable of linking language to historical and political concerns – even within an ecocritical context that does not explicitly interrogate the categories of culture and environment. My experiment, however, implicitly transgresses such categories, relying as it does on Don McKay's claim that "it is as dangerous to act as though we were not a part of nature as it is to act as though we were not a part of culture."⁶

My essay's title deliberately echoes William Rueckert's pioneering and generative "Literature and Ecology: An Experiment in Ecocriticism." Beyond the title, the influence resonates primarily in this essay's experimental tone. But I also recognize in Rueckert's essay a call to contextualize ecocriticism that O'Brien repeats nearly three decades later: "How," asks Rueckert, "does one engage in responsible creative and

cooperative biospheric action as a reader, teacher (especially this), and critic of literature? I think that we have to begin answering this question and that we should do what we have always done: turn to the poets. And then to the ecologists.”⁷ Since Cheryll Glotfelty and Harold Fromm included Rueckert’s experiment in the popular *The Ecocriticism Reader* (1996), ecocritics have begun to answer this question in compelling ways, even if the most influential ecocritics have not turned to ecologists (and other scientists) as often as Rueckert would have liked.⁸

Modifying Rueckert’s call to turn to the poets and ecologists, I want to shift the terms of debate to unsettle disciplinary and geopolitical boundaries in two ways: by focussing on the science of geology as a resource for ecocritical analysis, and by comparing poetry from different countries – Canada and South Africa. If ecocriticism has largely developed by ignoring the contributions of Canadian texts and critics,⁹ its focus on the global north¹⁰ has abrogated even more national literatures and critics that tend to be marginalized because of their sub-equatorial location. The following cross-cultural comparison of Canadian and South African poetry points to one way ecocriticism can widen its scope to global concerns while still remaining focussed on local realities and imaginings. The interdisciplinary component of this essay suggests one strategy for managing the tensions provoked by such a local-global experiment.¹¹

Interdisciplinary ecocriticism enables an understanding of how the physical world functions – biologically, chemically, ecologically – and how “science” collects, organizes, and disseminates such knowledge, effectively interrogating, as O’Brien would have it, the categories of “culture” and “environment,” albeit indirectly and with a degree of deference to what an institution such as science – broadly speaking – can teach ecocritics about the physical world. To the extent that they consider elements of the physical world in relation to human language and culture, ecocritics are perhaps the phenomenologists of literary and cultural criticism. As William Howarth notes in “Some Principles of Ecocriticism,” “Ecocriticism, instead of taxing science for its use of language to represent (mimesis), examines its ability to point (deixis).”¹² In addition to

spending time in the field observing, reading research and writing from the sciences enables greater proximity to the physical world than reading literature alone. The scientific texts I refer to in this essay – both popular and academic – shape my approach to the rocks and glaciers in the poems under discussion (primarily by providing me with a more thorough understanding of geologic time and processes than I had prior to writing this essay). Furthermore, whatever the science has taught me about plate tectonics and soil composition modifies, in practice, how I read rocks and soil and weather.

Keeping in mind Rueckert's experiment and O'Brien's challenge, I use Don McKay's notion of "geopoetry" – a deep-time variation on his earlier notion of "wilderness"¹³ – to frame close readings of lyric poems by McKay, W. H. New, and Dan Wylie. I limit my choice of poems to those dealing with geology and geologic time, particularly as they provide impetus for thinking about a human (and poetic) relation to the temporal and phenomenal world. By attending to the science of geology, moreover, I want to demonstrate how a science not typically associated with the environmental movement or ecology can contribute to an understanding of ecological processes that have been occurring for millennia and that remain relevant today.

Some ecocritics have begun to consider the implications of "geophilosophy" as a theoretical model for current ecocritical scholarship. In terms of French philosopher Gilles Deleuze and psychoanalyst Félix Guattari's collaborative work, however, geophilosophy has far less to do with geology than with a geographical notion of mapping, despite their use of such terms as "stratification," "folding," and, well, "geology." Geology for Deleuze and Guattari, at least as they express it in "10,000 B.C.: The Geology of Morals" (a pun on Nietzsche's "Genealogy of Morals") offers an alternative to the linear, progressive concept of genealogy. As Dianne Chisholm notes in her introduction to a special issue of the online journal *Rhizomes*, geophilosophy avoids geological discourse proper and instead

... probes the earth for an onto-geo-logic of complex processes of stratification.... [G]eophilosophy affirms how the earth moves in flows and folds, and how it stratifies and deterritorializes, with a constant and creative instability that we should discern in human social stratification. If geophilosophy escapes instrumental science, it also brings philosophy down to earth.¹⁴

Geopoetry, by contrast, does not seek to escape science but rather to incorporate it, simultaneously engaging with the failure of scientific and literary imaginations to fully articulate the workings of the physical world. Geopoetry, in other words, invites ecocritics to attend to language and to the phenomenal world studied by scientists, while geophilosophy insists on borrowing terms that ultimately reinforce the primacy of human language and intellect.¹⁵ The value of geopoetry from an ecocritical perspective lies in its insistence on cross-disciplinary, polyphonic reading strategies and in its capacity to invoke linguistic gestures of humility in response to the poetry of the phenomenal world.

2. PLACING GEOLOGY IN ECOLOGICAL CONTEXT

... Astonished
you are famous and anonymous, the border
washed out by so soft a thing as weather.
– McKay, “Astonished – ”¹⁶

Literature scholars have begun paying heed to the influence of geology on literature, but few have done so within an explicitly ecocritical framework. Articles on Robinson Jeffers and his relation to other poets and on John Burroughs are notable exceptions.¹⁷ With *Romantic Rocks, Aesthetic Geology* (2004), Noah Heringman conducts a valuable reassessment of Romantic poetry as it developed alongside the science of geology, but he distances his work from ecocriticism because he claims, rather un-

convincingly, that his “focus on untamed nature is problematic from the point of view of ecocriticism and other recent environmental writing.”¹⁸ I am not sure how a focus on “untamed nature” would present problems for ecocritics, unless Heringman is referring to the likelihood that such a term is apt to be challenged by ecocritics. In a similarly recuperative mode, Ralph O’Connor offers, with *The Earth on Show: Fossils and the Poetics of Popular Science, 1802–1856* (2007), literary readings of popular geologic writings. While both Heringman’s and O’Connor’s texts have much to offer ecocritics with an eye to geology, neither positions itself consciously within an ecocritical paradigm. Despite this reluctance, both works comprise literary and cultural research germane to historians of science and ecocritics alike. The capacity of such an ongoing history to inform contemporary views of discrete scientific fields and their impact on ecocriticism cannot be underestimated. If nothing else, such work reminds that geology – like ecology, phenomenology, literary criticism, and sociology – affects research beyond the boundaries imposed by disciplinary thought.

But if Heringman and O’Connor contextualize a particular set of responses to geological discourse in the nineteenth century, they reveal little about how the science of geology affects the science of ecology. Since the mid-twentieth century, geology’s impact on ecology has become more pronounced, relating as it does to such environmental concerns as agriculture (soil science), climate (orography¹⁹ and weathering), and evolution (palaeontology). Insofar as ecologists and environmental scientists incorporate geological knowledge into their research, geology has the potential to inform ecocritical work intent on crossing disciplinary boundaries. Becoming familiarized with scientific discourse and extending research across disciplinary as well as geopolitical borders are both worthy goals if ecocritics are to seriously address conversations about the most pressing global crisis – namely, global climate change – of the twenty-first century. What can ecocritics offer these conversations besides insight into some of the finest “non-scientific” thinking and writing? As students of language, ecocritics can offer the capacity to use language and imagination to question the damaging choices humans

have made and the rhetoric used to condone such choices. As students of literature, ecocritics can offer the capacity to embrace paradox, polyphony, and in-betweenness. And, most importantly, as teachers of language and literature, ecocritics can offer the capacity to remind scores of students that literature, as part of their everyday lives, can actually engage real-world problems and invite participation in potential solutions.

Harry H. Hess, a geology professor at Princeton whose research was foundational in developing the unifying theory of plate tectonics, coined the term “geopoetry” in 1960 to describe the “unorthodox and tenuous” theory of continental drift,²⁰ a theory that most scientists had difficulty attributing to any physical forces that they knew about based on centuries of observation, deduction, and induction.²¹ In the decade following Hess’s coinage, mounting evidence conspired to turn Hess’s “poetry” into geofact: similar geological strata where South America and West Africa were once joined; identical fossil remains uncovered on different continents; maps and surveys of ocean floors.²² Systematic scientific research in the 1960s helped to prove continental-drift theories that had been circulating at least since Antonio Sinder-Pelligrini’s attempt to “reassemble the continents using scientific evidence” in 1859.²³ For McKay, the term geopoetry remains useful as a way to think about “those moments of pure wonder when we contemplate even the most basic elements of planetary dwelling, and our words fumble in their attempts to do them justice.”²⁴ Now that geologists no longer require “poetry” to justify the veracity of continental drift, “geopoetry” is free to signify a philosophical stance in keeping with McKay’s ecological poetics.

But McKay’s language in his explanation of geopoetry raises questions about a writer who maintains a philosophical distance from Romanticism’s reification of human desires and language, its “celebration of the creative imagination in and for itself.”²⁵ The awe with which McKay writes of rock and geologic time differs from the Romantic sublime, yet “moments of pure wonder” sounds very similar to characteristics of sublime descriptions. The difference is contextual and historical. According to Heringman, during the Romantic period the “geological sublime [held the observer’s] wonder in tension with the impulse toward

mastery,” in part because the contradiction “between the admiration and the domination of nature” had yet to be realized.²⁶ Centuries of scientific and philosophical scholarship have enabled the contradiction to be very much realized. As a result, McKay discusses nature in terms of the sublime more self-consciously than his Romantic predecessors. Intrigued by the potential of such terms as “wonder,” “astonishment,” and “awe” to articulate a poetic response to natural phenomena, McKay is nevertheless aware of the ease with which their use can slip into cliché like an eroded bank sliding into a muddy river. While the failure of human imagination informs both McKay’s and his Romantic predecessors’ poetry,²⁷ McKay’s failure extends to language itself, a distinction which is integral to an understanding of geopoetry vis-à-vis ecocriticism. “Poets,” he writes in *Vis à Vis* (2001), “are supremely interested in what language can’t do; in order to gesture outside, they use language in a way that flirts with its destruction.”²⁸ McKay’s wonder in response to the quartz crystal on his desk²⁹ or the Bow Glacier in Banff National Park,³⁰ expressed imperfectly in language, persists despite and because of the precise geological knowledge he has acquired.

Discussing his 2006 collection of poetry with David Reibetanz, McKay says that “all the geology in *Strike/Slip* is accurate – I’ve actually had geologists come up from the audience and compliment me on the accuracy, and I want that accuracy to hold. Because I want it rooted in phenomenology rather than Romanticism.”³¹ In *Vis à Vis*, McKay engages with the phenomenology of Maurice Merleau-Ponty and Emmanuel Levinas. I can identify McKay’s eco- and geopoetics, for example, in Merleau-Ponty’s claims that “the world is there before any possible analysis of mine”³² and that “looking for the world’s essence is not looking for what it is as an idea once it has been reduced to a theme of discourse; it is looking for what it is as a fact for us, before any thematization.”³³ Instead of citing the discovery and acquisition of such knowledge (or “facts”) as evidence of a supreme human intelligence, as the Romantics might have done,³⁴ McKay pursues a humble attention to physical forces bigger and older than humanity, albeit ones that humans are affected by and complicit in. The resulting attention, which McKay articulates

most fully in “Otherwise than Place,”³⁵ involves “asking, for example, not ‘what’s the beach to me?’ but ‘what am I to the beach?’”³⁶ Expressions of wonder inspired by recognizing humans as incidental to geological and evolutionary processes – which is as good a synopsis of the sublime as any – for McKay might manifest in two ways: as astonishment or as petrification. Each response correlates in McKay’s geopoetry to a different version of deep time: astonishment responds to eternity and implies a “wide-mouthed silence which we occupy, which occupies us as we turn to the immeasurable life of stone”³⁷; petrification responds to infinity and implies stone reverting to rock.³⁸ The first two poems in *Strike/Slip* illustrate the distinctions by way of introducing the collection’s main set of tensions.

Rather than denoting a simple binary, rock and stone represent differing degrees of use-value: “What happens between rock and stone is simply everything human.... [R]ock is as old as the earth is; stone is only as old as humanity.”³⁹ Playing on the aural and visual – though not, it must be said, the etymological – resonance between stone and astonishment, McKay aligns language with stone: both are, in McKavian terms, gestures toward domestication. In “Astonished –,” the speaker admits the tenuousness of such gestures by rendering synonyms of the title descriptor with a series of related participial adjectives, effectively imposing linguistic order within a verbal structure that, in grammatical terms, is non-finite. In other words, McKay chooses a verbal form that does not require a tense or a person. Implying a subject without naming one, the speaker follows the dash in the title with “astounded, astonished, astunned, stopped short / and turned toward stone, the moment / filling with its slow / stratified time.”⁴⁰ The litany of adjectives describes responses to deep time that indicate an inability to respond intelligently and coherently. The gesture insists on attempting a turn “toward stone,” to domesticate the moment by speaking it in language both stony and stupefied, thus retaining a semblance of control. But amid the realization that “sediments accumulate on seabeds, seabeds / rear up into mountains, ammonites / fossilize into gems,”⁴¹ the speaker wonders “Are you thinking / or being thought?”⁴² The question, which nicely illustrates

the ambivalence of geopoetic insight, disrupts the domesticating gesture by minimizing the role of human language in the life of the planet. Geopoetic responses to such ambiguity are not unlike the astonished exclamations of Romantic poets in the way geopoetry embraces the relative insignificance of the human voice and expresses it through language.⁴³

If the turn from rock to stone strikes a note of familiar, albeit discomfiting, human action, the turn from stone to rock evokes a vertiginous response experienced in moments of petrification. “Petrified –” recounts this vertigo, positing the geopoet as fixed “in the arms of wonder’s dark / undomesticated sister,”⁴⁴ unable to articulate himself. Without a name, this undomesticated relative of wonder prevents “the entrance into art”⁴⁵ that the poet relies upon to make sense of his astonishment. The geological poems in *Strike/Slip* address the fundamental tension between rock and stone, between wild and domesticated ideas that stretch the limits of the geopoet’s capacity to comprehend and communicate his place in deep time. A short poem that takes its title from a geology textbook illustrates this geopoetic struggle at the level of formal convention. Named for an early geologist’s application of a physics theory (about the potential failure of tensiles, ductiles, and brittles relative to the amount of stress exerted on them) to tectonic forces, “Stress, Shear, and Strain Theories of Failure” demonstrates McKay’s metaphorical skills as well as his ability to integrate language and concepts from the hard sciences. For a poem that announces itself as a sonnet with the line “This sonnet hereby sings,”⁴⁶ “Stress, Shear, and Strain Theories of Failure” accomplishes much more than its glib self-naming suggests by testing the limits of a traditional lyric form against a subject – the earth’s crust – that invites scientific knowledge in addition to emotional introspection.

Though it contains fourteen lines, this sonnet does not adhere to a strict metrical pattern or rhyming scheme, and it is about love, that traditional lyric subject, only in the sense that the poet might, in writing the poem, be paying homage to earth’s “chthonic shear.”⁴⁷ McKay plays on the tensions between fault (“The earth-engine / driving itself through death after death. Strike/slip, / thrust, and the fault called normal, which occurs / when two plates separate),” failure (as in the theories of the

title), and (human) failing (“Let us fail / in all the styles established by our lithosphere”).⁴⁸ The sonnet sustains McKay’s suspicion of language, metaphor, and poetry – his interest in what “language can’t do”⁴⁹ – all of which he argues elsewhere fail necessarily yet instructively.

The traditional sonnet here fails in its attempt to contain the shifting dynamics of the “earth-engine.”⁵⁰ Beginning the first line with three trochaic feet followed by an appropriately placed catalectic to echo the linguistic “lift,” the next three lines attempt to settle into an iambic pentameter but struggle under the “stress shear strain” of metapoetic humility and attention:

They have never heard of lift
and are – for no one, over and over – cleft. Riven,
recrystallized. Ruined again. The earth-engine
driving itself through death after death.⁵¹

Significant for giving the collection its title, this poem challenges conventional wisdom regarding both lyric poetry and lay geology. The rhythms are dissonant, and the earth itself splits and shifts, as the repetition of “death,” the synonymous “cleft” and “riven,” as well as “recrystallization” and “Ruined *again*” indicate. In choosing to resist the sonnet form by eschewing conventional metre, McKay does not suggest he has somehow found a way *not* to participate in the anthropocentrism of the lyric tradition. His poems reveal a complicity he feels as a member of North American society and as a poet. It is good “meditative medicine,” McKay writes, to consider otherwise-than-place⁵²; in other words, it is instructive to consider our relation to the world in ways that reveal, at the very least, our inadequacies as a species, and at the very worst, our arrogance and our violence.

3. RAUCOUS UNSONNETS

What happens to us
Is irrelevant to the world's geology
But what happens to the world's geology
Is not irrelevant to us.

– Hugh MacDiarmid, “On a Raised Beach”⁵³

W. H. New is best known as a teacher, editor, and critic of Canadian literature and postcolonial studies. In 1996, after having written or edited over thirty academic books,⁵⁴ he published *Science Lessons*, a collection of poems offering variations on the sonnet form.⁵⁵ If McKay's poetry functions in my experiment to mobilize an interdisciplinary ecocriticism, New's sonnets in *Science Lessons* serve to unsettle the extent to which scientific ideas and the lyric “I” are capable of addressing ecological crises. As sonnets that are not entirely comfortable with their formal limitations (though comfortable enough that their status as sonnets seems clear in spite of New's formal play), New's poems at once acknowledge and resist the authority of dominant discourse – both lyrical and cultural. McKay and New, in their essays and poems, write the paradox of human linguistic engagement with the land and its inhabitants and recognize the importance of paying attention to the non-human.

I focus here on three poems from *Science Lessons* that purport to provide lessons on geology: “Imprinting,” “Lithosphere,” and “Continental Drift.” New organizes his sequence as a lyrical *Bildungsroman*, the unnamed protagonist (or student) referred to throughout the collection simply as “he.” Though *Science Lessons* was published a decade earlier than McKay's “Stress, Shear, and Strain Theories of Failure,” “Lithosphere” nevertheless resonates with the later poem's attention to geological phenomena. New's earlier poem also confronts the notions of failure and decreation, though not in those terms. The lithosphere – literally *stone globe* – makes up the rigid portion of the earth's upper region, the tectosphere (the asthenosphere makes up the more plastic part, just

beneath the lithosphere), and it comprises the world's tectonic plates.⁵⁶ The "lesson" in this poem revolves around the knowledge that the earth is made of rock but that it nevertheless enables life: "He marvels that the earth should be productive – / mere mud he thought it, yet it yields / hot springs and eggplant."⁵⁷ Rock participates, actively if unconsciously, in the composition of soil, particularly when rock is exposed to conditions favourable for weathering. K. J. Hall and D.W.H. Walton summarize these conditions, after E. Yatsu's *The Nature of Weathering* (1988), as "climate, parent rock, topography, vegetation, hydrological conditions, and time."⁵⁸ Because, as Arthur R. Kruckeberg notes, "changes in landforms and their lithologies are incessant... the kind and amount of weathering yield a secondary geological product, the regolith – rock fragments, soils, and sediments."⁵⁹ Rock weathering represents a physical process that, as McKay says of symbiosis, the Gaia hypothesis, and ecology, is as poetic as it is scientific.⁶⁰ Information about soil's capacity to "yield" vegetables, both in gardens and in uncultivated ecosystems,⁶¹ suggests rich poetry, indeed. New's student reacts to this gardening lesson in a manner that recapitulates a Romantic stance vis-à-vis sublime landscapes, but with a crucial difference.

New is careful not to use words associated with the Romantic sublime when describing the student's response to processes that are bigger than him. As non-material nouns, such words as "wonder" or "awe" seem to have no place in the student's confrontation with the workings of the earth, most material of material. If "wonder" functions, as Heringman argues, to frame Romantic responses to "geologically significant landscapes,"⁶² "marvel," as New employs it, posits the student as an active and central figure in the lesson. Free of the Romanticism often associated with the term "wonder," the verb "marvel" also hints at the student's innocence, his humility vis-à-vis earth's productivity. To marvel is both to recognize a thing's worth and to admit humility in the face of that thing's very existence or accomplishment, such that individual human feats are rendered insignificant.⁶³ Indeed, the only other verb attributed to the student occurs in the phrase "his mind rattles," as if to reinforce his naïve struggle to comprehend an intelligence beyond himself.

For the remainder of the poem, New assigns verbal action to the earth and its concomitants:

it is the range that *rakes* him, the sheer
rainbow creativity that *has him*
dwelling again on ash and stone sidewalk,
looking for the simile, the plain parallel
of urban patch and fostered seedling.⁶⁴

The range – mountain range, range of earth products – “rakes him,” an action that implies a reverse ontology not unlike McKay’s “what am I to the beach?” He is raked like so many fallen leaves accumulating on a lawn; he is posited on an incline determined by the movement of tectonic plates relative to one another.⁶⁵ The action implies that he has been cultivated by the surrounding landscape, that his is not the dominant existence. The impulse to seek the pattern originates with the range’s “rainbow creativity,” which I take to be its striated appearance, evidence of the mountain’s creation. The impulse to look “for the simile” does not originate with the student’s mind. Yet the relation between student and earth has not been exactly reversed, which is why he marvels instead of expressing outright awe: “The earth grounds him,” New writes, “sets / him free, cracks open to sustain repair.”⁶⁶ The shift in these final lines from the creative redundancy of “earth grounds”⁶⁷ to the paradoxical creativity of grounding as freedom and cracking as repair resembles the decreative function of plate tectonics – effectively the geopoetry Hess coined to explain a paradoxical set of forces responsible for the lithosphere’s dynamic stability.

The narrative New constructs throughout *Science Lessons* uses carefully crafted unsonnets – familiar enough to recognize as sonnets, yet full of unconventional syllabics, metrics, and rhyme-schemes – to shape a *Bildungsroman* out of fragments and edges of a life.⁶⁸ Though hardly a conventional coming-of-age story, *Science Lessons* benefits from “the irreducible historical character of geologic phenomena”⁶⁹ to shape the significant – dare I say, rocky – events in the student’s life. In addition

to “Lithosphere” – not to mention “Palaeontology” and “Geological Engineering,” detailed discussion of which falls beyond the scope of this chapter – the book’s framing poems draw on geologic terms and ideas. As with much of New’s writing, the framing poems emphasize a preoccupation with borders and edges.⁷⁰ “Imprinting” provides a preface to the collection; as such it occupies the same temporality as the final poem, “Continental Drift.” Thus, from the retrospective vantage of adulthood, the collection begins: “*All mountains now he metes against / The Selkirks: rocky ridge stepping south / across the border, dissolving.*”⁷¹ This range, anticipating the lesson in “Lithosphere,” participates in historical processes beyond the purview of human agency. The rocky ridges cross political borders easily, and they dissolve more slowly than New’s protagonist can perceive.⁷² Rock and stone – though not precisely corresponding to McKay’s definitions – provide metaphors against which the student learns to measure his own ideas:

*All resolve
he measures by the certainty of stone,
the way grass catches it, dawn fog
coats it in grey illusion, and talus
recklessly records a glacial history
in substance, still being lived.*⁷³

As much as New relies on the metaphor of reading the land, he also acknowledges the extent to which science informs the metaphor, making it (and others throughout the collection) more accurate than it would be occupying a poem that ignores the intellectual history that enables a reading of glacial history. That the history is recorded by talus, or scree, reinforces the student’s movement toward an *edge* that occurs in both poems, resounding in the final poem’s *drift*.

To measure resolve against the certainty of stone is to embrace the dynamism of the earth system – as McKay puts it in *Deactivated West 100* (2005), “Terra Infirma.”⁷⁴ The evidence of this dynamism resides in faults, which in turn cause earthquakes and mountain ranges,

demonstrating in disturbing fashion that the earth's "basic *m.o.* is slow catastrophe, not calm."⁷⁵ New's student avoids becoming petrified by the evidence, however, choosing instead to marvel at the possibilities afforded by failure – the earth's and his own – and change. "Then he is another," begins the concluding poem, "and himself, and still / changing: the land drifts apart, the / great divide to the east, the rift valley."⁷⁶ Identity is at least as fluid as the land that drifts apart; the peaks and valleys of a life edge just this side of cliché: if New deploys the hackneyed metaphor of life as a journey full of peaks and valleys, he avoids cliché by extending the metaphor, emphasizing that a life is prone to shifts, faults, rifts. New articulates his protagonist's capacity to continue to change with a strategic line break, "still / changing," effectively collapsing the boundary between stasis and movement: dynamic stability. Being in place is never, according to the poem, being in one place. Despite the student's desire to remain *here* or *there*, "some insistent drive towards displacement / edges him onward,"⁷⁷ as if he were an erratic boulder caught beneath a slow-moving glacier and writing on the land his biography.

4. TIME, TRAVEL (OR, LOGIC OF EARTH TIME)

Moving, move!

We know where we are.

– Sydney Clouts, "Around this Coast"⁷⁸

A similar drive towards displacement might be said to motivate the best poetry of Zimbabwe-born Dan Wylie. But, although Wylie writes poems about geology and glaciers, the South African landscape in which he lives constitutes one of the most geomorphically stable regions on earth. As a result, Wylie's geopoetry is set mostly in South America. McKay and New ground their geopoetry in the relatively young mountainous terrain of British Columbia: no other landscape in Canada so explicitly and dramatically reminds of earth's dynamic stability.⁷⁹ Newfoundland, by contrast, is geologically old, as McKay notes in his interview with

David Reibetanz. McKay went to Newfoundland “to follow up on the opposite kind of geology from B.C.,” to contemplate the mind-boggling fact that the Avalon Peninsula used to be “a part of proto-Africa that broke off.”⁸⁰ Southern Africa is a current part of the African continent that inspires geopoetry, as well, with a geological history going back “some 3 600 million years” to the early Archaean Eon.⁸¹ Wylie has developed a sensitivity to geology through exposure to southern Africa’s unique ecological and geological features. Like New, Wylie is a teacher, a literary critic, and a poet who published his first collection in 1996.⁸² Unlike New, however, Wylie turned to writing poetry earlier in his academic career. Two poems from his fourth collection, *Road Work* (2007), contemplate geology in ways that are germane to the geopoetic context I have set up in this essay. “Glacier: Perito Moreno Glacier, Patagonia, 11 September 2003” and “Erratic Boulder: Lago Viedma, Patagonia, 30 September 2003” place the speaker in unfamiliar territory, yet for all the geographical distance between South America and southern Africa – though it is worth recalling that approximately 300 million years ago, South America and Africa were likely joined as a “supercontinent”⁸³ – both poems remain close to a traveller’s concern with movement. For both New and Wylie, travel articulates a constancy of change that resembles the constant movement of the earth’s crust and what lies below. If plate tectonics represents, as McKay suggests, a decreative force – breakdown with the possibility of productive return – then New’s and Wylie’s travellers undo themselves amid unfamiliar landscapes and cultures, only to be ontologically reconstituted upon returning home.

Wylie’s poems in *Road Work* resemble neither sonnets nor unsonnets in the sense that I am using the term. “Glacier,” for example, consists of three sections; framed by two brief sections (four and five lines, respectively) that place the speaker on a tour bus travelling to visit the glacier, the middle section inscribes a violent glacial ontology in twenty-one lines. Despite the formal differences, I am tempted to read this middle section of “Glacier” as a hulking sonnet, a sonnet on steroids: perhaps, with its seven extra lines, it might be a sonnet and a half. But whereas McKay’s and New’s unsonnets articulate a modest respect for the form

they parody, Wylie's lyric description of the glacier shucks conventional syllabics like flexing biceps ripping a shirt sleeve. Each line seems enraged with the glacier's animalism, its "serpentine motion / impenetrably frozen, all menace and caress, / armageddon snapping, implacable fragmentation."⁸⁴ Marvelling as New's student marvels, Wylie's speaker encapsulates glaciation's long-term effects, describing how the glacier – "vital ice,"⁸⁵ a noun phrase that sounds like the verb "vitalize" – "gouges down continents to their fossil beds" and "rucks geology up into forests and weak lakes."⁸⁶ Though not alive in a biological sense, this glacier moves with merciless and indifferent force. Wylie effectively evokes a Romantic sense of awe without evoking Romantic formal conventions, as McKay and New both do. In other words, Wylie seems less inclined to reform what McKay considers to be Romanticism's "celebration of the creative imagination in and for itself."⁸⁷ So, although his account of the glacier "grinding / all ethics and terror to rubbled moraine"⁸⁸ jibes with Shelley's account of an Alpine glacier's progress "mapped out [in 'Mont Blanc'] as another illustration of Power,"⁸⁹ it does so inadvertently; Wylie makes no attempt to recapitulate – ironically or otherwise – the pentameter of "Mont Blanc." Nevertheless, the violence with which Wylie imbues the slow-moving Perito Moreno Glacier and the rocky cadences with which he describes it link "poetic and geologic form" in much the same way Shelley's "imitative, 'inorganic'" lines create "a way for the poem to transvalue the conventional catalogue of sublime Alpine features."⁹⁰ Whereas Shelley relied on natural history to forge the link, though, Wylie complements his metaphors with a scientific geology unavailable to Shelley. The result is an account of glaciers' awesome violence that avoids the apocalyptic timbre of "Mont Blanc." The speaker's experience, which he extends while his chagrined fellow tourists wait in the bus, reveals a genuine willingness to acquiesce to the glacier's invitation to be held, literally and figuratively.⁹¹

In the collection's final poem, Wylie revisits the curious wonder that arises when humans are confronted with deep time. Spoken from the perspective, though not in the voice, of Charles Darwin, who visited Patagonia (and other South American locations) during his famous voyage

on Captain FitzRoy's *Beagle*, "Erratic Boulder" recounts Darwin's incredulity at having encountered a large granite rock some "sixty-seven miles distant from the nearest mountain."⁹² Erratic boulders represent a particularly poetic natural process, which also happens to have played a key role in the development of geology and the idea that the earth is billions of years old. At the time of Darwin's *Beagle* voyage, geologists were grappling "to explain the present situation of such travelled fragments," most of which had been observed along "the coasts of Canada and Gulf of St. Lawrence, and also in Chili [*sic*], Patagonia, and the island of South Georgia."⁹³ Jeff Walker identifies John Burroughs as a writer who articulates the poetry of such a process, quoting the American naturalist's comment about a boulder on a neighbouring farmer's property. Imagining how much interest and pride the farmer might take in the boulder if he knew its history,⁹⁴ Burroughs writes that "it was Adirondack gneiss, and had been brought from that region on the back, or the maw, of a glacier, many tens of thousands of years ago."⁹⁵ As Walker explains, Burroughs's metaphors indicate that the erratic "either fell onto the top of the glacier ('on the back') or was scraped from the earth's surface and carried within the glacial ice ('in the maw'),"⁹⁶ both of which are plausible and accurate explanations for how the boulder ended up where it is.

At the beginning of Wylie's poem, "Mister Darwin is puzzled" by a boulder "planted like an affront / on the plain of his millhouse mind."⁹⁷ Initially, the problem represented by the boulder is an epistemological one: "How long have you been stranded?" Darwin asks, "Do you always travel alone? / Did you fall from the grip of an iceberg / adrift like an idea on an ancient sea?"⁹⁸ The questions cannot be answered definitively by Darwin, but based on the conditions in which he encounters erratic boulders in Patagonia – namely, the absence of any signs indicating catastrophic violence – Darwin himself believed, following Lyell, that it is "quite impossible to explain the transportal of these gigantic masses of rock so many miles from their parent-source, on any theory except by that of floating icebergs."⁹⁹ The result, in Darwin's writing and in Wylie's poem, endorses a way of knowing that encompasses an understanding

of deep time as both utterly beyond our capacity to imagine and ironically suitable as metaphor for our movement in space and time. Call it geo-logic, or earth logic, by way of geopoetry.

By ending his collection of travel poems with a poem about Darwin's encounter with an erratic boulder in Patagonia, Wylie accomplishes at least two things. First, he aligns himself (and, by extension, other environmentally conscious writers) with the erratic boulder. In answer to the poetic Darwin, who wonders, "Why should we not be content to rest, / spiny calafate sheltering in our lee?"¹⁰⁰ as the erratic boulder is content to rest, Wylie seems to imply that environmentally conscious writers and travellers are both similar to and different from erratics. On the one hand, what else might we be, having acknowledged humans' relatively inconsequential presence in earth history, but "such travelled fragments," objectified, as New's student is, by the productive, decreative earth? On the other hand, we cannot be content to remain still long enough for plants to grow in our shade. Second, Wylie effectively recognizes geological ideas as ecological ideas and the idea of deep time as a necessary precursor to evolutionary theory as defined by Darwin in the wake of his *Beagle* voyage. As Michael P. Cohen has demonstrated – following Joseph Carroll and Glen Love – evolutionary theory informs environmentalism and ecology to such an extent that ecocritics might as well consider themselves "evocritics."¹⁰¹ Cohen reasons that "if the idea of limited global resources is central to modern environmentalism, it is also rooted in evolutionary theory, from Malthus onward."¹⁰² By the same token, ecology cannot exist without evolutionary theory; in fact, ecology in many ways puts into practice certain aspects of evolutionary theory – namely, population abundance and distribution. I agree that ecocritics have much to learn from evolutionary theory; I am not convinced that the theory sufficiently translates into textual or cultural analysis without first passing through a filter such as ecology, ethology, behaviour psychology, or geology. In part, I blame the narrative focus of evolutionary theory, which has helped to reify narrative literature (novels, stories, myths) over lyric poetry, drama, visual art. The literal and figurative interconnectedness of ecology invites a much broader textual

approach that embraces evolutionary theory as well as history, biology, and geology.

But Cohen's nominal suggestion aside – he does not belabour the point about a possible name change – Wylie's references to animals in "Erratic Boulder" suffice to link biotic and abiotic:

There's nothing here but gross geology,
a tribal irritation of wary guanacos,
a lone loica perched on a grass-blade,
bright chest bulbing like a globule of blood.
The pampas is turning to steel in the presence of doubt.
Mister Darwin must bend his head, and listen.¹⁰³

These lines remind that geological forces have shaped evolutionary and ecological theories since before Darwin's visit to Patagonia. The camelid guanacos and the robin-sized loica both evolved on the pampas – a flat grassland created by successive periods of glaciation and affected by orographic physiognomy (surrounding mountains) – developing adaptations to high altitudes and a cool climate. The doubt Wylie identifies belongs to Darwin, uncertain at this stage of his travels about how the geology of the place affects its natural history. In the absence of Darwin's theory of evolution by natural selection, the ground might as well be steel, incapable of hosting or producing life, impenetrable to analysis. Darwin, though, continues to observe, to listen, inspired by Lyell's discussion of the influence of inorganic causes on species extinction.¹⁰⁴ For Wylie, the agglomeration of forces results in "gross geology," which impels Darwin to wonder what continues "travelling / in the granite centre of [the boulder's] stillness?"¹⁰⁵ The erratic boulder's historical link to movement coupled with its seemingly static position comes to represent conflicting ecocritical tensions between literature and science. By thinking of the boulder as part of an organic world, Wylie invites interdisciplinary movement key to ecological – including evolutionary, geological, biological – readings of the world.

5. SPEAKING FOR THE UTTER

In this timescale logic
doesn't take me very far.

– Robert Berold, “Geologic”¹⁰⁶

McKay, New, and Wylie aptly demonstrate how a poet might find useful, interesting words and ideas in scientific writing. But by using those words and ideas for more than expanding their vocabulary, each also demonstrates a commitment to destabilizing the borders between disciplines and literary forms. At the risk of sounding trite, I think that these poets have written some deceptively simple poems, which require attentive forays into the non-literary world of science if they are to inspire anything other than more poetry. William Rueckert ended his 1978 experiment “short of action, halfway between literature and ecology,” wondering how he and his colleagues could possibly “translate literature into purgative-redemptive biospheric action” and “turn words into something more than more words.”¹⁰⁷ Despite thirty years of potential response to Rueckert’s pioneering efforts, ecocritics have yet to redeem ourselves as a profession and as a species. As Susie O’Brien soberly points out, the past few decades of ecocriticism’s institutional rise have coincided with “accelerating environmental degradation,” a coincidence which highlights the need for ecocritics to examine our strategies and habits critically and reflexively.¹⁰⁸ I have not responded to Rueckert’s call by producing fewer words and more actions; neither have I responded to O’Brien’s advice by turning my attention from poetry to cultural studies or by tempering the geological aspect of my experiment with sociohistorical context (that the science of geology developed in large part to determine and establish mineral wealth for rich nations, for example).¹⁰⁹ The writing and publishing of words make up a small portion of what we do, however, and I hope that by choosing to demonstrate this experiment in interdisciplinary, comparative ecocriticism I have not precluded other strategies.

If I stubbornly emphasize a tendency among the poets I discuss in these pages to write precisely and profoundly about the biospheric community, I do so fully aware of the cultural paradigms – Romanticism, taxonomy, linear narrative, Western science – they depend upon to make sense of their imaginative reactions to the physical world. To follow up and contextualize the geologic language in these poems with explanations from scientific materials is not, I think, merely to defer to a higher authority in hopes of communicating singular meaning. Rather, it is to unsettle the boundaries between disciplines, between ways of knowing, and to encourage all such boundary-crossing with the goal, not of achieving a unified theory of knowledge, but of increasing our capacity to know how the world functions.

Finally, shifting the way we think about language, words, and poetry, all of which still tend to refer to the realm of human creativity, remains paramount to the ecocriticism I want to practice. I want to convince more people to listen to the poetry of birds and plants and rocks and water. I want to use language to remind people that language is flawed, and that the way we write now is not so different from the way rocks were painted thousands of years ago, which Al Purdy memorably describes in “The Horseman of Agawa” as “pitting fish eggs and bear grease against eternity / which is kind of ludicrous or kind of beautiful I guess.”¹¹⁰ To pursue the potential in that paradox is to approach a way of knowing that does not rely on the centrality of human experience. In his preface to the eighth edition of *Principles of Geology* (1850), Charles Lyell explains his reasons for investigating the effects of geologic actions:

Such effects are the enduring monuments of the ever-varying state of the physical geography of the globe, the lasting signs of its destruction and renovation, and the memorials of the equally fluctuating condition of the organic world. They may be regarded, in short, as a symbolical language, in which earth’s autobiography is written.¹¹¹

Such traces tell a story of inexorable and unpredictable dynamism in the guise of knowable and dependable stability. We can think of earth's language, as Lyell has it, as a series of utterances and utters, such as those McKay writes about in "Utter": "the utter left by the brute / weight of the piano. By the locomotive / grinding and polishing its tracks."¹¹² Everything leaves traces that invite, and often resist, interpretation. Let the earth and its inhabitants speak for themselves, even as we practice speaking for the utters.¹¹³

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NOTES

- 1 Harry H. Hess, "History of Ocean Basins" (1962), in *Plate Tectonics and Geomagnetic Reversals*, ed. Allan Cox (San Francisco: W. H. Freeman, 1973), 38.
- 2 James Lovelock, *The Revenge of Gaia: Why the Earth Is Fighting Back – and How We Can Still Save Humanity* (London: Penguin, 2006), 34.
- 3 Mary Midgley, *Science and Poetry* (London: Routledge, 2002), 172.
- 4 I do not mean for the difference between "environmental" and "ecological" in this essay to suggest a popular or a non-negotiable division, or for the terms to be mutually exclusive. For my purposes, "environmental" refers to a generalized philosophical view of the natural world, which relies upon an inclusive yet vague term – *the environment* – to impel a green consciousness and, perhaps, influence political action; "ecological," though the term itself seems relatively exclusive, refers nevertheless to a more material view of the natural world, which relies upon a scientific understanding of ecological principles – including evolution – to impel a consciousness attuned to the ways commonly opposed ideas, such as nature and culture, interconnect.
- 5 Susie O'Brien, "Back to the World': Reading Ecocriticism in a Postcolonial Context," in *Five Emus to the King of Siam: Environment and Empire*, ed. Helen Tiffin (Amsterdam: Rodopi, 2007), 196.
- 6 Don McKay, *Vis à Vis: Field Notes on Poetry and Wilderness* (Wolfville, NS: Gaspereau, 2001), 30–31.
- 7 William Rueckert, "Literature and Ecology: An Experiment in Ecocriticism," in *The Ecocriticism Reader: Landmarks in Literary Ecology*, ed. Cheryll Glotfelty and Harold Fromm (Athens, GA: University of Georgia Press, 1996), 114.
- 8 Scholars began to mark the absence of scientific ecology in ecocritical discourse after approximately a decade of important critical work on the literary value of nature writing. For commentary on the lack of scientific rigour in foundational works of ecocriticism, see Glen Love's *Practical Ecocriticism: Literature, Biology, and the Environment* (Charlottesville: University of Virginia Press, 2003) and Dana Phillips's *The Truth of Ecology: Nature, Culture, and Literature in America* (New York: Oxford University Press, 2003).
- 9 See Susie O'Brien's "Nature's Nation, National Natures? Reading Ecocriticism in a Canadian Context" (*Canadian Poetry: Studies, Documents, Reviews* 42 [spring–summer 1998]: 17–41; and rpt. this volume), in which she examines the relative absence of Canadian voices in the early days of institutional ecocriticism.
- 10 While literary and cultural studies has generally operated within a west/east (or occident/orient) dialectic, environmental history and geography have focussed more on the disparities between the rich, industrialized global north and the relatively disadvantaged (yet often) resource-rich global south. Noting the uneven distribution of wealth and the disproportionate use of non-renewable resources, environmental geographers have identified a more accurate paradigm within which to consider neo-colonialism and its effects on such crises as global warming, food scarcity, and resource extraction in Africa and South America.

- 11 While important work has been done to compare Canadian and American literature within an ecological, bioregional framework, much Canadian ecocriticism thus far has been productively concerned with establishing a tradition, and tracing a trajectory, of ecocritical thinking and writing in *Canada*. For comparisons between Canadian and American environmental writing, see Laurie Ricou's *Arbutus/Madrone Files: Reading the Pacific Northwest* (Edmonton: NeWest, 2002); D.M.R. Bentley's *The Confederation Group of Canadian Poets, 1880–1897* (Toronto: University of Toronto Press, 2004), especially the chapters on John Burroughs's influence on Roberts and Lampman; Rebecca Raglon and Marian Scholtmeijer's "Animals are not believers in ecology': Mapping Critical Differences between Environmental and Animal Advocacy Literatures" (*Interdisciplinary Studies in Literature and Environment* 14, no. 2 [2007]: 121–40); and Nicholas Bradley's "Men with Guts: Al Purdy, Robinson Jeffers, and Geopoetic Influence" (*Canadian Poetry: Studies, Documents, Reviews* 62 [spring–summer 2008]: 44–63).
- 12 William Howarth, "Some Principles of Ecocriticism," in *The Ecocriticism Reader: Landmarks in Literary Ecology*, ed. Cheryll Glotfelty and Harold Fromm (Athens, GA: University of Georgia Press, 1996), 80.
- 13 McKay develops his theory of wilderness in *Vis à Vis*: "By 'wilderness,'" he writes, "I want to mean, not just a set of endangered spaces, but the capacity of all things to elude the mind's appropriations. That tools retain a vestige of wilderness is especially evident when we think of their existence in time and eventual graduation from utility: breakdown" (McKay, *Vis à Vis*, 21). Wilderness resides to varying degrees in everything that humans use and/or create for our use. That it remains most visible in typical considerations of "nature" and non-human animals only obscures its less visible presence when our tools, in the broadest sense of the term, fail to do what we want them to. Those moments when the Internet is down or when your shoelace comes untied are moments of wilderness.
- 14 Dianne Chisholm, "Rhizome, Ecology, Geophilosophy (A Map to This Issue)," *Rhizomes: Cultural Studies in Emerging Knowledge* 15 (winter 2007), par. 3. Web.
- 15 A full consideration of the tensions between geophilosophy and geopoetry falls beyond the limits of my argument here. While I am not convinced that the tensions are necessarily irreconcilable, I nevertheless remain suspicious of pseudo- and anti-scientific claims (see Alan Sokal, *Beyond the Hoax: Science, Philosophy, and Culture* [New York: Oxford University Press, 2008], for a sobering, if incomplete, critique of pseudo-science in academia. Sokal tends not to suffer much in the way of imaginative, creative ambiguity: he likes his sentences to mean what they say and say what they mean). Chisholm's statement that "geophilosophy is *more ecological than ecology*, the discipline of which is restricted to the quantifying analytics of ecosystem dynamics, ecosite constituencies, and population stability and sustainability," for example, wrongly assumes that disciplinary restrictions (or limits) prevent cross-disciplinary work (Chisholm, "Rhizome, Ecology, Geophilosophy [A Map to This Issue]," par. 5).
- 16 Don McKay, *Strike/Slip* (Toronto: McClelland & Stewart, 2006), 3.
- 17 See ShaunAnne Tangney's "A Divine Physical World: Catastrophic Geology and Jeffers Country," *Jeffers Studies* 8, no. 1 (2004): 5–15; George Hart's "Seeing Rock for the First Time: Varieties of Geological Experience

- in Jeffers, Rexroth, and Snyder," *Jeffers Studies* 8, no. 1 (2004), 17–29; Bradley, "Men with Guts"; and Jeff Walker, "The Great, Shaggy Barbaric Earth: Geological Writings of John Burroughs," in *Coming into Contact: Explorations in Ecocritical Theory and Practice*, ed. Annie Merrill Ingram et al. (Athens, GA: University of Georgia Press, 2007), 250–59.
- 18 Noah Heringman, *Romantic Rocks, Aesthetic Geology* (Ithaca, NY: Cornell University Press, 2004), 12.
- 19 Orography, the study of the formation and relief of mountains, hills, and other elevated landmasses, contributes to an understanding of global climate since mountainous regions impact the flow of wind so profoundly.
- 20 Hess in fact borrows the term "geopoetry" from J.H.F. Umbgrove's 1947 work *The Pulse of the Earth*. Whereas Umbgrove coins the term to acknowledge the need to furnish geological prose with "temporary hypothetical constructions for lack of solid facts" (J.H.F. Umbgrove, *The Pulse of the Earth*, 2nd ed. [The Hague: Martinus Nijhoff, 1947], 1), Hess uses the term to refer specifically to his attempt "to invent an evolution for ocean basins" (Hess, "History of Ocean Basins," 38). When writing *The Pulse of the Earth*, Umbgrove was not convinced by extant theories of continental drift.
- 21 "Geopoetry Becomes Geofact," *Time*, 5 Jan. 1970. Web.
- 22 Ibid., par. 7; Terence McCarthy and Bruce Rubidge, *The Story of Earth and Life: A Southern African Perspective on a 4.6 Billion-Year Journey* (Cape Town: Struik-New Holland, 2005), 22–25.
- 23 McCarthy and Rubidge, *Story of Earth and Life*, 22.
- 24 Don McKay, *Deactivated West 100* (Kentville, NS: Gaspereau, 2005), 42.
- 25 McKay, *Vis à Vis*, 28.
- 26 Heringman, *Romantic Rocks*, 50.
- 27 Ibid., 49–51.
- 28 McKay, *Vis à Vis*, 32.
- 29 McKay, *Strike/Slip*, 15–16.
- 30 McKay, *Deactivated West 100*, 23–25.
- 31 Don McKay, "Growing an Ear," interview with David Reibetanz, *Echolocation* 7 (2008): 64. McKay's ornithological and ecological accuracy is the subject of Travis V. Mason, *Ornithologies of Desire: Ecocritical Essays, Avian Poetics, and Don McKay* (Waterloo, ON: Wilfrid Laurier University Press, 2013).
- 32 Maurice Merleau-Ponty, *Maurice Merleau-Ponty: Basic Writings*, ed. Thomas Baldwin (London: Routledge, 2004), 66.
- 33 Ibid., 72. Merleau-Ponty represents a clear influence on McKay's phenomenology, but the French philosopher holds a slightly more skeptical view of science than McKay. Merleau-Ponty's claim that science "comes face to face with the real world only at rare intervals" explains away the extent to which the results of reductive, repeatable experiments can get humans closer to the real world by cultivating familiarity with the phenomenal world (291).
- 34 Philip Shaw, *The Sublime* (London: Routledge, 2006), 93.
- 35 McKay, *Deactivated West 100*, 15–31.
- 36 Ibid., 17.
- 37 Ibid., 35.
- 38 Ibid., 47. So, stone-eternity-astonishment corresponds to rock-infinity-petrification. In other words, stone is domesticated rock (think stone hammer, tombstone, keystone); "the idea of eternity domesticates infinity" (ibid., 40); and astonishment enables moments of geopoetic insight while petrification prevents it, replacing

- insight with a fear “of endless uninflected time” (ibid., 40, 46).
- 39 Ibid., 59.
- 40 McKay, *Strike/Slip*, 3.
- 41 Ibid.
- 42 Ibid.
- 43 Cf., for example, Shelley’s speaker in “Mont Blanc” –

The wilderness has a mysterious tongue
 Which teaches awful doubt, or faith so mild,
 So solemn, so serene, that man may be,
 In such a faith, with nature reconciled, –
 Thou hast a voice, great Mountain, to
 repeal
 Large codes of fraud and woe not
 understood
 By all, but which the wise, and great,
 and good
 Interpret, or make felt, or feel!

(Percy Bysshe Shelley, *The Complete Poetical Works of Percy Bysshe Shelley*, vol. 2, ed. Neville Rogers [Oxford: Clarendon, 1975], 76–83). The wilderness and the mountain are granted agency to inspire humans; but certain humans, “the wise,” are capable of interpreting and feeling for themselves what Nature has to teach.

- 44 McKay, *Strike/Slip*, 4.
- 45 Ibid.
- 46 Ibid., 33.
- 47 Ibid.
- 48 Ibid.
- 49 McKay, *Vis à Vis*, 32.
- 50 McKay, *Strike/Slip*, 33.
- 51 Ibid.
- 52 McKay, *Deactivated West 100*, 19.

- 53 Hugh MacDiarmid, *Selected Poems*, ed. Alan Raich and Michael Grieve (Manchester: Carcanet, 1992), 215–18.
- 54 As critic of Canadian and postcolonial writing, New has written such books as *Articulating West* (1972); *Among Worlds: An Introduction to Modern Commonwealth and South African Fiction* (1975); *A History of Canadian Literature* (1989; rpt. 2003); and *Land Sliding: Imaging Space, Presence, and Power in Canadian Writing* (1997). As editor, he has published numerous teaching anthologies and such critical works as *A Political Art: Essays and Images in Honour of George Woodcock* (1978); *Native Writers and Canadian Writing* (1990); *Inside the Poem: Essays and Poems in Honour of Donald Stephens* (1992); and *Encyclopedia of Literature in Canada* (2002). Publication details are included in the list of Works Cited.
- 55 Since that first collection, New has consistently published poetry with Oolichan Press. Though hardly academic in content or style, each collection comprises personae that grapple with questions similar to those New has made prominent in his scholarly work: questions of home, of place vis-à-vis land and language, of personal and communal histories, of movement and travel, of voice and story. *Science Lessons* was followed by *Raucous* (1999), *Stone | Rain* (2001), *Riverbook & Ocean* (2002), *Night Room* (2003), *Underwood Log* (2004), which was nominated for a Governor General’s Award, *Touching Ecuador* (2006), *Along A Snake Fence Riding* (2007), *The Rope-Maker’s Tale* (2009), and *YVR* (2011). Publication details are included in the list of Works Cited.
- 56 Ron Redfern, *Origins: The Evolution of Continents, Oceans, and Life* (Norman, OK: University of Oklahoma Press, 2001), 46.
- 57 W. H. New, *Science Lessons* (Lantzville, BC: Oolichan, 1996), 44.

- 58 K. J. Hall and D.W.H. Walton, "Rock Weathering, Soil Development and Colonization under a Changing Climate," *Philosophical Transactions of the Royal Society of London B* 338 (1992): 271.
- 59 Arthur R. Kruckeberg, *Geology and Plant Life: The Effects of Landforms and Rock Types on Plants* (Seattle: University of Washington Press, 2004), 5.
- 60 McKay, "Growing an Ear," 64. Rock weathering is also responsible for other important processes, as Mary Midgley notes in *Science and Poetry* (2002): "if you stand on the cliffs of Dover, you have beneath you *hundreds of metres of chalk* – tiny shells left by the creatures of an ancient ocean. These shells are made of calcium carbonate, using carbon that mostly came from the air via the weathering of rocks – the reaction of carbon dioxide with basaltic rock dissolved by rain. This process of rock weathering can itself take place without life. But when life is present – when organisms are working on the rock and the earth that surrounds it – it takes place *one thousand times faster* than it would on sterile rock" (175).
- 61 Hall and Walton, "Rock Weathering," 73–74.
- 62 Heringman, *Romantic Rocks*, xv.
- 63 I cannot help but hear an echo here, too, of Andrew Marvell, whose most famous work is "The Garden." The connection is all the more plausible, I think, when we consider that New's own gardening proclivities are well known among his friends and colleagues. It would also imply that *Science Lessons* is at least semi-autobiographical, a perspective that falls beyond the scope and aims of this essay.
- 64 New, *Science Lessons*, 44; my italics.
- 65 "To cause to incline or slope in a particular direction. Chiefly in *pa. pple*" ("Rake, v.3," *Oxford English Dictionary*, 2008. Oxford University Press. Web).
- 66 New, *Science Lessons*, 44. The pun on grounding recurs throughout New's fourth book for young readers, *The Year I Was Grounded*, in which Geordie learns about gardening, word puzzles, and the deteriorating health of the earth. Describing a moment that wouldn't be out of place in *Science Lessons*, Geordie writes about looking "closely at the earth. / Layer by layer, / it told me its history" ("Strata," in W. H. New, *The Year I Was Grounded* [Vancouver: Tradewind, 2008], 4–6). Ultimately, Geordie realizes that "Like cedar trees, ringing every year / their diaries of thirst and rain, / we belong to the earth" (*ibid.*, 16–18).
- 67 New, *Science Lessons*, 44.
- 68 For his doctorate, taken at Leeds in 1966, New studied the modern *Bildungsroman* as social paradigm.
- 69 Stephen Jay Gould, *Time's Arrow, Time's Cycle: Myth and Metaphor in the Discovery of Geological Time* (Cambridge, MA: Harvard University Press, 1987), 154.
- 70 See, especially, *Land Sliding: Imagining Space, Presence, and Power in Canada* (1997) and *Borderlands: How We Talk about Canada* (1998). Publication details are included in the list of Works Cited.
- 71 New, *Science Lessons*, 11; New's italics.
- 72 The Selkirks make up part of the Columbia mountain range and extend from southeastern British Columbia into Idaho for approximately 320 kilometres. A product of uplift during the Mesozoic era, the Selkirks are distinctly older than the Precambrian-/Cretaceous-era Rocky Mountains.
- 73 New, *Science Lessons*, 11; New's italics.
- 74 McKay, *Deactivated West 100*, 41.
- 75 *Ibid.*
- 76 New, *Science Lessons*, 90.
- 77 *Ibid.*

- 78 Sydney Clouts, *One Life* (Cape Town: Purnell, 1966), 17.
- 79 Living among mountains in Alberta or British Columbia is not, of course, a prerequisite for writing about geology. E. J. Pratt's well-known representation, in *Towards the Last Spike* (1952), of the Canadian Shield – the oldest rock in North America – as a prehistoric lizard disturbed by dynamite blasts during construction of the CPR; Christopher Dewdney's *Palaeozoic Geology of London, Ontario* (1973); and Christian Bök's *Crystallography* (1994) are some examples of geological interest outside of British Columbia.
- 80 McKay, "Growing an Ear," 63.
- 81 McCarthy and Rubidge, *Story of Earth and Life*, 14.
- 82 Wylie's debut, *The Road Out* (1996), won both the Ingrid Jonker Prize and the Olive Schreiner Prize for Poetry. It was followed by *Original Forest* (2001), *The Fourteen: Sonnets from amongst the Portuguese* (2005), both self-published, and *Road Work* (2007). If I were comparing stylistic elements only, it would make more sense to compare New's *Science Lessons* to Wylie's *The Fourteen*, which both comprise unconventional sonnets, or *Underwood Log* to *Road Work*, which both might be read as long poems documenting travelling personae. In many ways, *Road Work* resembles *Underwood Log* both thematically and stylistically: in both books the authors demonstrate a characteristic curiosity, which they nurture with travel and cultivate via contemplation and linguistic shiftiness.
- 83 McCarthy and Rubidge, *Story of Earth and Life*, 151.
- 84 Dan Wylie, *Road Work* (Empangeni: Echoing Green, 2007), 71.
- 85 Ibid.
- 86 Ibid.
- 87 McKay, *Vis à Vis*, 28.
- 88 Wylie, *Road Work*, 71.
- 89 Heringman, *Romantic Rocks*, 72.
- 90 Ibid., 71.
- 91 Wylie, *Road Work*, 72.
- 92 Charles Darwin, *The Voyage of the Beagle* (1839), in *Darwin: The Indelible Stamp*, ed. James D. Watson (Philadelphia: Running Press, 2005), 128. Yet another of New's poetry collections connects with this aspect of Wylie's work. *Touching Ecuador* (2006) is a long poem documenting the observations of four personae – a traveller, a preacher, a castaway, and a weaver – in and around the Galápagos archipelago, where Darwin's most well-known research occurred. New's collection also, of course, responds to Al Purdy's *Birdwatching at the Equator: The Galápagos Islands Poems* (1982).
- 93 Charles Lyell, *Principles of Geology; or, The Modern Changes of the Earth and Its Inhabitants Considered as Illustrative of Geology* (1830–33), 8th ed. (London: 1850), 152.
- 94 Burroughs's presumption that the farmer would become more interested in and proud of the boulder at knowing it is a glacial erratic finds a parallel in McKay's comment, near the end of "Otherwise than Place," "about the place he used to live in Lobo Township" (McKay, *Deactivated West 100*, 27). What he misses most about that place is an overgrown area "where the permeable membrane between place and its otherwise first became apparent" and where, next to a ditch, rests "a large granite boulder [he] fondly hoped was a glacial erratic" (ibid.). This hope says more about the desire to know one's place in earth's history than about needing such knowledge in order to recognize a place's capacity to invite meditation, pause, and reflection.
- 95 Qtd. in Walker, "Great, Shaggy Barbaric Earth," 251.

- 96 Ibid., 251–52.
- 97 Wylie, *Road Work*, 82.
- 98 Ibid.
- 99 Darwin, *Voyage of the Beagle*, 128.
- 100 Wylie, *Road Work*, 82.
- 101 Michael P. Cohen, “Reading after Darwin: A Prospectus,” in *Coming into Contact: Explorations in Ecocritical Theory and Practice*, ed. Annie Merrill Ingram et al. (Athens, GA: University of Georgia Press, 2007), 221.
- 102 Ibid.
- 103 Wylie, *Road Work*, 82.
- 104 See Lyell’s *Principles of Geology*, 666–78, and Darwin’s reference to these influences while observing the glacial history of Patagonia (*Voyage of the Beagle*, 120).
- 105 Wylie, *Road Work*, 82.
- 106 Robert Berold, *The Fires of the Dead* (Cape Town: Carrefour, 1989), 48.
- 107 William Rueckert, “Literature and Ecology: An Experiment in Ecocriticism,” in *The Ecocriticism Reader: Landmarks in Literary Ecology*, ed. Cheryl Glotfelty and Harold Fromm (Athens, GA: University of Georgia Press, 1996), 121.
- 108 O’Brien, “Back to the World,” 178, 196.
- 109 See William Beinart, *The Rise of Conservation in South Africa: Settlers, Livestock, and the Environment 1770–1950* (Oxford: Oxford University Press, 2003), 83–86; and S. H. Haughton, “South African Geology,” in *A History of Scientific Endeavour in South Africa*, ed. A. C. Brown (Cape Town: Royal Society of South Africa, 1977), 339–56.
- 110 Al Purdy, *Beyond Remembering: The Collected Poems of Al Purdy*, ed. Al Purdy and Sam Solecki (Madeira Park, BC: Harbour, 2000), 23–24.
- 111 Lyell, *Principles of Geology*, A2.
- 112 McKay, *Strike/Slip*, 7–9. As McKay notes in *Strike/Slip*, “as a noun, *utter* means the irregular marks left on a surface by the vibration or too great pressure of a tool” (76).
- 113 Excerpts from *Strike/Slip* (2006), by Don McKay, reprinted with permission of McClelland & Stewart. Excerpts from *Science Lessons* (1996), by W. H. New, reprinted with permission of Oolichan Press and the author. Excerpts from *Road Work* (1996), by Dan Wylie, reprinted with permission of Echoing Green Press and the author.

The Dwelling Perspective in English-Canadian Drama

Nelson Gray

Portraying our relationship to the more-than-human world is not a new phenomenon in English-Canadian drama. Its first discernible signs can be traced to the 1920s and '30s, when playwrights were beginning to turn their attention to this country's expansive natural environment as an *oikos* or dwelling-place.¹ Since the late 1960s, however, concerns about dwelling have, for the most part, appeared in two forms that, while mutually instructive, reflect different histories and different ontologies. On the one hand, theatre artists such as Michael Cook, Karen Hines, Daniel Brooks, and Blake Brooker, writing in the context of a deepening ecological crisis, have conveyed environmental losses as an attendant loss of self and a profound displacement from the more-than-human world. In the work of First Nations and Métis playwrights such as Tomson Highway, Monique Mojica, and Marie Clements, however, relations with the more-than-human world are, more often than not, identity-forming – part of an Indigenous response to social injustice – and depicted in terms of what Tim Ingold has characterized as a “dwelling perspective.”

Drawing on the philosophy of Heidegger and Merleau-Ponty and on the ecopsychology of James Gibson, Ingold defines a dwelling perspective as one “that treats the immersion of the organism-person in an environment or lifeworld as an inescapable condition of existence.”² For Ingold, this worldview is one that perceives human existence as an organic and relational process, part and parcel of a continual state of becoming. Rather than understanding our experience of the natural world as a decoding of an environment that is “out there,” outside and separate from ourselves, a dwelling perspective situates us, in ecological terms, as “organism-persons within a world that is inhabited by beings of manifold kinds, both human and non-human. Therefore, relations among humans, which we are accustomed to calling ‘social,’ are but a subset of ecological relations”³

Evidence of a dwelling perspective in Canadian drama is not exclusive to dramatic works by First Nations and Métis writers. Two early examples occur in Herman Voaden’s *Murder Pattern* (1936) and James Reaney’s *Colours in the Dark* (1967) – plays in which action emerges within an unfolding physical world that is active, alive, and replete with diverse non-human agencies. In *Murder Pattern*, for instance, Voaden includes, in addition to his human characters, two “Earth Voices” that speak from the perspective of the more-than-human world, placing emphasis on its geological processes and situating the story of a murder in an isolated farming community within this larger field of activity.⁴ Similarly, in *Colours in the Dark*, a story involving human characters and actions takes shape as part of a continually forming generative force that includes a wide range of life forms and phenomena. At the start of the play, the emphasis is on a human-centred narrative, with a grandfather (Pa) setting out to tell his children and grandchildren about his life’s journey from boyhood to maturity. As the story unfolds, however, the audience soon comes to see that this journey is part of a world comprised of bears and forests, wind and thunder, and of the physical cosmos as a whole. “*Dimly we realize*,” Reaney writes in his stage directions, “*that not only are we going through the hero’s life and stories he heard as a child, but we are going through Canada’s story – glacier and forest, also the world’s story.*”⁵

The world of non-human nature that eventually emerges in *Colours in the Dark*, however, is noticeably more fragile than the one Voaden depicts in *Murder Pattern*. In the mid-1930s, Voaden was writing from the perspective of a European settler culture's confrontations with what George Grant called the "intractability" of nature in the "New World."⁶ Influenced by Walt Whitman's pantheism and by the landscape paintings of the Group of Seven,⁷ he portrayed his "Earth Voices" as omniscient, invincible forces that surpassed human understanding. Thirty years later, when Reaney was writing *Colours in the Dark*, nature's "intractability" had been overshadowed by powerful technologies. As the historian Donald Worster notes, the detonation of atomic bombs in 1945 and in tests during the Cold War confronted humankind with its capacity for destroying both human lives and natural systems on a scale never before deemed possible, and the rapid industrialization that followed in the wake of the Second World War resulted in a disturbing legacy of unprecedented environmental damage.⁸ In *Colours in the Dark*, the signs of a natural environment under duress arise when Reaney's protagonist travels from his rural home to Toronto, sees the pavement as a "cement tapeworm," and curses the "street where it's increasingly difficult to find a green leaf." At one point, he is stopped in his tracks by a dead bird on the sidewalk: "An indigo bunting. Total blue." "Do you know who it is?" he asks a group of children; "It's the body of someone slowly freezing to death – frozen to / Death with the hard heart and deaf ear that will not listen." "Is the dead bird you?" the children ask. "It's you," he answers, "It's me."⁹ This heightened sensitivity to the death of a single songbird, with its recognition that nature's frailty bespeaks our own, is in direct contrast to Voaden's depiction of a vast, sublime natural world, seemingly impervious to human activity.

Since the late 1960s, recognitions of nature's frailty have occurred with increasing frequency in English-Canadian plays, and in many of these works such recognitions are integral to the action. Plays such as Michael Cook's *The Head, Guts and Sound Bone Dance*, Blake Brooker's *The Land, The Animals*, Karen Hines's *The Pochsy Plays*, and Daniel Brooks's *The Eco Show* explore environmental losses as a displacement

from the physical world and a concomitant loss of identity. In Cook's play, it is the loss of the Atlantic cod stocks that is the source of this displacement. "[T]he trouble is the god damn place has died afore us," laments one of his Newfoundland characters; "We can't git that out of our guts, can we?"¹⁰ In *The Pochsy Plays*, *The Land*, *The Animals*, and *The Eco Show*, a wide range of environmental loss is acknowledged. "Call attention to the enemies of water," admonishes Doris, one of the scientists in *The Land*, *The Animals*; "All drains are connected to your throat."¹¹ "We know that our polluted air stunts, sickens and kills children," observes the apocalyptically minded father in *The Eco Show*.¹² "We live in a scary time," Pochsy tells her audience at the beginning of *The Pochsy Plays*; "All indicators point to the distinct possibility that we are a species bent on self-extinction."¹³

Given such dire circumstances, much of the action in each of these plays involves characters' attempts to resolve existential fears arising, not from a loss of faith in some fixed cosmological design, but from something much more material: their own embodied existence as part of a natural world that is polluted and vanishing. Resolutions, however, are in short supply. In *The Head, Guts and Sound Bone Dance*, catharsis is, to some degree, held in suspense by a tragedy of the commons that has exiled two old fishermen in what is, in effect, an ecological version of Beckett's *Endgame*,¹⁴ and in Brooks's *The Eco Show*, a protagonist named "Hamm" endures a similarly Beckettian existence, living with his wife and children amidst the encroaching pressures of a global ecocide. Anxieties over environmental losses remain unresolved as well in *The Land*, *The Animals* and *The Pochsy Plays*. In the former – a play that, according to one of its characters, began as "a scream from the marsh's clogged throat" before turning into a "dark green" comedy¹⁵ – four scientists investigating the suicide of a geologist discover his (and their own) deep estrangement from the natural world; while in *The Pochsy Plays*, Hines assumes the role of Pochsy, a *bouffon*/clown for an ecological age whose attempts to deny her victimization from mercury poisoning lead repeatedly to revelations of a natural world that mirrors her own contamination.¹⁶

In many respects, such portrayals of characters increasingly isolated and removed from the circumambient world are the very inverse of a dwelling perspective. To be sure, if the world of non-human nature has any agency in these plays, it is by virtue of its *absence*, and its human characters can do little it seems but overcome (or not) their denials of this state of affairs, and grieve (or not) for the losses. Moreover, the possibility for acceptance and grieving in these plays is often complicated by the fact that many of these same characters wind up, whether consciously or not, indicting themselves as part of the problem. In Cook's play, the characters faced with the disastrous results of overfishing are themselves fishermen; in Brooks's *The Eco Show*, a family's capitulation to the solace of an air conditioner serves only to exacerbate an already overheated climate.¹⁷ For Campbell, one of the scientists in *The Land, The Animals*, "Science," in addition to being "a map to hell," is "a gold card meat-eater that looks like a man who / Has had his eyelids removed for 'practical purposes,'"¹⁸ and Hines's Pochsy persona is all too ready to embrace the escapist diversions of a commodity culture that has, in effect, contributed to her death sentence.¹⁹ In such plays, then, the portrayal of identity vis-à-vis the natural world is, in almost every respect, abject – the visible evidence of a collective ethos that is as toxic as the environment it has fouled.

For First Nations and Métis playwrights such as Highway, Mojica, and Clements, however, identity – and, in particular, identity seen in relation to the non-human physical world – is far from being abject and is more likely to be affirmed as part of a collective resistance to social and environmental injustice. As in the plays of Voaden and Reaney, a dwelling perspective informs much of the action in these works, but it does so, in large part, as a way of confronting and proposing alternatives to colonizing attitudes toward both Indigenous people and the natural environment.

Colonization, according to the ecofeminist Val Plumwood, occurs not only in acts of territorial expansion but also in the "conceptual strategies" that colonizers adopt to justify their own supremacy: "Since the [colonized] Other is perceived in terms of inferiority, and their own

agency and creation of value are denied, it is [deemed] appropriate that the colonizer imposes his own value, agency and meaning, and that the colonized be made to serve the colonizer as a means to his ends.”²⁰ For Plumwood, the mechanistic view of nature that emerged in Britain and France during the seventeenth century (and that objectified the natural world as mere resource) was a colonization of nature that was then further employed in a colonization of the “New World” that treated both Indigenous people and their lands in this way. The anthropocentric colonization of nature, Plumwood argues, was based on the same conceptual strategies employed for the Eurocentric colonization of people and the natural world, both in the Americas and elsewhere.²¹

Colonizing attitudes of the kind that Plumwood identifies have been present in Canadian drama since the 1606 production of Marc Lescarbot’s *Theatre of Neptune in New France*, a work that, according to Jerry Wasserman, was “the first theatrical script to have been written and produced in what would become Canada”²² and that Anton Wagner, in accordance with several other theatre historians,²³ describes as a work “intending to subdue the hostile natural environment and native peoples to the rule of French imperial civilization.”²⁴ Moreover, from 1606 until the early twentieth century, most of the drama written in this part of the world, when it acknowledges nature in the “New World” at all, either depicts it as a *terra nullius*, available for annexation, or elegizes it as a newly discovered Eden that, along with its noble savages, is doomed to extinction.²⁵ From the perspective of European monarchies and invader/settler populations, such portrayals were convenient fantasies, of course. Territorializing or elegizing a (supposedly vanishing) Indigenous people by conflating them with lands whose agency had been similarly devalued or wished away was, on the one hand, a way to justify the removal of First Nations people from their lands, and, on the other, a way to rationalize the wholesale extraction of resources from the environment with little respect or concern for the consequences.²⁶

For Indigenous peoples in North America, the dislocation from traditional lands that such attitudes justified has been particularly debilitating. As the Cherokee scholar Jace Weaver explains, the loss of lands to

invading settler populations was not only the loss of livelihood, but also – because language and traditions were so closely tied to the land – the loss of a cultural identity informed by a geocentric worldview: “When Natives are removed from their traditional lands, they are robbed of more than territory; they are deprived of numinous landscapes that are central to their faith and their identity, lands populated by their blood relations, ancestors, animals and beings both physical and mythological. A kind of psychic homicide is committed.”²⁷

Weaver’s insights here – his observations that the cultural identity of Indigenous North Americans is inseparable from their dwelling in numinous as well as material landscapes – accord with Tim Ingold’s descriptions of the animist ontology that characterizes First Nations traditions, an ontology that adds ecological resonance to the sociopolitical critiques in plays by Highway, Mojica, and Clements. Ingold points out that the animist belief that human identity forms in a reciprocal and dialogical relationship with other forms of life stems from a view of the world as the perpetual transformation of a “vital force” – “often envisaged as one or several kinds of spirit or soul” – that animates all earthly existence. “The world of this ‘animic’ understanding,” he explains, “is home to innumerable beings whose presence is manifested in this form or that” but that “in order to live must constantly draw upon the vitality of others.” As Ingold puts it, in animist thinking, “[a] complex network of reciprocal interdependence, based on the give and take of substance, care and vital force ... extends throughout the cosmos, linking human, animal and all other forms of life.”²⁸ Like Ingold’s dwelling perspective, then, the animist world is inherently ecological – a perpetual process of becoming within which humans and other “innumerable beings” exist in a web of reciprocity – an ecological community, as it were, comprised of interdependent and ontologically equivalent agencies, both human and non-human.

In the plays of Highway, Mojica, and Clements, this animist/dwelling perspective emerges when First Nations characters, in order to assert their identity and agency, do so vis-à-vis their relationships with agencies and energies in the natural environment. In Highway’s *Aria*, for

instance, an elderly Native grandmother (the Kokum), although “blind,” “deaf,” and sitting in a “ramshackle house,” manages, through her identification with a songbird, to revitalize her spirit and, in a series of transformations, to speak through a number of dramatic personae.²⁹ In one of these transformations, the old woman speaks as a “White Woman,” walking through a cement cityscape, and experiencing the cement and herself as “distinctly separate and apart.”³⁰ By the end of *Aria*, however, the Kokum is able to reassert her own agency as part of a living Earth. “I knew she was alive. / I know Earth is alive,” she proclaims, “I can feel through the soles of / My moving feet ... / Earth. / Nuna. / *Us-ki!*”³¹

Monique Mojica, in *Princess Pocahontas and the Blue Spots*, another play structured as a series of transformations, also draws connections between Indigenous identity and the vitality of the non-human physical world, but she does so in a more overtly political context. In “Transformation #3,” for instance, she writes from the persona of Malinche, the Aztec woman sold into slavery to Spanish forces, who, after becoming Cortés’ mistress, was viewed as a traitor by many of her own people. Mojica’s Malinche, to protest her two-fold mistreatment, wraps a swirl of cloth around her and ascends a pyramid to take on the form of an erupting volcano: “I spit, burn and char the earth.”³² She then transforms again, this time into a myriad of non-human forms, her spirit eventually becoming part of a fecund earth and her voice, the wailing of the desert wind: “I turn to tree whose branches drip bleeding flowers. Bleed into this piece of earth where I grow, mix with volcanic ash and produce fertile soil. Born from the earth, fed with my blood, anything alive here is alive because I stayed alive! I turn to wind. You hear my Llorona’s wail screaming across the desert.”³³

Malinche’s metamorphosis is not the only example of Mojica portraying the transformation of a human character into the more-than-human natural world as a response to a social injustice. In “Transformation 12,” a Native woman and a Chilean-born woman, after sharing stories involving the torture and murder of Mi’kmaq activist Annie Mae Aquash, confirm their solidarity by drawing on the energies of a “Spirit Animal” who appears in the form of a coyote/trickster:

slant-eyed and head swinging low
to the ground
 my muscles ripple
 from shoulder to haunch
 now running – now stopping
 to sniff the air.³⁴

Then, the Chilean-born woman, in her role as a “Spirit-Sister,” speaks from the same voice: “slant-eyed and head swinging / low to the ground / my spine arches from / neck to tail.”³⁵ For Mojica, enacting ancestral traditions in this way is a significant aspect of healing and decolonization and, as in Highway’s *Aria*, doing so conveys an “intangible reality,” an “ethereal and material” world in which both human and non-human subjects participate.³⁶

In several of Marie Clements’ plays, a similarly animist-informed dwelling perspective comes to the fore along with explicit connections between social injustice and a mistreated environment. In her first staged play, *Age of Iron*, a First Nations character named Wise Guy tears up pieces of concrete to free a paved-over “Mother Earth” and then confronts his own “enemies” as those who are responsible for her mistreatment. “You have no such land,” he declares, “because you have covered it with an ungiving surface. You call us barbarians. But that is what we call you.”³⁷ In her second play, *The Girl Who Swam Forever*, a young First Nations woman’s suicide is prevented by a shape-shifting experience that connects her own identity with that of a sturgeon/grandmother lying forgotten in the thick mud of a polluted river.³⁸ And, in *The Unnatural and Accidental Women*, Clements makes links between the racism and misogyny leading to the murders of First Nations women and a deforestation of the land carried out without due respect for “the give and take of nature.”³⁹ *Burning Vision*, Clements’ fourth staged work, makes the relations between poisonous social injustices and the poisoning of the biosphere even more apparent and manages, at the same time, to show their global interconnections. Situating Indigenous land rights in the

context of transnational politics, Clements depicts how mining companies exposed workers and local Indigenous populations to fatal doses of radiation through the extraction of uranium ore that was destined to become the atomic bombs dropped on Japan in 1945. For director and ecocritic Theresa May, Clements' ability to draw connections between the Dene people in northern Canada and the Japanese in Hiroshima constitutes "a transnational countergeography that makes previously invisible relationships explicit and meaningful."⁴⁰ And, as part of this "countergeography," Clements – as in nearly all of her works – takes pains to include a number of subjects from the more-than-human world. One of these is the uranium itself, personified as a naked Indian boy who, after being discovered, claimed, and dug out of the earth, is monstrously transformed into "Little Boy" – the name of the bomb dropped on Hiroshima. Another equally important non-human agency is a herd of ghostly caribou that haunts the "earth space" of the play and expands its multi-ethnic community into an ecological one.⁴¹

The assertion of Indigenous identity and of an ontology that views such identity as part of an ecological community is a consistent and distinguishing feature in the plays of Highway, Mojica, and Clements. But if in such plays the more-than-human physical world has agency as part of a challenge to social and environmental justice, it is not because First Nations and Métis artists are essentially any "closer to nature" than contemporary non-Native playwrights, but because historical conditions in this country have positioned them to situate their postcolonial politics within an image of the world that makes dwelling in reciprocity with the more-than-human world a crucial aspect of what it means to be human. Conversely, the existential anxieties, loss of identity, and displacement from the physical world conveyed by non-Native theatre artists such as Cook, Brooks, Hines, and Brooker deserve to be seen, in light of present ecological challenges, not as the expression of some inescapable destiny, but as a cry of protest for this sorrowful state of affairs and an implicit call for actions that dispense with denials and embrace a more earth-centred perspective. As Lawrence Buell has astutely observed, when it comes to eco-apocalyptic scenarios, "the environmentalist dreams such dreams

precisely in order to render the dream-scenario impotent.”⁴² Karen Hines, in her introduction to *The Pochsy Plays*, says something similar: “my ultimate goal” she writes, “is to create, in the laughter that springs from a shared sense of futility, a persistent glimmer of hope.”⁴³ Speaking in a recent interview about the creation of her Pochsy persona, she reiterates this intention: “the aim,” she explains, “was to create a self-consuming artifact, something that, by virtue of being so profoundly one thing, invites questions about its opposite.”⁴⁴

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NOTES

- 1 Characters who express environmental concerns include a First Nations character named Yellow Snake in the 1922 Hart House production of Carroll Aikins's *The God of Gods*, published in *Canadian Plays from Hart House Theatre*, and a conservation-minded prospector, George Fairburn, in Archibald Key's *The Mother Lode*, published in the 1930 anthology *Six Canadian Plays* (Carroll Aikins, *The God of Gods*, in *Canadian Plays from Hart House Theatre*, ed. Vincent Massey [Toronto: Macmillan, 1926]; Archibald F. Key, *The Mother Lode*, in *Six Canadian Plays*, ed. Herman Voaden [Toronto: Copp Clark, 1920], 25–47).
- 2 Tim Ingold, *The Perception of the Environment: Essays on Livelihood, Dwelling, and Skill* (London: Routledge, 2000), 153.
- 3 *Ibid.*, 5.
- 4 Herman Voaden, *Murder Pattern*, in *A Vision of Canada*, ed. Anton Wagner (Toronto: Simon and Pierre, 1993), 317–42.
- 5 James Reaney, *Colours in the Dark* (Vancouver: Talonplays, 1971), 19.
- 6 In *Technology and Empire*, Grant writes that “the very intractability, immensity and extremes of the new land required that its meeting with mastering Europeans be a battle of subjugation” (George Parkin Grant, *Technology and Empire: Perspectives on North America* [Toronto: Anansi, 1969], 17).
- 7 In his introduction to *Six Canadian Plays*, Voaden makes two references to the paintings of the Group of Seven as models for Canadian playwrights (Herman Voaden, Introduction to *Six Canadian Plays*, ed. Herman Voaden [Toronto: Copp Clark, 1930], xix, xxi) and pays homage to Whitman as “the most definite inspiration in the movement of Canadianism up to this time” (xvi). For Voaden's identification with Whitman's pantheist beliefs, see Herman Voaden, *A Vision of Canada*, ed. Anton Wagner (Toronto: Simon and Pierre, 1993), 314.
- 8 Donald Worster, *Nature's Economy: A History of Ecological Ideas* (Cambridge: Cambridge University Press, 1994), 342–60.
- 9 Reaney, *Colours in the Dark*, 73.
- 10 Michael Cook, *The Head, Guts and Sound Bone Dance* (Portugal Cove, NL: Breakwater, 1974), 48.
- 11 Blake Brooker, *The Land, The Animals*, in *Ilsa, Queen of the Nazi Love Camp and Other Plays* (Red Deer, AB: Red Deer College Press, 1993), 114.
- 12 Daniel Brooks, “*The Eco Show*,” *Canadian Theatre Review* 144 (fall 2010): 60–84.
- 13 Karen Hines, *The Pochsy Plays* [1st ed.] (Toronto: Coach House, 2004), 25.
- 14 In an interview with Robert Wallace, Cook refers to Beckett as his greatest influence (Michael Cook, interview, *The Work: Conversations with English-Canadian Playwrights*, ed. Robert Wallace and Cynthia Zimmerman [Toronto: Coach House, 1982], 165). At one point in *The Head, Guts and Sound Bone Dance*, Uncle John, one of two disillusioned fishermen, describes their plight as a “death game.”
- 15 Brooker, *The Land, The Animals*, 75.
- 16 In *Oh, Baby*, the second play in the Pochsy trilogy, Pochsy's acceptance of a paid seaside holiday from her employers at Mercury Packers brings her into contact with a sun that threatens her with skin cancer, fish dying from the same toxins as the ones in her body, and a sight-seeing excursion where the only sea turtles she encounters are the ones on the company's shiny brochure (Hines, *Pochsy Plays*, 59, 82, 64).

- 17 Brooks, *Eco Show*, 62.
- 18 Brooker, *The Land, The Animals*, 78.
- 19 Celeste Derkson considers this complicity in some detail in “Complexion as Metaphor: Eco-Satire in *The Pochsy Plays*” (*Canadian Theatre Review* 144 [fall 2010]: 35–41).
- 20 Val Plumwood, “Decolonizing Relationships with Nature,” in *Decolonizing Nature: Strategies for Conservation in a Post-Colonial Era*, ed. William H. Adams and Martin Mulligan (London: Earthscan, 2003), 59.
- 21 Plumwood, *Decolonizing Nature*, 53.
- 22 Jerry Wasserman, *Spectacle of Empire: Marc Lescarbot’s Theatre of Neptune in New France* (Vancouver: Talonbooks, 2006), 16.
- 23 See also *ibid.*, 13–14; Hannah Fournier, “Lescarbot’s ‘Théâtre de Neptune’: New World Pageant, Old World Polemic,” *Canadian Drama* 7, no. 1 (1981): 4; Eugene Benson and L. W. Conolly, *English-Canadian Theatre* (Toronto: Oxford University Press, 1987), 42; and Rick Bower, “The Theatre of Neptune: Marc Lescarbot and the New World Masque,” *Canadian Drama* 15, no. 1 (spring 1994): 42.
- 24 Anton Wagner, *Lost Canadian Plays*, vol. 4 (Toronto: CTR Publications, 1982), 7.
- 25 For examples of eighteenth- and nineteenth-century plays in which land is configured as territory see George Cockings’s *The Conquest of Canada* (London, 1766), Antoine Gérin-Lajoie’s *The Young Latour* (1844; in *Canada’s Lost Plays*, vol. 4, *Colonial Quebec: French-Canadian Drama, 1606 to 1966*, ed. Anton Wagner [Toronto: CTR Publications, 1982], 111–39), Louis Fréchette’s *Papineau* (1880; in *Canada’s Lost Plays*, vol. 4, *Colonial Quebec: French-Canadian Drama, 1606 to 1966*, ed. Anton Wagner [Toronto: CTR Publications, 1982], 141–202), and Sarah Curzon’s *Laura Secord, The Heroine of 1812* (in *Canada’s Lost Plays*, vol. 4, *Colonial Quebec: French-Canadian Drama, 1606 to 1966*, ed. Anton Wagner [Toronto: CTR Publications, 1982], 92–139).
- 26 Two recent studies of European fictional constructions of Native North Americans are Tim Fulford’s *Romantic Indians: Native Americans, British Literature, and Transatlantic Culture, 1756–1830* (Oxford: Oxford University Press, 2006) and Kevin Hutchings’s *Romantic Ecologies and Colonial Cultures in the British Atlantic World, 1770–1850* (Montreal: McGill-Queen’s University Press, 2009). See also H. N. Fairchild’s *The Noble Savage: A Study in Romantic Naturalism* (New York: Columbia University Press, 1928), Brian Dippie’s *The Vanishing American: White Attitudes and U.S. Indian Policy* (Middletown, CT: Wesleyan University Press, 1982), and the introduction to Shepard Krech’s *The Ecological Indian: Myth and History* (New York: Norton, 1999).
- 27 Jace Weaver, *That the People Might Live: Native American Literatures and Native American Community* (New York: Oxford University Press, 1997), 38.
- 28 Ingold, *Perception of the Environment*, 113.
- 29 Tomson Highway, *Aria*, in *Staging Coyote’s Dream*, ed. Monique Mojica and Ric Knowles, vol. 1 (Toronto: Playwrights Canada Press, 2003), 81.
- 30 *Ibid.*, 89.
- 31 *Ibid.*, 96.
- 32 Monique Mojica, *Princess Pocahontas and the Blue Spots*, in *Staging Coyote’s Dream*, ed. Monique Mojica and Ric Knowles, vol. 1 (Toronto: Playwrights Canada Press, 2003), 144.
- 33 *Ibid.*, 144.
- 34 *Ibid.*, 165.
- 35 *Ibid.*, 167.
- 36 *Ibid.*, iii–viii.

- 37 Marie Humber Clements, *Age of Iron*, in *DraMétis: Three Métis Plays*, ed. Greg Daniels, Marie Clements, and Margo Kane (Penticton, BC: Theytus, 2001), 202.
- 38 Marie Humber Clements, *The Girl Who Swam Forever*, in *Footpaths and Bridges*, ed. Shirley A. Huston-Findley and Rebecca Howard (Ann Arbor: University of Michigan Press, 2008), 51–70. See Nelson Gray, “The Murmuring-in-Between: Eco-centric Politics in *The Girl Who Swam Forever*,” *Theatre Research in Canada* 31, no. 2 (2010): 193–207.
- 39 Marie Humber Clements, *The Unnatural and Accidental Women* (Vancouver: Talonbooks, 2005), 470.
- 40 Theresa May, “Kneading Marie Clements’ *Burning Vision*,” *Canadian Theatre Review* 144 (fall 2010): 7.
- 41 Marie Humber Clements, *Burning Vision* (Vancouver: Talonbooks, 2003). For an explanation of the material and spiritual significance of the caribou for the Dene people, see Henry S. Sharp, *Loon: Memory, Meaning, and Reality in a Northern Dene Community* (Lincoln: University of Nebraska Press, 2001).
- 42 Lawrence Buell, *The Future of Environmental Criticism: Environmental Crisis and Literary Imagination* (Malden, MA: Blackwell, 2005), 59.
- 43 Karen Hines, *Pochsy Plays*, 15.
- 44 Karen Hines, “Yes to Everything: A Conversation on Theatre and Ecology with Daniel Brooks, Marie Clements, Kendra Fanconi, and Karen Hines,” *Canadian Theatre Review* 144 (fall 2010): 27.