

ENGAGED SUSTAINABLE DESIGN: CREATING MORAL AGENCY

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ABSTRACT

This paper integrates my journeys into the wilderness of northern British Columbia and the Alberta Prairies with my reflections on the relationship of sustainable design theories with an ethical practice of sustainable design. Drawing on deep ecology, eco-psychology, Buddhism, and animism, I contend that the drive within research to connect natural systems theories to design practice is inherently instrumental and eludes the truths of the natural world. Within the domain of sustainable design, this instrumentalism reinforces an anthropocentric worldview that, as humans, we are separate from and more important than the unboundaried ecology of animals, plants, minerals and elementals (earth, water, air, and fire). As designers, we have not yet reconciled our responsibility for a comprehensive philosophical approach to our work with a deep and abiding relationship with nature.

KEYWORDS: SUSTAINABLE DESIGN; DEEP ECOLOGY; SPIRITUALITY; MORAL AGENCY

INTRODUCTION

Recently, I gave myself permission to be irrelevant: irrelevant to my institutional and disciplinary discourses and practices. Reflecting on my twenty year quest to research and advance sustainable design, I realized I had not engaged with my most important questions. Despite my commitment to the agency of design, the strategies I had been pursuing were not fulfilling their ecological promise. I took a pause. Given the bracketed time frame of a five-month sabbatical, I shifted my focus from my everyday activities of coordinating elements of design, sustainability, and education. This pause, while relatively short, became transformational as well as necessary. I gained the spaciousness to move beyond institutional imperatives of mind and discipline to the embodied imperatives of heart and yearning.

My journeys took me to places that were local, yet well outside of my comfort zone: a gas refinery in central Alberta, an Aboriginal community in northern British Columbia, and a cedar tree on the Northwest Pacific coast. First, in central Alberta, my friend Claude told me of his work in a gas refinery; his story of the process of isolating a molecule initiated a deeper inquiry into ecology and systems, resonant with images of art. My second journey was inspired by a longing to understand the connection to nature found in many Indigenous traditions. This quest took me to the Unist'ot'en First Nations community to learn from elders and hereditary chiefs. The third phase of my journey emerged naturally as an exploration of contemplative traditions that challenge the Western notion of individual self with a spiritual sense of interbeing. These three ecological, philosophical and spiritual stories are deeply intertwined and, in fact, inseparable.

Somewhere and someplace in those short months, I realized that I had travelled far enough to cross a line, to drop a stitch, and to fall into the realization that a designer's engagement with nature and natural systems might not lead to direct, applied, and practical outcomes. Maybe that is the point. My research into natural systems, including interdependence and resilience theory, has hitherto been driven by the underlying pursuit: "I must figure out how to apply this." I question that now. Maybe this seeking and this outcome orientation is, in itself, a part of the problem. The DNA of the designer drives us to operationalize our insights. This impetus fosters instrumental research that can rush us past some key spiritual understandings that might better inform the work that we do. Choosing the most immediate and direct path can also result in misguided approaches to sustainability. Even when considering natural systems and sustainable design, the search for applicable knowledge locks us into established modes of thought and production, and keeps us circling within anthropocentric views. If we begin instead with an ecological view, and stay with that long enough, we might discover new insights and opportunities founded in an innate moral agency.

As designers, we need to know what we can do to help reverse the alarming progression of environmental devastation; there is much that we can and should do. Learning about the natural world is essential. Stepping

outside the boundaries of what we normally consider useful knowledge, I saw that even though I focus on natural systems, solution-based thinking kept me tidily constrained within a techno-scientific and analytic worldview. Until I challenged my own agenda, my work could inadvertently reinforce a Western worldview of separateness, where humans are mistakenly thought to be above and outside of the unboundaried ecology of natural systems. The pause of my sabbatical allowed me to enter other worldviews. I began to understand the gulf between the human-centred world that we have conceived and rationalized, and the natural and unboundaried world that we belong to.

BIOMIMICRY: A CASE STUDY OF INSTRUMENTALISM

The story of biomimicry illustrates how easily natural system theories become compromised. Like many designers, I was excited when Janine Benyus (1997) first introduced biomimicry to us. Benyus suggested that we find could design solutions by learning from and replicating how nature solves problems. Biomimicry held the allure of connecting design to nature, appealed to our emotional yearning for ecological connectedness, and spoke to our spiritual wish for an ethical practice. These longings continue to resonate within the design community as they are, as yet, unfulfilled.

Benyus (1997), a biologist, originally articulated humanity's interconnection with nature: "Inherent in the phrase 'looking to nature' is the lonely idea that we are not nature – that we're peering in from the outside. But that's not what I believe. I see us as biological organisms, which means we *are* nature. There's no separation" (5). The bulk of biomimicry's information and practice, however, focused on the usefulness of nature's methods to human interests and endeavours.

Using inspiration from nature, well-intentioned designers, biologists, and engineers contributed to biomimetic innovations such as a wall coating that self-cleans like the lotus plant does, antiseptic upholstery inspired by sharkskin, and efficient wind turbines modelled after a whale fin. While many of these innovations may reduce ecological impact to varying degrees, they remain anthropocentric in that their primary purpose is to serve human needs. Some design innovations like Velcro are biomimetic in function, but not in their material composition and material life cycle. They do not merge with or support natural systems. Biomimicry applied to human problems instrumentalizes nature by using its ideas as well as its resources. This continues to reinforce "quick technical fixes and ... business as usual without any deep value questioning or long-range changes in practices" (Drengson 2010: 26). Contemporary Western industry is all too ready to use biomimetic techniques superficially.

We can see through the deconstruction of biomimicry that it is not only the application of theory that is

anthropocentric. Anthropocentrism is embedded in the articulation of the theories themselves. Given their focus on solving human problems, they are easily applied to short-range and immediate goals without questioning humanity's place in nature. These theories encourage "mimicry" of the biological world without entering deeply into our connection with it. They remain discursive rather than immersive, distant rather than intimate.

There is value in incremental ecological attunement of manufactured goods, but it is difficult to get past a sense of disappointment, even betrayal, over our deeper concerns. Designers thought biomimicry might meaningfully engage design with nature, but biomimicry cannot get past the first lens that it offered: a limited focus that does not connect to the inexorable and overwhelming power and magic of nature's systems. As a result, we are still "peering in from the outside" (Benyus 1997: 5), while natural cycles implode, collapse and unravel around us.

THE ETHYLENE GLYCOL MOLECULE: A CASE STUDY OF DIS-CONNECTION

What happens if we come closer to the natural world as it is, in every moment and every breath that we take? What happens if we focus on the microscopic, the molecule, and follow it through moments of transformation around Earth? Does this help us to embrace and understand the incessant flow of macro cycles?

Western culture relegates conversation about the natural world to sentiment, stridency, or entertainment, with little discussion of a meaningful relationship with it. We remain unaware of the how what we do in our daily lives impacts the cycles of the natural world. My encounter with a specific natural cycle began in conversation with my friend Claude, a steam engineer in Alberta. "So," I said, "Tell me. What is it that you do there?"

The story begins with an ethylene glycol molecule that is isolated in a natural gas refinery in central Alberta. This refinery emits plumes of *smog* from its gothic spires while a low, setting sun sends long shadows across a wide expanse of Canadian prairie. A steady stream of railcars sit waiting to be filled every hour with compounds labelled hazardous, ready for shipping across rails and bridges that were built at the turn of the last century, en route to offshore processors. Alberta is well known for its controversial oil sands, and has extensive reserves of natural gas. To isolate ethylene glycol, natural gas is first cooled to release propane and butane, which is diverted to other industries like the one that supplies my gas barbecue, or those that make polypropylene. Cryogenic cooling then strips off the methane, which is burned to heat Canadian homes during treacherous -40° Celsius winters. Ethane is left behind to be treated through a 'cracker process,' in

which ultra-high temperature steam (800-900° C) is used to break down particles. The sequence of steps that dilute, heat, cool, and distill the ethane to separate, remove, or add molecules results in very precise chemical formulations of ethylene glycol (ethane-1,2-diol).

Ethylene glycol flows constantly to Asia, to be used in manufacturing saturated polyester (ME Global 2015). If you were around when it became widespread in the '70s, you'll remember the polyester suit. Today polyester is everywhere: ropes, balloons, luggage, hoses, outdoor gear, upholstery, thread, belts, tents, paint, and PET water bottles.

The Great Pacific garbage patch contains products made from polyester and a host of other plastics. There are five subtropical gyres like this in our oceans. Remote currents collect and concentrate plastic debris that congeals in a soupy mass that extends miles below the ocean's surface. Midway Atoll is in the midst of one such place. It is an isolated island halfway between North America and Japan, whose shores are awash with discarded plastic products (Pacific Voyagers 2015).

Artist Chris Jordan (2014) has been documenting the effects of plastic debris on the Laysan, Black-Footed, and Short-Tailed Albatross populations. The albatross spends much of its long life coasting wind currents over the ocean, sometimes not touching land for a five-year stretch. On islands like the Midway Atoll, they mistake plastic debris for food, and feed it to their chicks. Each year, almost 2000 out of 5000 mating pairs watch their chicks slowly die of starvation because plastic perforates their stomachs or blocks their esophagi or gizzards and leaves them unable to eat (Pacific Voyagers 2015). Jordan's photographs depict the carcasses of dead birds with an archive of domestic banality in their stomach cavities: blue, pink, and orange bottle caps, bag clasps, backpack clips, cup hooks, hair combs, hose clamps, backpack tethers, gaskets, slip-on feet from kitchen chairs, rifle shells, sailing cleats, mounting brackets, lighters, washers, salt shaker caps, water pistols, toys, tampon applicators, grommets, pens, blue filament netting, tubing, gears, knobs, knife handles, vial plugs, pen cartridges, buttons, balls, and buckles.

The progress of the molecule from the refinery to distant processing plants, then to other production facilities to be moulded into bottle caps to be used for 10 minutes, to garbage drifting into Pacific gyre to be ultimately fed to albatross chicks describes only part of a cycle of nature that is distorted by human intervention. The cycle continues with the ongoing breakdown of the plastic into particles that can find their way into food systems (Rochman et. al. 2013), and are even found in the best German beers (Liebezeit & Liebezeit 2014). These events remain remote from everyday design and personal experience. As a result of this "spatial diffusion," most of us in modern Western culture can't connect with the consequences of our choices (Worthy

2013: 60). Kenneth Worthy (2013) describes this as pathology: "...the very structure of the modern world, the way that its elements are divided and separated—dissociated—drives our ecological crisis" (21). We are disconnected from how our every decision resonates in distant lands, imprints our backyards, and undermines our best intentions.

In conversation with my Dharma teacher, B. Lloyd, we inscribe how this narrative connects to me, and is integral to my place on Earth. "The telling of this story is from neither the perspective of the systematic engineering that distills the glycol molecule nor the design process that shapes it. Most importantly, my access to this story comes from listening to those who live and work within the moments of its transformation from nature to artifice. I know it from the art of those who document its dark progress: the photographs of the albatross, and images of garbage atolls in our oceans. I also know it from my connection to the land that gives rise to it and to the plastic it becomes. I acknowledge that I am not separate from its original nature nor from its final use. I understand I am implicated in both the process and the product." (B. Lloyd, personal communication, April 4, 2015)

FIRST NATION'S WISDOM: A CASE STUDY OF DEEP ECOLOGY

I was still seeking. What does it mean to get closer to nature? Who could I learn from? Who had gone before me on this path?

Arne Naess, founder of the 1973 deep ecology movement, was an influential philosopher and deep ecologist. The wilds of Norway provided the roots of Naess' eco-centric vision and inspired his writings. The deep ecology movement drew attention to the anthropocentric values that pervade modern thinking. Deep ecology theory began to undermine the hierarchical relationship that Western society imagines with nature by proposing, among others, the principle of "biospherical egalitarianism", which declares equal rights for all life forms (Naess, 1973).

Naess (1988; 2010) also proposed the concept of the *ecological self*: a non-egoistic identity that evolves out of an expanded sense of self in the world. He describes an incident during a scientific experiment where a flea landed in acid on a petri dish. Unable to save the flea, he watched through the microscope as it took many minutes to die: "The tiny being's movements were dreadfully expressive. Naturally, I felt a painful sense of compassion and empathy. But the empathy was *not* basic. Rather, it was a process of identification: I saw myself in the flea" (83-84). Naess (1988; 2010) proposes that the ecological self arises from this empathic identification with "all living beings, beautiful or ugly, big or small, sentient or not" (81). Naess (1993; 2010) proposed that our ecological self is innately ethical. His writings refer frequently to Kant's theories

of moral acts and beautiful acts, summarizing that a moral act is motivated by duty, while beautiful acts spring easily from natural desires.

For many indigenous communities, such as those of northern British Columbia, identification with other creatures encompasses the entirety of the animate and inanimate constituents of a local bioregion. My journey 780 km into northern British Columbia took me to several of these bioregions, each a realm of its own, and different from cosmopolitan Vancouver. The welcome from small town strangers connected me to a world that is in touch with community. Casual conversation affirmed connection to natural systems via regular updates about the progress of the summer's salmon migration: "I hear they've made it to the Kitimat river, should be near Hazelton within the week." Camping in fragrant parks, I lay awake one night chilled by the howling of wolves, only to learn the next day that they were loons. I was crushed by my lack of wilderness savvy.

One day, I travelled down a dusty logging road along the Widzin Kwa (Morice river) to visit the Unist'ot'en protest camp on unceded Wet'suwet'en territory. The camp is situated in the path of the Pacific Trails Pipeline, with the intent of blocking oil and gas pipeline development in northern British Columbia (Unist'ot'en 2015). The camp is part of a groundswell movement to reclaim a land-based way of life for Indigenous communities that have been displaced by colonization. I encountered warmth, acceptance and, for a short time, a profound sense of inclusion in culture that was steeped in land-based faith.

The community has built new lodgings that include a traditional pithouse sunk into the ground and covered with earth. They are affirming ancient teachings for their children. Hereditary chief Dini Ze Toghestiy told a small gathering of guests about the ancestral history of this piece of land. His quiet words carried power because they were told to us *in place*. He could point to the river that provided our water, to the island from which his grandfather had been displaced, and with a sweep of his arm could indicate the range of the creatures that had sustained his people over millennia.

According to Grim (2006), land and identity are intertwined for many indigenous people: "In all settings indigenous knowledge is directly related to the natural world... Thus to talk about indigenous religions traditions it is necessary to situate them in their lived communities, or lifeways." (284, 286). Many of British Columbia's First Nations people identify directly with the land and all creatures. Jeannette Armstrong (1995) writes that the Okanagan cannot imagine being removed from the land; to leave it is to go "insane" (319). Place is "...to experience our humanness in relation to all else and in consequence to know how we affect the world around us" (Armstrong 1995: 323). Although I was limited to being an observer, I was able to share a First

Nations experience in a place of meaning. It was a profound moment that carries me forward.

CONVERSATION WITH A TREE: A CASE STUDY IN NON-SELF

What does it mean to connect to the more-than-human world? Is this knowledge the domain of shamans, priests, or those blessed with heightened awareness? Or is it something than any one of us could access and understand?

Naess described the ecological self as an expanded sense of self. For him, there was still an 'other' in the more than human world. For many First Nations people, the other is so close as to share one skin (Armstrong 1995: 320). Animists and Buddhists continue to blur the boundary between self and other. The concept of "non-self" arises from the understanding that there is no *separate* "self," no "self" that can exist independently, without the support of the natural world or the social world. "This is because that is," (Hahn 2007: 279) reminds us that, individually and collectively, our actions have consequences for all beings, animal, plant, or mineral.

According to animists, "the whole universe is alive, which includes rocks, air, water, and so on" (Bai 2013). Priscilla Stuckey describes the nonverbal communication she had with a birch tree. Taken aback by this experience, she questioned herself relentlessly before finally accepting that the tree had communicated to her, and on its own terms. She goes on to realize the sense of connectedness that comes from accepting this possibility: "To consider seriously the possibility of being known by a birch tree is to begin to step down from the lonely pedestal of knowing, which keeps (modern) humans at the center of every story, always superior to and removed from all other beings" (Stuckey 2010:187).

Philosopher David Abram (2010) suggests that this non-verbal communication with the inanimate world is an instinctive mode for young children before they are educated according to Western views. Additionally, he notes that manufactured objects are also potentially animate beings. A tree can communicate with us, and so can a table. According to Abram, this is an embodied communication, situated in haptic, intuitive, sensuous physical space.

This is no surprise to many Buddhists. The Vietnamese Zen master Thich Nhat Hahn, asserts that there is intelligence in all of the universe. A tree has specific knowledge; this knowledge is contained in the tree's way of knowing, not a human way of knowing (Hahn 2013). Further, we are not only interconnected, we 'inter-are'. Hahn's use of the term *interbeing* shifts awareness of interdependence. Interbeing carries a poetic sense of life in the present moment (Hahn 2006). Where interdependence can happen somewhere else, at another time, it is only possible to inter-be *right now*. Interdependence can describe the passage of plastic

particles to California beaches (Wright et.al. 2013) or into German beer (Liebezeit & Liebezeit 2014), in what might sound like a mechanistic interplay of forces. But to inter-be is to acknowledge in this very breathing moment, I share the energy of life on Earth with all other beings. It is a fluid and constant existence: “The water in our flesh, our bones, and all the microscopic cells inside our bodies all come from the Earth and are part of the Earth. The Earth is not just the environment we live in. We are the Earth and we are always carrying her within us” (Hahn 2013: 8). Seen with the eyes of Buddhist wisdom, the bottle caps are me, just as the albatross is me. The birch tree is me.

Naess discusses the ecological self in terms of wisdom, maturity, and fulfilment. It is a way of being in the world where ethical behaviour is intrinsic and spontaneous. Hahn (2013) goes further; he believes that the awareness that leads to loving Earth equates to enlightenment: “This awakening is enlightenment. Don’t look for enlightenment elsewhere” (27).

Deep ecology, aboriginal wisdom, animism, and Buddhism describe a spectrum of empathy, intimacy, and resonance with the more than human world. They are all ecocentric and deeply spiritual. They challenge us to cross “a border separating a modern Western worldview from alternatives” (Stuckey 2010: 184). They challenge designers and researchers to seek ways to reconcile with the natural world, rather than focusing simply on ways to make our human existence more ecologically benign.

I am alone in a deep West Coast forest, here to follow the request of a Unist’ot’en elder to please (please) have a conversation with a tree before I leave. First I sit cross-legged on the ground, but it just doesn’t feel right. I move to lie down on a fallen log that is softened with years of moss; it sinks slightly with my weight, and I look up through the feathery branches of a cedar and take a deep breath: “I don’t know how to talk to you, but I am here to try.” And I wait. Within the briefest of moments, I feel rather than hear the response, as clearly as if it had been spoken: “I am here.” It satisfies me deeply.

To be here is to pause. I paused then and today, from my relentless, restless tinkering and striving to make my thoughts useful. For the past 20 years, I have directed my energy into finding applicable techniques for designers. The roots of design anthropocentrism can be found in this desire to fit all acquired knowledge into places that we imagine are relevant to our work, progress, and needs. So long as my efforts were geared to finding applications for human existence, I could not shift from deeply entrenched anthropocentric views. In the end, looking for wisdom outside of my ‘purposeful’ life, I found myself in a Buddhist retreat, pausing, listening, with no particular purpose:

“Breathing in, I know that I am of the earth.
Breathing out, I know that this same earth is in
my fellow beings, animals, and the objects

around me... the tables, the walls and the windows. Breathing in, I know we are all of the same earth. Breathing out, I share this earth.”
(Ciborski 2014)

So I circle around these stories: the albatross, the tree in the forest, the theories of Naess, Worthy, Bai, Abram and others, and I notice my urge to relate them meaningfully to the work that designers do. The impulse is hard to control, but the point of this paper is to simply make that clear. In my desire to render insights applicable and relevant, I participate in instrumentalizing them for an anthropocentric world. The arc of my story points to how deep the undercurrents of anthropocentrism run in even the most well-intentioned sustainable designer. Our sustainable design philosophies do not yet describe a meaningful relationship with nature.

FINDING A PATH: FOSTERING THE MORAL AGENCY OF DESIGN

It was necessary for me to literally go off the path in order to fully explore the interconnections between deep ecology, philosophy, and spirituality. Returning to my work as an educator, researcher, and designer, I found myself wishing that others could gain these insights without such sequestration. Is there a way to shift our engagement with design day by day? Can we alter the tone and tenor of our disciplinary imperatives?

There was a time when the spiritual insights of my ecological and philosophical journey might have conjoined more easily with design. I was educated in the 1970s, when designers talked easily about what materials had to say, how form evoked emotion, and about what we felt when we touched an object. Early in my career as an educator, I often asked my students to write poems about the emotive qualities of their design projects. Designers understood our discipline as one that included the intuitive and the analytic, the emotional and the rational. These intentions toward balance are still present, but recent decades of societal momentum that values productivity and reason above heart and emotion have had a huge impact in both design and academia.

In modern Western culture, we grow up being schooled that emotions are to be kept separate from much of life, most particularly the life of work and the workday (Bai 2012). This division has been particularly felt in design, as we have aligned ourselves to business and technology, learning their language, values, and priorities. Our creative processes have become increasingly constrained by the systematic methodologies we have adopted from the social sciences. Advocates of *design thinking* emphasized the analytic qualities of design in order to gain credibility in business circles; “it was denuded of the mess, the conflict, failure, emotions and looping circularity that is part and parcel of the creative process” (Nussbaum

2011). Today, it is challenging to bring our hearts to our work in a way that encompasses the perspectives of spiritual traditions. Stuart Walker (2014) acknowledges “the essential values these traditions advocate are fundamentally at odds with many of today’s common practices in design” (23).

According to Bai (2012), this separation results in an emotional wounding that limits our moral agency: “To the degree to which we are not awakened to the reality of interdependency and to our unwitting participation in what is happening to the world, and to the degree to which we are not courageous enough to take responsibility for our manner of being in the world, to that degree we are compromised moral agents.” She clarifies that environmental problems are not out there, to be solved, but are problems of humanity: the way that we are in relationship to ourselves, each other, and all matter on Earth. The environmental problem is not a problem out there to be solved, but is inside each individual as a “moral, cultural, and spiritual problem” (Bai 2012). Only by leaving my disciplinary imperatives was I able to remember this for myself.

There are opportunities to bring new insights into our discipline. Meditation practices are now tentatively embraced by many CEOs (Confino 2014a). Their intentions may sound ambiguous at first; Google, for instance, declares that meditation practice is “going to be seen as fitness for the mind” (Tan quoted by Confino 2014b), a notion as instrumental and anthropocentric as any application of biomimicry. Walker (2014) also focuses on the human experience in describing how spirituality will help people understand what it is to be human in a more meaningful way, so that we will value the objects we create, and learn to create more ethically and appropriately. However, from a recent interview with Thich Nhat Hahn, Confino (2014a) observed that “as long as business leaders practice ‘true’ mindfulness, it does not matter if the original intention is triggered by wanting to be more effective at work or to make bigger profits. That is because the practice will fundamentally change their perspective on life as it naturally opens hearts to greater compassion and develops the desire to end the suffering of others.” Tan and Walker are opening the possibility for acceptance of alternative views and practices that could ultimately lead beyond seeking human self-satisfaction, to a holistic and non-anthropocentric worldview that celebrates interbeing.

To build on this momentum, we can take inspiration from First Nations, Buddhist, and other wisdom traditions to bring new rituals and practices into the design process. At a recent conference, hereditary chief Dini Ze Toghestiy (2015) noted that ceremony brings meaning to life, and reminded us: “You need your own ceremonies.” From the simple Buddhist practice of putting two hands together in *gassho* to unite body and mind, to First Nations greetings that affirm heart-centred intentions, and Joanna Macy’s (2007; Macy & Johnstone 2012) Buddhist-inspired rituals for environmentalists, there are abundant resources to

inspire new ceremonies. Ceremonies invite reflection by offering a moment of pause, again and again. Ritual and ceremony are known as *form* in Buddhist practice, referring to the shape and pacing of moments of ritual, pause, and noticing. These forms provide a container for seeing things anew and supporting us when we feel uncertain about who and where we are. *Let us bring this to our daily work.*

The ecological, philosophical, and spiritual are fully entwined and knitted. They “inter-are”. What I encountered on my journey is an understanding that we need to recognize our humanness as indivisible from all that is life on Earth. By bringing sincere and well founded spiritual rituals and practices into design, we can mend the gap we have allowed between work and life, mind and heart. Spirituality can do more than serve a deep and rich and meaningful human existence. It can help us embrace our full engagement with unboundaried life on Earth. It is from this place of deep wisdom that we can find our moral agency.

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