EDUCATIONAL THEORY

CONNECTIVITY THINKING, ANIMISM, AND THE PURSUIT OF LIVELINESS

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Abstract. In this essay, Deborah Bird Rose takes up Val Plumwood's challenge that Western thought needs radical revitalization by pursuing the liveliness of the biosphere and human ontologies of connectivity. The first part looks at obstacles to the West's understanding of Earth as a place of lively, interactive connectivities that promote diversity, complexity, and relationality. In this context Rose offers a brief overview of Indigenous animisms. The second part explores the question of liveliness. It is taken as given that the West now seeks ontological legitimacy in science, and so this discussion focuses on what biological scientists have contributed to contemporary ontology wars. The third part examines trauma in the Garden of Eden narrative, highlighting both the disaster of the story and its continuing relevance. Drawing on the work of theologians, in particular, Rose seeks in this section to recuperate a mythic foundation for a Western animism from within that great site of loss.

Paths of Becoming, as Humans within the Biosphere

> If our species does not survive the ecological crisis, it will probably be due to our failure to imagine and work out new ways to live with the earth, to rework ourselves and our high energy, high-consumption, and hyper-instrumental societies adaptively. … The time of *Homo reflectus*, the self-critical and self-revising one, has surely come. *Homo faber*, the thoughtless tinkerer, is clearly not going to make it. We will go onwards in a different mode of humanity, or not at all.[1]

Val Plumwood, one of the great environmental philosophers of the century, identified an oppositional structure between two sides of the human creature. In doing so, she replicated the West's mind-body dualism — reflection vs. action. Her distinction is good to think with, and I will return to it later in a wildly different context, but it should not be thought that all people in all times and places have lived within the context of this split. All humans everywhere act and reflect, but not all are embedded in the culture of dualisms Plumwood articulates. The humanity referred to here is primarily Western; it is powerful and it imposes its thought and action across the whole biosphere. For these reasons, among others, it commands our attention.

Plumwood contends that Western thought needs radical revitalization. In this essay, I take up that challenge by pursuing the liveliness of the biosphere and human ontologies of connectivity. The first part looks at obstacles to the West's understanding of Earth as a place of lively, interactive connectivities that promote diversity, complexity, and relationality. In this context I offer a brief overview of Indigenous animisms. The second part takes up the question of liveliness. It is taken as given that the West now seeks ontological legitimacy in science,

1. Val Plumwood, "Review of Deborah Bird Rose's *Reports from a Wild Country*," *Australian Humanities Review*, no. 42 (2007), http://www.australianhumanitiesreview.org/archive/Issue-August-2007/EcoHumanities/Plumwood02.html.

so my analysis here focuses on what biological scientists have contributed to contemporary ontology wars. The third part examines trauma in the Garden of Eden narrative, highlighting both the disaster of the story and its continuing relevance. Drawing on the work of theologians, in particular, it seeks to recuperate a mythic foundation for a Western animism from within that great site of loss.

Homo faber: Our human capacity to imagine alternatives and to enact them, to make complex tools and to effect far-reaching and complex changes to our surroundings, is more awesome than Plumwood's dismissive term "thoughtless tinkerer" indicates.[2] Much of her great ecofeminist philosophy is dedicated to analyzing the practical methods and cultural constructs of *Homo faber*. She is perfectly willing to point out that this great human capacity has brought much good to the world while at the same time, and not coincidentally, is bringing the whole biosphere to the edge of irremediably damaging change. The contrast between our two modes of capability — the making/doing side and the reflective/ethical side — is meant to highlight the fact that, in our time, *Homo reflectus* almost invariably exercises far less power than *Homo faber* does. We act before we fully understand the consequences and, even as consequences become evident, we most often continue to act as if they were of little significance. In an ethical mode of responsibility, thought is by far the lesser partner to deeds in dynamics of action. In truth, *Homo faber* and *Homo reflectus* do not comprise the full story of human capability; they are but two sides of our larger complexity. The issue is not the number of sides, but rather that *Homo faber* and *Homo reflectus* call for partnership rather than domination.

Homo reflectus: Our human capacity to reflect upon life and death, upon meaning, purpose, and ethics, is a capacity to philosophize both in everyday life and through our grand cultural narratives. Reflective thought never takes place in a vacuum: we humans are symbolic thinkers embedded in cultural narratives and the patterns that subtend them. My focus in this essay is on root metaphors and their myths. A root metaphor identifies a bedrock of meaning: it is a matrix, or story, or set of images, that profoundly configures a sense of truthfulness. Root metaphors and myths are blueprints for the great work of meaning-making; they are cultural and affective modes of recognition and assent. They organize thought and feeling so as to enable an experience of rightness in relation to life and the cosmos.[3]

2. Actual labor itself has fascinating and extremely complex social stories, as we know from influential thinkers such as Karl Marx and Hannah Arendt. I believe Plumwood is more concerned with the conceptualizers of labor, such as engineers and scientists.

3. Sarah Allan, *The Way of Water and Sprouts of Virtue* (Albany: State University of New York Press, 1997).

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Trauma and Truth

Root metaphors are internalized without one's necessarily being aware of them, and form a template by which matters are judged to be true to how life really is. According to Isabelle Stengers, a leading thinker in the field of science studies and in the diagnosis of Western paths of destruction, one of the great root metaphors of Western thought is "traumatic truth." Traumatic (triumphal) truth rests on a logic of division and exclusion, as well as a certain satisfaction associated with the exercise of power: the power to eliminate, and the power to be both victorious and righteous. Our Western cultural matrix finds truth in this sort of violence, a truth known by its purifying, polemical power.[4]

Enormous emotional complexity runs through practices of traumatic truth. As more and more connectivity is cut away, what remains is more precious, more triumphant (for having survived), and more lonely. We can glimpse these forces in Plato's great statement about the soul. In the *Timaeus*, Plato wrote of the distant starry skies: "It is there that true being dwells, without colour or shape, that cannot be touched; reason alone, the soul's pilot, can behold it, and all true knowledge is knowledge thereof."[5] The consolation of philosophy for Plato is to offer meaning that is accessible to man's reason and that transcends all that is finite and subject to change. Two millennia later, the inimitable existential philosopher Lev Shestov wrote that this devotion to the abstract, distant, and eternal denigrated the living world, teaching people "so to 'judge', that heaven and earth, and everything else that came forth from the hands of the Creator, should lose their charm and fascination."[6]

Dualisms and Ecological Challenges

In the intervening millennia, Western philosophers have increasingly understood the human condition as one of great loneliness, with humans isolated in an uncaring cosmos. At the same time, a countercurrent of thought has continued to defend the world's liveliness. For example, shortly before World War II, Shestov wrote that the West's commitment to the traumatic truths of dualism and denigration "would poison the joy of existence and lead men, through terrible and loathsome trails, to the threshold of nothingness."[7] These are powerful words, and alarmingly accurate both then and now.

Plumwood identified one of the key problems of the environmental crisis as the West's cultural pattern of *hyperseparation*. This term identifies dualisms

4. Isabelle Stengers, "Beyond Conversation: The Risks of Peace," in *Process and Difference: Between Cosmological and Poststructuralist Postmodernisms*, ed. Catherine Keller and Anne Daniel (Albany: State University of New York Press, 2002), 244–247.

5. Plato, *Plato's Phaedrus,* trans. Reginald Hackforth (Cambridge: Cambridge University Press, 1997 [1952]), 78.

6. Lev Shestov, *Speculation and Revelation* (New York: Simon and Schuster, 1982), 47.

7. Lev Shestov, *Athens and Jerusalem*, ed. and trans. Bernard Martin (New York: Simon and Schuster, 1968), 180. This book was completed in 1937, and Shestov died in 1938, at age 72.

that are ordered in pairs that oppose each other, and in which one is dominant, the other subordinate. It is a traumatic structure *par excellence*: a structure of exclusion, hierarchy, and power. Western thought works with numerous dualisms that reinforce each other, with the overall effect (not necessarily intention) of naturalizing patterns that are in fact imposed by human intellect. To name just a few: man/woman, mind/matter, culture/nature, reason/emotion, civilized/savage. Separation, opposition, hierarchy, and the necessity of domination prevail. The nature–culture dualism is integral to the ecological crises we now face: humans and nature are held to be radically, oppositionally, different. Humans are held to be superior to all else. This great "all else," everything in the biosphere that isn't our species, is conceived "as a purely physical sphere," leading to a "concept of nature as dead matter."[8] The "dead matter" idea tells of a world without mind, without liveliness of its own. The logical corollary is that humans are meant to exercise mastery and control, for we are the only mindful, thinking agents on Earth. The modern descriptor for this approach is mechano-reductive.

Centuries of traumatic dualisms have violently impeded our capacity to trust in the goodness of Earth. Plumwood alluded to this incapacity when she wrote that the task for scholars now is "to discern wisdom and intelligence in the material world."[9] She was working toward a philosophical animism, which took inspiration from Indigenous people while seeking to ground animism within the West's own tradition.[10]

Wisdom and intelligence are qualities that invoke a certain goodness in the world — not a kind place, and certainly not human-centric, but rather a world of patterns that foster and promote life, patterns within which creatures find their fit and make their contributions. The philosopher James Hatley is a leading Levinas scholar who is thinking toward goodness. He shows that in this world we encounter "anarchical goodness." The point is that goodness arises in ethics, in the call of the face-to-face. It is "unprecedented and gratuitous." It cannot be accommodated within a system of rationality.[11]

Connectivity thinking radically challenges hyperseparation. In the contemporary West, science has become the ground of legitimacy in understanding the world. Accordingly, I start my discussion of connectivity in ecology. Science defines ecology as the study of ecosystems, which is to say that it is the study of interactions within biotic and abiotic domains. A more general definition is oriented toward

8. Val Plumwood, "Nature in the Active Voice," *Australian Humanities Review* 46 (2009): 118.

9. Ibid., 125.

10. Deborah Bird Rose, "Val Plumwood's Philosophical Animism: Attentive Inter-actions in the Sentient World," *Environmental Humanities* 3 (2013): 93–109.

11. James Hatley, "The Anarchical Goodness of Creation: Monotheism in Another's Voice," in *Facing Nature: Levinas and Environmental Thought*, ed. William Edelglass, James Hatley, and Christian Diehm (Pittsburgh, PA: Duquesne University Press, 2012), 257. See also James Hatley, "The Uncanny Goodness of Being Edible to Bears," in *Rethinking Nature: Essays in Environmental Philosophy*, ed. Bruce Foltz and Robert Frodeman (Indianapolis: Indiana University Press, 2004).

epistemological and ontological questions: what is the living world like, how does it work, where and how do humans and other beings fit? The most profound insight from ecology is that humans are not hyperseparated. We are part of the biosphere. The illusion of mastery and control is exactly that: an illusion. In the words of the ecologist Frank Egler, "ecosystems are not only more complex than we think, they are more complex than we can think."[12] Knowledge in ecological systems is never complete; it is always changing, emerging, and fraught with uncertainty (far from equilibrium). The whole is greater than the sum of the parts; we humans are simply a part. We are inside the biosphere, and we are participants, for better and (increasingly) for worse. Ecological thinking takes us away from certainty and into probability. Connectivity entails *inter*dependence and brings us into domains of responsibility, accountability, proximity, ethics, and community. These are domains in which many Indigenous people have been living for millennia. There is much to learn, much to be shared.

Animisms

The term animism is something of a catch-all. At its widest, it points toward a liveliness outside the human sphere. In this context "animism" is gestural: it marks mindful connectivities and the agency of life systems, living individuals, and the living planet. Were it not for the strength of the idea of "dead matter," such assertions would be unnecessary, perhaps even faintly ridiculous.

More specifically, the term animism connotes an ontology in which non-humans are not only lively, but can be understood as persons, that is, as beings with an interest in their own life, their own way of life (conatus), and their own desires. The religious studies scholar Graham Harvey has surveyed and analyzed animist thought and practice around the world. His work draws on a new wave of anthropological interest that aims to treat animist thought on its own terms rather than use it as a classificatory device that serves Western desires for dualistic superiority.[13] Harvey defines animism as the recognition "that the world is full of persons, only some of whom are human, and that *life is always lived in relationship with others*." Animism articulates a relational ontology, and there is more. Persons are beings (not objects), and Harvey goes on to assert the corollary: "Animism is lived out in ways that are all about learning to act respectfully (carefully and constructively) towards and among other persons."[14] The quality of relationship is sustained through care.

A stronger form of animism articulates the connectivities among this varied entourage of persons in the mode of kinship. North American First Nations are

12. Frank E. Egler, *The Nature of Vegetation, Its Management and Mismanagement: An Introduction to Vegetation Science* (Norfolk, CT: Aton Forest 1977).

13. See, for example, Danny Naveh and Nurit Bird-David, "Animism, Conservation, and Immediacy," in *The Handbook of Contemporary Animism*, ed. Graham Harvey (Durham, England: Acumen, 2013).

14. Graham Harvey, *Animism: Respecting the Living World* (New York: Columbia University Press, 2006), xi.

perhaps best known in this regard. The term "clan" denotes a multispecies kinship group: the Bear clan includes bears and humans, the Goose clan includes geese and humans, and so on. I should add, as well, that Indigenous people include within their world many beings that Westerners might not recognize at all, such as Rainbow Snakes, or might not recognize as living beings, such as Sun and Moon.

My long-term research with Aboriginal people in Australia has brought me into encounter with one of the world's most elaborate forms of multispecies kinship. Anthropologists apply the term "totemism" to these multispecies kin groups. An excellent definition of Aboriginal Australian totemism is that it involves all beings in "bonds of mutual life-giving."[15] Totemism identifies a worldview that rests upon a set of logical understandings and interrelated ideas about Earth life. The first is connectivity: life is always lived in relationship with others. The second is that the mode of relationship is kinship — there are others to whom you are related, and there are others to whom you are not related. Third, the encompassing frame of kinship articulates both a structure and an ethics — there are mutual responsibilities across species and other beings. Fourth, kinship is expressed in bonds of mutual life-giving or, to put it another way, enduring intergenerational, interspecies responsibilities.[16] Mutual life-giving involves reciprocity and care. Kinship is both a structure that is perpetuated through time and an ethics of practice that gives substance and meaning to the structure. It is the outcome of nurturing care, as well as a type of relationship founded in descent.[17]

In this strong animism, bonds of mutual life-giving subtend relationships among individuals and groups, across species; they include a great range of beings, even some landforms. These relationships are the result of creation, and they enmesh beings, including humans, within life-giving bonds that are inclusive, that do not have humans as the focal point or apex, and that are pervaded with an ethics of care and responsibility. This is an ecological ontology in the best possible sense: it is relational, and it articulates patterns and ethics of connectivities, continuities, and responsibilities.

15. A. P. Elkin, *The Australian Aborigines: How to Understand Them* (Sydney: Angus and Robertson, 1954), 133.

16. In classical anthropology, the emphasis is primarily on biological descent. More nuanced approaches that emphasize kinship as an outcome of nurturing relationships provide a balance to this earlier emphasis on descent. The result is circular: bonds of mutual life-giving congeal as kinship, and kinship calls forth bonds of mutual life-giving. The question of how other living things experience and express responsibilities goes beyond the parameters of this essay.

17. Kinship is one of the perennial topics in the discipline of anthropology. On the matter of considering both practice and structures, see, for example, David Schneider, *A Critique of the Study of Kinship* (Ann Arbor: University of Michigan Press, 1984); and Maximilian Holland, *Social Bonding and Nurture Kinship: Compatibility between Cultural and Biological Approaches* (North Charleston, SC: Createspace Press, 2012). For more on Aboriginal Australian totemism and responsibilities, see Deborah Bird Rose, "Death and Grief in a World of Kin," in *The Handbook of Contemporary Animism*, ed. Graham Harvey (Durham, England: Acumen, 2013).

Liveliness — Less and More

Across two thousand or more years of Western thought we can discern a struggle between two main streams of ontological thought. On one side, people articulate an ontology of flux, continuity, and connectivity, and on the other side, an ontology of eternal and essential truths. The problem is one of dominance: that abstracted truths judge the world and find it inadequate.[18] Isabelle Stengers, among others, critiques the "imminent triumph of human reason" as the destructive process of judging "the world in the name of the power of theory."[19] The stream that moves toward lively connectivities continues. It has been vilified as vitalist, pagan, feminine: not only wrong, but offensively wrong. For most of this history, lively alternatives have been treated as heresy: often violently suppressed, as in the Inquisition; often gendered, as in witchcraft; regularly denigrated and belittled when not being violently extirpated.

A pivotal figure for the modern West was, of course, Descartes. His rigid adherence to a mode of thought he characterized as "reason" gave enormous impetus to the mind–matter dualism. All knowledge, he said, is the product of the human mind exercising reason. Everything else is excised. Only humans, in his view, exercise reason, all else is "mere matter." So violent was his excision of all else that he concluded, for example, that animals were merely machines. He denied their desires, their suffering, and their terror. There is an element of tragedy here. Descartes aimed to move away from the religious violence of his time, and to work with reason rather than faith. And yet, the violent separation of mind from matter produced a terrible "de-realization" of matter, and left no place for relationality. The connection between that famous insight, "I think therefore I am," and our current environmental crises is direct and immediate. As Freya Mathews puts it in her analysis of de-realization: "if the world cannot be shown really to exist, then it can scarcely be shown to matter in its own right."[20] This totalizing mind-matter split was traumatic for all who were excluded, and it became traumatic for the West as well, laying the groundwork for several centuries of mechano-reductive thought and action. As Carolyn Merchant famously puts it, this was the era of the death of nature.[21]

In the mid-twentieth century, there came a moment when it appeared that the long contestation between competing ontologies was over. By then the locus

18. See, for example, Lev Shestov in Bernard Martin, *Great Twentieth Century Jewish Philosophers: Shestov, Rosenzweig, Buber, with Selections from Their Writings* (New York: Macmillan, 1969), 37.

19. Isabelle Stengers and Penelope Deutscher, "Another Look: Relearning to Laugh," *Hypatia* 15, no. 4 (2000), 41.

20. Freya Mathews, *For Love of Matter: A Contemporary Panpsychism* (Albany: State University of New York Press, 2003). See in particular this quote on p. 29; see also p. 171.

21. Carolyn Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution* (San Francisco: Harper Collins, 1980).

of truth had shifted from philosophy to science.[22] Perhaps the most traumatic truth yet devised by humans was the "Modern Evolutionary Synthesis." Its core has been neatly summarized as the "selfish gene" theory. This account confirmed, with the authority of science, that the way life really is conforms to a paradigm of isolation and competition.[23] The unit of interest was the gene; genes were understood to constitute individuals, and these individuals were understood to compete for an ostensibly scarce resource — namely survival.[24] Isolated individualism and competition was a clear replication of neoliberalism, but this traumatic truth cut away even human persons. One of the great proponents of this theory, Richard Dawkins, wrote: "We are survival machines — robot vehicles blindly programmed to preserve the selfish molecules known as genes."[25] In sum, the individual, which for analytic purposes could be a species, group, organism, or gene, was modeled on "Hobbesian man": it was autonomous (disconnected), highly gendered, and necessarily competitive.[26] At the extreme edge, the molecular biologist Jacques Monod formed the view that the universe is in some sense hostile to humans. "Man," he wrote, must "discover his total solitude, his fundamental isolation, he must realize that he lives … on the boundary of an alien world"; he must accept the "overwhelmingly hostile" nature of nature.[27]

One outcome of the brief triumph of the selfish gene theory was the "simultaneous dispersal of an entire school (or generation) of evolutionary ecologists."[28] Along with people and their research, much thought was excised. There was no place for cooperation, connectivity, or communication. Theories of symbiosis (interaction), coevolution, mutualisms, permeable cells, and flowing networks were pushed to the periphery, and implicitly defined as fanciful or girly. In

22. Mary Midgley, *Evolution as a Religion: Strange Hopes and Stranger Fears* (London: Routledge, 2002). The context was evolution, a field that is itself full of contention and replete with symbolic power. To hold the high ground in evolutionary theory is to have the power to articulate how the world really is.

23. Evelyn Fox Keller alludes to the trauma of this "truth" when she writes that biology became a "mature science in the mid-twentieth century when it ceased to be about life and joined the mechano-reductive tradition." Evelyn Fox Keller, *Secrets of Life, Secrets of Death: Essays on Language, Gender, and Science* (New York: Routledge, 1992), 113.

24. Zygmunt Bauman offers an excellent analysis of competition for survival in a vastly different context. Zygmunt Bauman, "The Holocaust's Life as a Ghost," in *The Holocaust's Life as a Ghost: Writing on Arts, Politics, Law and Education*, ed. F. C. Dacoste and Bernard Schwartz (Edmonton: University of Alberta Press, 2000).

25. Richard Dawkins, *The Selfish Gene* (Oxford: Oxford University Press, 1976), ix, quoted in Keller, *Secrets of Life, Secrets of Death*, 150.

26. Keller, *Secrets of Life, Secrets of Death*, 144. Keller shows in detail how the discourse was constructed to retain competition as the single mode of interaction.

27. Jacques Monod, *Chance and Necessity* (New York: Random House, 1972), 2, quoted in Keller, *Secrets of Life, Secrets of Death*, 117. Keller is not alone in noting that it is logically impossible for nature to be hostile if it is indeed lacking in liveliness.

28. Keller, *Secrets of Life, Secrets of Death*, 151.

Evelyn Fox Keller's analysis, visions of cooperation, harmony, and benefit to the species were colored with a stain marking them as childish, romantic, and unscientific.[29] The gladiatorial mode of establishing truth is appallingly clear in this story: the selfish triumph of the selfish gene theory was accompanied by a nasty denigration of the alternatives. But the story doesn't stop there. A cohort of extremely gifted, and necessarily courageous, women and men has been bringing about huge changes in how individuals, genes, life, and Earth can be understood.

Connectivities

Ecologists define connectivities as flows of energy or information across borders of difference. Research is showing that connectivities are at the very heart of life on Earth. I will summarize the work at two scales: the cell and the biosphere. The microbiology bombshell is now dissolving the idea that the gene is the basic unit of heredity. Rather, cells are shown to be basic, and cells do a great many things that mechano-reductionist theory says they cannot do. According to James Shapiro, "complexity, networks, signaling, and cognition (i.e., sensing and decision making) … [have] emerged as essential features of living cells."[30] Cognition and purposive action on the part of cells is basic, and it seems, moreover, that cells engineer their own genes.[31]

Cells are not isolates. The kind of openness and self-organization that is characteristic of cells is also characteristic of the biosphere as a whole. Gregory Bateson, a long-term scholar in a range of fields, and a leading proponent of liveliness (mind), contended that the unit of survival was not the organism in itself, but rather that organism and the environment together.[32] More recently, other scholars have stressed this point. Susan Oyama, writing about cells, emphasizes the conjunction of variation (difference) and order (self-organization). In her words, "organisms develop *with* and *through*, as well as *in*, environments, including living ones, altering them as they are themselves transformed."[33] At all scales, life on Earth is made up of interdependencies, interactions, and communication; this is so all the way "up" to the biosphere and "down" to the single cell. The emphasis is on the openness of systems. For although an entity is closed in the sense that it organizes itself, it is open to the metabolic, communicative, and other flows of which it is a part.

29. Ibid., 154.

30. James Shapiro, "Bringing Cell Action into Evolution," in *Earth, Life, and System: Evolution and Ecology on a Gaian Planet*, ed. Bruce Clarke (New York: Fordham University Press, 2015), 181.

31. Ibid., 197.

32. Gregory Bateson, *Steps to an Ecology of Mind* (London: Granada Publishing Limited [Paladin Books], 1973 [1972]), 436.

33. Susan Oyama, "Sustainable Development: Living with Systems," in *Earth, Life, and System*, ed. Clarke, 204.

James Lovelock took up these issues in the context of planet-scale interactions and proposed that the existence of this dynamic planet Earth is not a matter of pure chance. Rather, he held that "early in life's history living and nonliving matter became entangled as *a single entity* within which organisms themselves may have been shaping conditions to their adaptive advantage."[34] Right from the start this theory was anathema to scientific dogma, and the fact that the identifying term refers to a female goddess only exacerbated the cultural cringe.[35] Eileen Crist and Bruce Rinker state that it articulated a new animism based in science: "After 400 years of being virtually shelved by dominant mechanistic and reductionist perspectives," the concept of an animate Earth has become integral to interdisciplinary Gaian research.[36] The Gaia bombshell called on the new thinking arising out of cybernetics: self-organization, emergence, recursivity, entanglement, probability, mutual causality. It is largely consistent with quantum theory and systems theory, and it is often called Earth systems science (in preference to Gaia). A key concept is openness: the Gaia vision is of a "world of open, flowing, genetically and thermodynamically connected forms."[37]

These open, connected forms are a reminder that the real scandal of Darwin's thought was his assertion of kinship.[38] This central idea was backgrounded while scientists pursued the dogmatic vision of competition and random change, but it is back now in both science and philosophy, augmented by insights from microbiology and ethology (among other disciplines). It is important to note, therefore, that while the mechanistic claims about animals did not allow for animal (or plant) desire or consciousness, current research has completely undermined the mechanistic refusal. Recently, a group of eminent neuroscientists formally came to the conclusion that mammals, birds, and many other animals are conscious. This group determined that consciousness has no single, simple definition, but is generally thought to include awareness and intentional behavior. More expansively, research shows that many animals have the capacity for empathy, pleasure, generosity, concern for others, and a sense of fairness.[39] The "Cambridge Declaration of Consciousness" put to rest the false proposition that only

34. Eileen Crist and H. Bruce Rinker, "One Grand Organic Whole," in *Gaia in Turmoil: Climate Change, Biodepletion, and Earth Ethics in an Age of Crisis*, ed. Eileen Crist and H. Bruce Rinker (Cambridge, MA: MIT Press, 2010), 4–5.

35. Dorion Sagan, "Life on a Margulasian Planet: A Son's Philosophical Reflections," in *Earth, Life, and System*, ed. Clarke, 19.

36. Ibid., 7.

37. Ibid., 30.

38. Plumwood, "Nature in the Active Voice," 120.

39. See, for example, Marc Bekoff, *Minding Animals: Awareness, Emotions, and Heart* (New York: Oxford University Press, 2002); Marc Bekoff and Jessica Pierce, *Wild Justice: The Moral Lives of Animals* (Chicago: University of Chicago Press, 2009); and Frans de Waal, "Putting the Altruism Back into Altruism: The Evolution of Empathy," *Annual Review of Psychology* 59 (2008): 279–300.

an animal with a highly developed neocortex (read "human") can experience consciousness.[40] Research with plants is also showing awareness and intentional behavior.[41]

We now have many excellent accounts of active matter: matter that is vibrant and intra-active; matter with interiority; matter that organizes itself into kindreds. Relational ontologies are pervasive across sciences, social sciences, and humanities fields,[42] and animism now appears to be insightful rather than ridiculous. Connectivities are everywhere, but they are not chaotic. Gregory Bateson famously asked: "What is the pattern that connects?"[43] Patterns are organized variations: they require both difference and sameness. I want to emphasize this point because there is a widespread view that connectivity means that everything is connected to everything. In fact, difference is necessary to any sort of order; living systems require both boundaries and connectivities. Self-organization is the capacity of a living unit (however defined) to actually sustain itself *as itself*.[44] Recursivity means that these flows are entangled; they can and do turn back on each other, entering and re-entering into each other. Life emerges out of all this relational interaction.[45]

Stories — Bursting the Bonds

Established stories have the potential to offer us affective truth: the experience of satisfied meaning in relation to big questions of how life comes into being, and thus how the world really is and how humans and others fit.[46] As Donna Haraway frequently remarks, there are life and death consequences to the stories we tell; they really do matter. Stories are "of the world, not in the world. Worlds are not containers, they're patternings, risky co-makings."[47] The work of telling stories

40. Philip Low, "The Cambridge Declaration on Consciousness" (2012), http://fcmconference.org/img/CambridgeDeclarationOnConsciousness.pdf.

41. Matthew Hall, *Plants as Persons: A Philosophical Botany* (Albany: State University of New York Press, 2011).

42. See, for example, Karen Barad, "Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter," *Signs* 28, no. 3 (2003): 801–831; Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham, NC: Duke University Press, 2010); Vicki Kirby, *Quantum Anthropologies: Life at Large* (Durham, NC: Duke University Press, 2011); Mathews, *For Love of Matter*; and Plumwood, "Nature in the Active Voice."

43. Gregory Bateson, *Mind and Nature: A Necessary Unity* (Glasgow: Fontana/Collins, 1979).

44. Sagan, "Life on a Margulasian Planet," 34.

45. My use of the term "interaction" is not intended to contradict Karen Barad's ontological work on "intra-action." See, for example, Barad, "Posthumanist Performativity."

46. It is taken as a given that there is diversity both within and between cultures. In looking at root metaphors, one risks becoming overly broad; at the same time, however, there is something exhilarating in the realization that many narratives are implicitly embedded in the one root metaphor.

47. From an unpublished English translation of Donna Haraway, "Jeux de ficelles avec les espèces compagnes: Rester avec le trouble," in *Les animaux: Deux ou trois choses que nous savons d'eux*, ed. Vinciane Despret and Raphael Larrère (Paris: Hermann, 2014), cited in Thom van Dooren and Deborah

articulates webs of connections, and with them we are drawn into accountabilities and obligations.

At the same time, stories have histories. They achieve their power because they "speak" to specific times and places. Indigenous animist stories show some of the ways in which humans can live within a world of lively interactive relationality; they show us templates for human imaging of connectivity. But for practical reasons, as well as the more commanding ethics of respect, it is neither appropriate nor reasonable for the West to appropriate the content of other people's stories. The more ethically responsible step is to examine patterns, and search for connections, by recuperating alternatives from our own stories. My approach is embedded in the pattern of connectivity logic I encountered in Aboriginal Australia.

A Story that Jumps Across Time and Place, and Brings Meaning Home

Somewhere along the banks of the Victoria River, in the Northern Territory of Australia, there are some very old boards. They are said to be the remains of the boat God used when he was traveling across the floodwaters in the time when everything was still in flux. In this time of creation, Dreamings had come out of the Earth and were traveling, naming, creating. They were shape-shifters, traveling sometimes in human form and sometimes in the form they would become, and they spoke languages that now are human languages. They were the ancestors of contemporary beings; the Kangaroo Dreaming creators are the ancestors of kangaroo people and kangaroo animals. Flying-fox Dreamings are the ancestors of flying-fox people and animals. And so it goes. Among them was God. He picked up some mud and made a man and a woman, putting into them sheep or nanny-goat hearts.[48]

Stories that connect events from the Biblical Holy Land with Australia are widespread. All across Aboriginal Australia there are sites like this: where the Ark landed, where the animals came forth two by two, even giraffes and elephants; where Jesus walked and left his footprints; where Moses lived, out there in the Tanami Desert; underground tracks along which the Wise Men lead camels bearing sacred objects.[49] It is easy to get hung up on questions of time, and to start thinking about how time seems to be flattened; and it is easy to get hung up on questions of space, and to start thinking about how places seem to leap into unexpected gestalts. But a better focus is the *logic* that powers these connectivities across time and place.

Bird Rose, "Lively Ethography: Storying Animist Worlds," *Environmental Humanities* 8, no. 1 (2016): 89.

48. Allan Young, *Kidman Springs-Jasper Gorge Land Claim Unofficial Transcript* (Canberra: Australian Government Publishing Service, 1990), 58–59.

49. For further analysis of such stories in a context of transmission and re-imagining, see Deborah Bird Rose, *Reports from a Wild Country: Ethics for Decolonisation* (Sydney: University of New South Wales Press, 2004), 131–148. This work also shows the exportation and imposition of traumatic truth in colonization.

These stories work with a logic that is recursive, nonlinear, and full of connectivities. The idea is that if something is so important that it has become foundational to the ongoing life of Earth, then it must have happened everywhere. The happenings of distant places belong in those places where they happened; if the event really matters, it happens here too.

Animist connectivity logic involves dizzying pluralities of replicating patterns; it also involves fidelity: meaning is brought home to be among the storytellers. There is a bursting forth of desire: across expanses of time and space, the logic of connectivity calls out for closeness, entanglement, participation. Foundational events replicate across the world, generating homes in which creatures in all places are face to face with the foundational significance of life.

In this story, there is an important point about borrowing and fidelity. Stories jump around, and this is good; their nomadic liveliness is integral to their meaningfulness. At the same time, we humans have histories and stories that make us as we are in our specificities, and the wrestling that goes with thinking otherwise through nomadic stories also entails returning to our own tradition.

Traumatic Garden

Stories that invoke trauma have an ancient lineage in the West. The Garden of Eden is a foundational example. As is well known, once there was a Garden, and inside the Garden lived the first man and woman — Adam and Eve. God made them and put them there, giving them instructions. There was one tree in particular whose fruit they were not to eat. Eve, it is said, followed the urging of the serpent, ate the fruit, and gave some to Adam. God discovered them and expelled them from the Garden. "Cursed be the ground because of you," He says as He sends them forth to suffer and to exercise dominion.

This is the foundational traumatic truth of the West. It can be interpreted in numerous ways, of course, but over the millennia the message of trauma and error prevails: we (humans) were meant to live in Paradise; nature is hostile; we deserve better; our place is elsewhere — heaven or Eden; our task is to try to find our way back to a place of Blessing. We've eaten the fruit, we're smart, we'll make our own Paradise. Carolyn Merchant explains that it offers a narrative, now truly secularized, of recovery leading toward happy perfection. As is well known from everyday experience, this story promotes a victim narrative that appears to authorize a belligerent sense of entitlement.[50]

Theologians, philosophers, and other scholars have wrestled with this story, and I will turn to some of that work shortly, but first it is necessary to defamiliarize it. Only by seeing it from elsewhere can we begin to grasp the depth of the trauma. The great Chicaza poet and novelist Linda Hogan helps us understand just how traumatic this origin story is:

50. Carolyn Merchant, *Reinventing Eden: The Fate of Nature in Western Culture* (New York: Routledge, 2004). A key ecological analysis in this vein is the classic essay by Lynn White Jr., "The Historical Roots of Our Ecological Crisis," *Science* 155, no. 3767 (1967): 1203–1207.

> In the Christian creation story a singular god created a beautiful and lush garden in the place where rivers met. The problem, as with Pandora's box, is the challenge given the first people in this garden named Eden. Although they are loved, no other first people in any indigenous creation story are challenged in such a way as Adam and Eve, tempted to eat of a divine food that will offer them knowledge. Any intelligent god would know that "his" children would consume that fruit, would one day come from innocence into intelligence and knowing.
>
> Instead of learning their relationship to this world through the words of their creator, instead of the instructions that will keep a world alive, Adam and Eve are simply sent away. They are removed from the natural world, even from the divine by the simple act of seeking knowledge. Most of us know this story. In a way *this is the story of the end of stories in this particular culture*. After the shunning from the garden, what follows are stories of destruction and war, deception, betrayal and lies. Where are the stories about relationship and great love, or as with the Chicaza, how a canoe with singing women came down from the sky and one of the young women fell in love with an earth man who returned the love and their struggle and success in overcoming differences. Where in Christianity is the humour, the sacred world. The creator is not similar to humans who have flaws. It is as if that first sin was the ending. There is no longer a good garden, no forest. The people do not know the story of their land or world, or learn that they are one with the spine, heart, and breath of all the rest. They are not a part of it.
>
> In most other cultures' creation stories, the animals may help the humans, the people are created with earth and sky knowledge, they come from inside earth, or down from the sky. They have help from animals and are loved and cared for greatly.[51]

Hogan's analysis shows us that the terrors of traumatic truth are all here in this one story: the exclusions, violence, punishment, and suffering; the loss of goodness, the gendering of blame, the heart-breaking sense of irreparable trauma for everyone, and the inevitability of it all. As a "truth" of the world it could hardly be more traumatic. It suggests that the Earth itself has been turned against humanity, and there is no goodness to be found except, perhaps, with God. This analysis focuses our attention on Adam and Eve's fate — to suffer and to dominate. It links trauma and power to mastery and control.

Knowledge can refute the account of creation, but the legacy of trauma is far more resistant. Stengers suggests that we need antidotes to counter this traumatic truth. It is as if we are under the spell of our own violent history and power. To break strong spells, strong antidotes are required. Stories have the capacity to do this work — to burst open the constraints of dogma and open new vistas of meaningfulness. As with many toxins, the antidotes may be closely related to the venom. As I will show, recognition of the goodness of Earth is one of the most powerful antidotes we have.

A Garden of Goodness and Desire

From a connectivity perspective, it is hard to fathom the idea of a single Garden of Eden, or a single Adam and Eve. And to be fair, the Bible also appears to find singularity difficult to fathom. Literary analysis addresses two accounts of God in the Bible and indicates that there are two narrative strands; rather than being reconciled, these strands are set side by side. The noted theologian Joseph

51. Linda Hogan, "Backbone: Holding Up Our Future," in *Humanities for the Environment: Integrating Knowledge, Forging New Constellations*, ed. Joni Adamson and Michael Davis (London: Routledge, 2017), 27–28 (emphasis added).

Soloveitchik argues, in contrast, that the doubling up is not a product of different narratives, but rather is an account of how life really is (for humans). There are two stories of creation, he concludes, because humans have a dual nature. The first, which he calls Adam (1), results from God's work creating Adam and Eve in his image and authorizing them to take dominion over the Earth; here, Adam is something of an engineer.[52] This Adam corresponds to Val Plumwood's account of *Homo faber*, the master of inventing, investigating, engineering, and constructing, along with generating an astounding amount of destruction. The main point is that he is not the only Adam.

Adam (2) is created from clay, and is brought to life by God's own breath. Rather than seeking domination, he is told to serve and keep the Earth. He loves the world and wants to be part of it.[53] He corresponds to Plumwood's *Homo reflectus* — the human who thinks deeply about things. Adam (1) wants to engineer the world. Adam (2) knows that he is part of the world and seeks "fellowship" within it.[54]

In the story of Adam (1), there is differentiation marked by the different days of creation, and God saw that it was all good. Adam and Eve are created together on day six, and after the catastrophe, they are sent on their way to take dominion over everything. In Soloveitchik's words, Adam (1) and Eve are self-enclosed: they form a human-only community that is "fenced-in" and "ego-centric."[55] It is a community of those who work together for shared purposes of domination, and it generates the by now well known disaster of human-centric mastery leading to destruction. But, while Adam (1) and Eve are making their way in the world, God is making Adam (2), and with this creature He does things differently. In this second story, the first living being He creates is Adam, and He creates him from the Earth. Significantly, the name Adam is the masculine form of the word Adamah, which means ground or earth.[56] In this narrative, after creating Adam (2), He turns to creating plants, causing all of them to grow from the Earth.

At this point God decides to organize a garden, and inside the Garden He brings about a key moment of creation: a moment of differentiation, encounter, and communication. Genesis 2:18–21 reads:

> The Lord God said, "It is not good for man to be alone; I will make a fitting helper for him." And the Lord God formed out of the earth all the wild beasts and all the birds of the sky, and brought them to the man to see what he would call them, and whatever the man called each living creature, that would be its name. And the man gave names to all the

52. Joseph Soloveitchik, *The Lonely Man of Faith* (New York: Three Leaves Press, 2006 [1965]), 13.

53. Ibid., 10, 21.

54. Ibid., 39.

55. Ibid., 56.

56. Wikipedia, s.v. "Adamah," last modified November 29, 2017, 19:59, https://en.wikipedia.org/wiki/Adamah.

> cattle and to the birds of the sky and to all the wild beasts, but for Adam no fitting helper was found.[57]

So much is going on in this short passage! For a start, we learn that Earth creation involves God and soil. God made animals, fashioning them from the Earth. Every animal was made in this Adamah way: transformed from Earth into form. And so, every one of these creatures was another Adam, that is, formed from Earth as the first of its kind. They were all dirt creatures, and one of them was a human. This community of Earth creatures is the Adam–Animal community. Plants have grown directly from the ground, and so they too are part of the Earth community, although in a different way, as they were not individually fashioned.

The next event is that God decides that the members of the Adam–Animal community need to meet. In the Garden, there is an open space of encounter. Nobody knows what will happen. This is true dialogical space — open, without predetermined outcomes, full of surprise.[58] God did not know what Adam was going to say. And, equally significant, Adam did not know what he was going to say either; nor, we may conjecture, did the animals. Here, I need to distinguish between calling and naming; each is significant. The story may be telling us that the other animals already knew how to call members of the community. They would have called Adam "brother," for they were all fashioned by the same "father," and Adam would have reciprocated with "brother" or "sister." But names are not kin terms; they form a different, albeit profoundly significant, moment of recognition. Rather than depending on descent, names erupt in intersubjective encounter. Names personalize and individuate. Even more than a kindred of Earth creatures, this was going to be a community of recognition, a community of persons. The Adam–Animal community shared a lively meaning-making moment in which nobody knew what was going to happen. This community of those who don't know what is going to happen (paraphrasing Alphonso Lingis) is life on Earth.[59] In this relational, emergent world of multiplicities and connectivities, neither practice nor knowledge can be achieved in isolation. We co-create this becoming world with other members of the community, and if we remain faithful to the openness of co-creating, it is not possible to know everything in advance.

The West's attachment to Adam (1), along with its rejection of Adam (2), is surely the most traumatic decision ever made. Nevertheless, the Adam–Animal

57. Jewish Publication Society, ed., *Tanakh: The Holy Scriptures — The New JPS Translation According to the Traditional Hebrew Text* (Philadelphia: The Jewish Publication Society, 1985).

58. On dialogue in a mode of open intersubjectivity, see Deborah Bird Rose, "Recursive Epistemologies and an Ethics of Attention," in *Extraordinary Anthropology: Transformations in the Field*, ed. Jean-Guy Goulet and Bruce Miller (Lincoln: University of Nebraska Press, 2007).

59. Alphonso Lingis, *The Community of Those Who Have Nothing in Common* (Bloomington: Indiana University Press, 1994). Note that the Adam–Animal and wider Earth communities are founded in having something in common that matters deeply.

community continues to hold the potential to embrace us, and for us to participate in this kindred is to participate in creation and Earth life. We are Earth creatures (Adamah, dirt creatures, really), part of the soil and water and air of this planet. Indeed, having first been animated by God's breath, we continue to breathe, and so we continue to be part of creation. Soloveitchik imagines this breath as Adam's ongoing experience of God.[60] Life-giving breath is that wind which rippled across the water before anything else happened, and continues to ripple through all of creation. With every moment, and with every breath, we Earth creatures receive gifts of creation. We are called into connection, into relational personhood, and into responsibility. Rather than trying to engineer the world into something we think we deserve, and traumatizing ourselves and all the rest of Earth life in the process, our appropriate response is to revere and cherish the given (gifted) world that already exists. The sensible given, the goodness of the living world in all its complexities of both abundance and hardship, is a gift and a blessing.

Shestov used the concept of craziness to discuss a mode of exposure to life that differs from instrumental reason, certainty, predictability, mastery, control, and the layers of human self-enclosure that form isolating centrisms and are characteristic of Adam (1). He saw clearly that from the perspective of immutable truth, love of Earth life seems crazy. Adam (1) would have agreed. Adam (2) *is* crazy: he loves the world, he wants to serve it and care for it. Adam (2)'s community is an "existential community": a community of the face-to-face, a community of becoming together.[61] Craziness bursts forth into multiplicity; it offers an unconditional assent to the unpredictable, the intersubjective, the always becoming/always entangled, incomparably rich Earth community — the community always in co-creating, always surprising.

Inside the Garden, Adam (2) experienced the gift of desire. The first, or foundational, judgments were about goodness. But the first crazy event swims into our consciousness with Adam (2), and it is *the great antidote* to traumatic truth. The first crazy love arose with the first "not good" in Genesis. It was not good for Adam to be alone.[62] Hyperseparation pulls us away from creation and from the goodness of life. Desire for others is at the heart of all recuperative and reparative work. Indeed, it is the first moment of ethics: to desire the well-being of others is to enter into the community of living, open multiplicities, connectivities, and responsibilities.

60. Soloveitchik, *The Lonely Man of Faith*, 21.

61. Ibid., 41.

62. The great eleventh-century scholar, Rashi, offers a most enjoyable interpretation in which each animal is presented to Adam as a potential sexual partner. The conflation of desire with sexuality, and the subsequent ambivalence toward both, will have to be the subject of another paper. See Elie Wiesel, *Rashi: A Portrait*, trans. Catherine Temerson (New York: Schocken, 2009).

Connectivities and Gardens

Were Adam and Eve (2) also expelled from the Garden? Soloveitchik's account indicates that the Garden — that home of blessing and encounter — still surrounds us and beckons us. He writes that Adam (2)'s questions are first about God; they can equally be read as questions about the Garden. "Who is He whose life-giving and life-warming breath Adam feels constantly and who at the same time remains distant and remote from all?"[63] Adam (2), Soloveitchik specifies, "looks for the image of God not in mathematical formulae … but in every beam of light, in every bud and blossom, in the morning breeze and stillness of starlit evening."[64] Most powerfully (for the contemporary, secular reader), Adam (2), like all of us, "is faced with an exasperating paradox. On the one hand, he beholds God in every nook and corner of creation, in the flowering of the plant, in the rushing of the tide … as if God were at hand close to and beside man engaging him in a friendly dialogue. And yet the very moment man turns his face to God, he finds Him remote, unapproachable."[65] I believe we can understand this simultaneous presence and absence of God as the simultaneous presence and absence of the Garden. The challenge is to stay with the indeterminacy, and in fact to recognize the participatory, open-ended connectivities with which we are face to face. As Martin Buber famously wrote, "In our world is the fate of God fulfilled."[66] In the context of ecology and animism, I would want to change the emphasis: in this world is the fate of the Garden fulfilled.

The project of bringing meaning home in modes of connectivity, of locating antidotes within the foundation narratives of the West, radically reworks our thinking about both stories and home, and invites us to think of the Garden, too, as both a story and a home. In both modes it is fragmented and is best glimpsed obliquely. And yet, the legacy of our kinsman Adam (2) is that he does not exercise dominion, nor does he search for mathematical or abstracted understandings of the world. Rather, "he wants to understand the living, 'given' world into which he has been cast. … [He] explores … the irresistibly fascinating qualitative world."[67] Without doubt, partnerships between the two Adam legacies are necessary. But to retrieve and restore balance we need Adam (2)'s experience of encounter and recognition, his understanding that the face-to-face in a truly Levinasian sense is the direct foundation of ethics, and that it is multispecies, and rich in connections. It was (is) all gift, it was (is) good, and its fate is still uncertain.

63. Soloveitchik, *The Lonely Man of Faith*, 21.

64. Ibid., 22.

65. Ibid., 46.

66. Martin Buber, *Die chassidischen Bücher* (1928), 356, quoted in Shestov, *Speculation and Revelation*, 117.

67. Soloveitchik, *The Lonely Man of Faith*, 21–22.