

## **The Perennial Imagination and the Creative Ground: Cultivating Deep Roots in Land and People**

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I would like to talk to you this evening about farmers and philosophers: their influence in world history and the current status of some exciting new ideas coming out of their collective efforts. I know what you're already thinking: putting 'philosopher' and 'farmer' in the same sentence sounds like a set-up for a bad joke. Farmers are hard-working practical people who provide the food calories necessary for everyday life across the globe. We cannot imagine our lives without them. The same cannot be said about philosophers. They speak a strange language mostly to each other, and they are some of the least practical people on the planet. Philosophers think that the solution to every problem is simply to think more deeply about it. The jokes began with the very birth of Western philosophy. Thales of Miletus, considered the first philosopher in the West, is said to have been mocked by a servant-girl for falling into a well while gazing upwards and contemplating the fundamental principles governing the universe. Aristophanes, the Greek playwright, puts philosophy at the center of his comedy, "The Clouds." In this play Socrates runs a school called the *Thinkery* where students consider a new unit of measurement for ascertaining the distance jumped by a flea and the exact cause of the buzzing noise made by a gnat. And much more recently presidential contender Senator Marco Rubio proudly claimed that America needed to produce more welders and fewer philosophers.

Before we go any further, I'd like explain how I will be using 'philosopher' and 'farmer,' and some additional terms.

**“Farmer:”** one who produces *surplus food-calories* for others. Traditionally it was a person who worked directly on the land. Many farmers still do so today and their efforts—compared with philosophers—are without doubt the more important and challenging. But today, the “farmer” as producer-of-surplus food calories is also the perennial plant scientist, the agro-economist, the CAFO operator, the CSA farm family, the fertilizer manufacturer, the tractor manufacturer, and the chemist. As I will use the term this evening, farmers are all those who contribute to providing surplus calories in a culture’s food system.

**“Philosopher:”** A thinker, a speculator who seeks and produces answers to questions about existence, meaning, reality, divinity, morality, the good life. Some of this work becomes part and parcel of social, cultural, religious and political systems. Plato and Aristotle, Confucius, Buddha, Jesus, the great Jewish, Islamic and Christian theologians, Spinoza, Descartes, Immanuel Kant, Friedrich Nietzsche, John Locke, Adam Smith. I put Alexander von Humboldt and Charles Darwin in this category, too, and other systemic thinkers in the sciences. And Aldo Leopold, the father of the modern environmental movement. “Philosophers” are the source of the deep foundational beliefs in any cultural system of meaning. These foundational beliefs form our judgments and prejudices, our assumptions, our first inclinations, and our expectations. They are largely hidden from plain view, but they do a lot of heavy lifting.

**Farmers produce food systems and surplus calories. Philosophers produce “ISMs:”** Also called theories, grand narratives, worldviews, and paradigms. They are cultural options that prove successful, powerful, and transformative. Monotheism, Humanism, Anthropocentrism, Confucianism, Buddhism, Capitalism, Individualism, Marxism, Materialism, Scientism. Each makes claims and judgments about reality, truth and knowledge, right and wrong, and even beauty. I like to think of the I-S-M as standing for the phrase “Imaginative System of Meaning.” And by “imaginative” I don’t mean idle flights of fancy. I mean to use the term the way Wendell Berry describes it in his Jefferson lecture: to see “most clearly, and understandingly with eyes, but also to see inwardly, with ‘the mind’s eye.’” And the way Professor Ellen Davis, a Duke University theologian describes it:

as an intellectual faculty that seeks to relate and connect us to anything “not completely known or deducible from observed fact.” The imagination, she says, is “the stock of our culture.”

Finally, “**Material Culture and Formal Culture or Hardware and Software:**” A way of separating what is almost always intertwined. The formal culture or software is the collection of idea systems, the ISMs. The material culture or hardware is the collection of things, objects, and processes. A medieval cathedral is both a material object and symbol of the formal culture. So is a mega-mall, a pivot irrigation system, a food co-operative, an iPad, PowerPoint, a solar panel, a field of perennial grains, a modern slaughterhouse. Each is a material artifact informed by ideas. This interchange of information and influence between material and formal is a give-and-take; each influences the other.

OK, let’s continue. It’s hard to argue with Senator Rubio’s characterization of philosophers as not very useful when compared to welders, at least during times of cultural stability. Too much thinking that leads to more questions rather than to answers seems an expensive form of irony and an odd way to spend your time. Most of the time. But every once in a while—and usually during times of cultural collapse or radical cultural transition and transformation—philosophers have profound influences on the cultural software. Their ideas set new directions in their culture’s collective thinking. Their formal thinking helps create new political, religious, economic and ethical systems; in other words, new ISMs.

And so if we need a joke in all of this it might go something like: “How do you know when things are going really badly? You call a philosopher and ask for practical help.” It’s an act of desperation when the usual fixes aren’t working; when it’s not a matter of adjusting a policy or designing a better piece of technology, or changing laws or political representation, but about thinking more deeply about the problems we face, right down to their origins. There are historical moments when it becomes clear that the usual ways of doing things and thinking things, the status quo, are no longer working despite all of the duct tape and shims we apply to them. And when new, radical alternatives become necessary.

Here's the story: We're in a serious pickle. The human story, beginning with agriculture, is unprecedented. It has altered how people live, think, eat, consume. This success story has transformed the landscape so much so that some are calling for the naming of a new epoch: The Anthropocene, and with ample evidence to support this name change: species lost, climatic change, nearly 50% of NPP appropriated by a human population overwhelming the planet's ecosystems, profound injustices around the world, ....it's a long list.

The solutions to these problems are for the most part one of two kinds: 1) apply more of the "solutions" that brought the problems in the first place; or 2) provide alternative solutions that solve one problem by causing others, or that lessen or slow the damage: efficiency, sustainability, reducing human population by increasing economic growth and consumption. On the face of it it's hard to argue with any of these solutions, but still problems remain, get worse, or sprout new variations. We already have smart and well-intentioned engineers, economists, entrepreneurs, teachers, and activists.....so maybe we need to think differently about the problems or go more deeply into their causes. Why? Because more than a way of making cars and light bulbs or producing energy is on the line here. Indeed, more than a way knowing is on the line here. The implications of evolutionary biology, for example, have been understood and well known for more than a century and still we drench crops and livestock with chemicals, feed them the wrong diet, and then are surprised when our wells are poisoned, our farmers sick, our soils more eroded not less eroded, our fossil water supplies in steep decline, and when we have to rely on the near total substitution of nature's fertility with chemistry's magic What magic? The Haber-Bosch process of *fixing* nitrogen from air using high pressure and a catalyst to react nitrogen and hydrogen gasses to create ammonia. The nitric acid produced from the ammonia is then used to manufacture agricultural fertilizers. What fuels this reaction? Oil and natural gas.

But what if we thought more deeply about our solutions and our problems? What if our unstated assumptions about the natural world, our concepts of organic and inorganic, our notions of health and disease, and our belief in the human capacity to know it all, contributed to our current distress? What if a new understanding was emerging that

changed all the parameters and operated from different assumptions. What if we had the hardware for a agriculture that grew our food in perennials and mixtures, the way ecosystems function? And what if we had available new conceptual software in the guise of an ecospheric philosophy to inform and reform our social systems?

I have some good news. We do already have some of these new hardware and software options. But they are nascent, radical, hard to fathom and accept. They push up against our best environmental assumptions and good intentions; and they are every bit as challenging to the cultural status quo as monotheism was to polytheism; and as capitalism and democracy were to feudalism and monarchy. I want to share some of these ideas with you tonight, and to share my enthusiasm about their potential to provide the curative shift we need to be better than just less wasteful, less toxic, more efficient consumers. But to get there we need to look back in history, big history, to see if we can locate the original sources of the mindset that encourages our separation, our disconnection, our sense of superiority, and our winner-take-all attitude. And further back still to see an earth, a galaxy, a universe in full creative mode long before we arrived on the scene. We need to take this journey to protect us from coming up short in our “solutions,” to protect us from adopting ineffective half-measures simply because we have misunderstood the roots of the problems. Finding the root of anything requires some deep digging and persistence; it requires us to posit questions that go beyond the available answers; it forces us out of our conceptual categories; it risks making us uncomfortable. Another word for “root” is “radical.”

I hope to persuade you to accept two central claims this evening: 1) our problems began with the big Homo sapiens brain and the invention of agriculture; and 2) the solutions we need have always existed in the perennial creativity of the ecosphere, but for 10,000 years the human narrative writ large across every culture that has practiced agriculture has been to take credit for this creativity, to defend and justify human abuses of it, and to claim that one species alone is its master and primary beneficiary. Having designed ingenious pumps we took credit for the bounty of the wells. Agriculture began as a mining operation, an extraction of energy-rich carbon from soils. This extraction has never ceased: from soils

and the birth of agriculture to forest carbon and the bronze age; to coal, oil, natural gas, fossil water and the modern age. We now live in and often feel trapped by a global extractive culture. Happiness is found in an extractive consumerism. And modern education—from pre-school to grad school, in the classroom and the research lab, is derived from, dependent upon, and prepares students for an extractive economy. Modern education trains and rewards extractive minds. This must change.

Well now, I have just managed to insult nearly everyone in the audience tonight. Of course that's not my intention. I wouldn't be here tonight if I didn't think most of us would choose to live differently if we had viable choices, and if I didn't think that such choices are now increasingly available. We are all in this together; some more guilty, some less guilty, but all implicated in a continuous and destructive extraction that began with agriculture.

Let's take a quick trip into an ancient past and see if it can help us clarify some of these ideas.

Around 10,000 years ago we see the beginnings of annual, monoculture agriculture in key areas around the globe. It changes everything. I'll say more about this in a minute.

Somewhere between 100,000-200,000 years ago Homo sapiens appear on the African savannah: big brains, opposable thumbs, down from the trees, nearly wiped out. A couple of lucky breaks, use of fire, social instincts, a stable and warming climate.

Large meteor strikes 65 and 250 million years ago: the more recent crash ends the dinosaurs' reign. A lucky break for mammals.

3.8 billion years ago: A lifeless planet becomes possessed of life. Single-celled organisms emerge from a powerful soup.

4.5 billion years ago: A rocky planet with a nascent atmosphere, liquid water, organic molecules, an auspicious distance from a medium-sized star, and close to a large planet (Jupiter) that keeps most of the big meteors out of Earth's direct path.

13.82 billion years ago. The known universe originates with hydrogen, helium, lithium, and beryllium all produced within the first three minutes. A very subtle asymmetry (1 in  $10^9$ ) results in a universe with more matter than anti-matter. Another lucky break.

Why tell this story? We all know it, more or less. But we need to hear it from a new perspective....the story of chance circumstances and lucky breaks for the hairless wonder, Homo sapiens; of powerful, creative, dynamic, emergent forces occurring over vast stretches of time and space long before we show up. Life emerges from a lifeless earth plus sunlight plus an atmosphere, plus liquid water, plus the earth's own crusty furnace. As Nobel laureate George Wald summarized decades ago, we are "a late outgrowth of the metabolism of our Galaxy." The carbon central to our composition was "cooked in the remote past of a dying star," and "from it at lower temperatures nitrogen and oxygen were formed. These, our indispensable elements, were spewed out into space in the exhalations of red giants and such stellar catastrophes as super-novae, there to be mixed with hydrogen, to form eventually the substance of the sun and the planets, and ourselves. The waters of ancient seas set the pattern of ions in our blood. The ancient atmospheres molded our metabolism."

Perhaps life possesses organisms, not the other way around. Perhaps the ecosphere is a supra-organism in which the terms 'living' and 'non-living' are confusing at best; an ecosphere from which atoms, molecules, cells, organs, organisms, and ecosystems emerge by causation going in both directions: bottom up and top down. Perhaps there are powers of creativity and imagination in all of it; desire, force, purpose, urge, direction...in all of it. Perhaps the ecosphere is the source of this creativity, the creator.

Hearing the story this way we can appreciate, I hope, why some of the most ancient and indigenous creation accounts speak of this unified and creative universe, describing it as filled with animated spirits, goddesses and gods, a living, sacred place; sacred time; humans, divinities and nature all mixed up together. We can see an example of this creative swirl in early Hindu scriptures. Creation Hymn 129<sup>1</sup> from the *Rig Veda*, a collection of Sanskrit hymns from ancient India (by some estimates written 7,000 years ago),

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<sup>1</sup> [https://www.youtube.com/watch?v=KrUA6d\\_KjQ](https://www.youtube.com/watch?v=KrUA6d_KjQ)

speculates that the universe begins with a seed, with heat, and with desire. The creator One (capital 'O, but not otherwise named) is not some force outside of the creation, nor does it create the world out of nothing. Indeed, the author of this hymn suggests that the One itself came into being with its first desire to create. The desire arose first and linked the creator with the creation, so that both came into being together, in unison. *A co-creation, sparked by desire.* Could desire be a force shared by all beings? Might it exist even in those objects we call inanimate? Might this creative urge stretching across vast reaches of time and space be perennial, eternal? It has had many names: truth, beauty, god, divinity, sacred, alive, magical. Self-conscious humans are just one of its many improvisations. The perennial imagination, it seems, is in all.

These ideas can be found throughout indigenous traditions and early polytheistic and animistic cultures. But they were lost, forgotten, subsumed, appropriated, re-configured; more or less written out of the Axial and Modern ages, together spanning the last 3000 years. Who is primarily to blame for the loss of these ideas? You may be surprised by my answer.

The farmers; those first farmers 10,000 years ago. Let me explain. They were engaged in radical work, some of the most radical in human history. In essence they figured out how to tap energy-rich fossil carbon in soils to produce grains grown from seeds that they sowed. They seemed to be mimicking nature in a rough and rudimentary way, but they unwittingly cleaved the world in two: wild nature became weeds, pests, and predators to be subdued or ignored; what remained were called “crops” and “livestock.” Identify a few plant and animal varieties as civilization’s primary food sources and the rest of the natural world becomes a nuisance, a wild threat to our domestication. If these farmers weren’t the first dualists, their dualisms came to represent a powerful recipe for success. But it gets worse.

Enjoying the bounty they produced and in order to feed the increasing number of people it supported, but not understanding its erosive effects on soils, early farmers were necessarily expansionists always having to put more land into cultivation. Not surprisingly early farmers made enemies with their hunter-gather and pastoralist neighbors and

probably contributed to plant and animal extinctions. Their disturbance of the soils was certainly the beginning of anthropogenic climate change.

But the significant labor required to farm one's food calories must have seemed like a small price to pay. In exchange these early farmers were rewarded with longer life, more children, leisure, sedentary habits, greater complexity in social organization, writing and mathematics (to keep track of the granaries), a high opinion of themselves (thinking they were the source of the bounty); and **surplus**: surplus calories, surplus people (some of whom became slaves), and surplus creativity: philosophy, religion, and architecture; music, poetry, and the arts (including the technological and military arts that allowed them to subdue anyone who blocked their expansionist ways).

The farmers fed all those surplus people, including the philosophers and theologians, who in turn fed their cultures' minds and mindsets. It's not long before there are hierarchical societies, haves and have-nots, kings and emperors, slaves, and philosophical and theological explanations and justifications for all of it. It's true that early on in Hebrew and Greek thinking there are also prescient concerns about erosion and the injustices caused by too much surplus for some and too little left for others. But such concerns arose precisely as responses to the already well-established status quo assumptions about dominion, including the acceptance and defense of human slavery.

The radical nature of this agricultural-philosophical tag-team is powerfully depicted in the first few chapters of The Book of Genesis. How interesting that one of the first conversations between the Creator and the first humans is about food and knowledge. The image is of a tree with dangerous and forbidden fruit in a garden otherwise teeming with good things to eat. But the fruit in question is more than food for the body. It also confers knowledge and power. The temptation was too great. St. Augustine called this first, original transgression a sin of human pride. Sin or not, the first couple's expulsion from paradise symbolically marks the beginnings of both farming and philosophy, each born out of necessity<sup>2</sup>, but each tempting in its own right. And whoever wrote the Cain and Abel story had a grudge against farmers. The Creator is displeased with farmer Cain's gift, and

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<sup>2</sup> The necessity to both feed oneself and to think for oneself.

Cain is unhappy with the Creator's response, taking revenge on his own brother. Can too much surplus, too much feeling in control, too much power turn us to vengeful retribution even against our own family?

Of course what those early farmers and philosophers helped produce in place of indigenous beliefs about the creative universe were pretty impressive, too. For a millennium before the Common Era and across the Mediterranean, Middle and Far East—all places where surplus-production agriculture was well-established—large, complex cultures arose that developed coordinating philosophies designed to improve the human condition through the pursuit of wisdom. It may be a coincidence, but this pursuit comes to be identified with our species name in the genus *Homo*: *Homo sapiens*; the wise one. Utilizing transformative myths, rituals and philosophical theories, these Axial traditions—as philosopher Karl Jaspers famously described them—created powerful ISMs that guided whole civilizations for thousands of years. Hebrew monotheism and its Christian and Islamic offspring, and Greek, Roman, Buddhist, and Confucian humanism made informed guesses about the nature of the cosmos, explored the nature of God, and created ethical and political systems. At their best these Axial traditions assumed that although humans were susceptible to sin and ignorance, there were paths toward self-improvement. More importantly, these traditions believed that such self-improvement was possible only when answers were sought inwardly toward reason and wisdom or outwardly toward a divine presence, and always at levels deeper than mere personal pleasures and desires. The insights and successes of the Axial traditions are still evident today. Nearly fifty percent of the world's 7 billion inhabitants claim to follow a form of monotheism; secularists, humanists and others who claim to be “unaffiliated” make up an additional twenty-five percent.

If the Axial Age was the first great transformation fueled by agriculture, Modernism was the second. The 17<sup>th</sup> century French thinker Rene Descartes is called the Father of Modern Philosophy, but it is not too far off the mark to credit him with giving voice to Modernism as a coordinating philosophy. In an attempt to put knowledge on unshakeable ground Descartes doubts everything around him, even God, but he comes up against an undoubtable, unshakeable experience: his very own doubting proves that at least he is

thinking. His thinking—*cogito*—proved his existence—*ergo sum*. “I think, therefore I am” are Modernism’s first words. Descartes’s solitary pursuit of truth and his division of reality into mental and material substances represents a new kind of dualism, and it put the human individual at the center of the action. The subjective experience of the thinking self is the beginning of a new and different ISM: *Individualism*. Add to it John Locke’s defense of private property and his radical re-definition of the concept “sovereign” to include not just the king, but all humans in their pursuit of life, liberty and material happiness (or *Materialism*); and Adam Smith’s redefinition of the “market” to include mechanization and self-centered invisible hands (or *Capitalism*), and we have the primary components of the coordinating philosophy behind our 500 year old modernist perspective.

In Modernism *Homo sapiens* becomes *Homo economicus*. Happiness is no longer a higher pursuit that takes us out of our smaller selves, but rather the individual self-satisfaction and celebration of our smaller, individuated selves. And it is achieved not through spiritual practice and philosophical contemplation, but by the production and acquisition of material goods. The term “economics” means “household management.” In Modernism the “household” becomes the earth itself and we become its managers. It’s no longer humans that need improvement, as the Axial traditions emphasized, but rather the earth itself. We’re fine; it’s the earth that needs an upgrade.

Scientists, economists and engineers replace philosophers and theologians. Laboratories, factories and shopping centers become the new temples and libraries. We see this household management in early-modern agricultural advances, too: in plow designs, plant varieties, new forms of crop rotations; and later, high yield grains, the steam engine, threshers, modern irrigation systems, and the Haber-Bosch process which—according to energy historian Vaclav Smil—is alone responsible for 40% of the world’s population today. But the exponential growth of the human population begins in the early-modern period, long before Haber-Bosch. And current estimates place our control over Earth’s total net primary photosynthetic production at nearly half. (It certainly seems higher than that when one flies over the middle portion of the United States.) Not surprisingly, modern

agriculture is the largest contributor to species extinction, according to the Ecosystems Assessment Report.

In hindsight we can question two fundamental assumptions that both the Axial and Modern transformations share. The first is they give most of the credit for their successes either to the Divine or to human cleverness and ingenuity. The Ecosphere is always a bit player, a passive instrument given us by the Creator or simply a resource here for our use. It is God's grace or human creativity that makes the difference. The second is that these traditions assume taming, subduing, or ignoring nature's wildness are the keys to success. Their collective philosophical assumptions and agricultural productivity—with boosts from coal, oil and natural gas—blinded them to the wild, creative, dynamic ecospheric processes that stand behind all of our creative ventures and transformations. But this new vision (and the process of rediscovering the forgotten indigenous vision) took time to develop.

And it is here that philosophy in the 19<sup>th</sup> century takes the lead in rediscovering and exploring ancient and alternative ways of seeing the world, leading to new material and formal alternatives. Environmental historian Donald Worster calls the 19<sup>th</sup> century The Age of Ecology. I like to think this new Age has a birthday: Wednesday, April 23, 1851. It is on this day that an underemployed Harvard graduate gives a lecture at the Lyceum in Concord, Massachusetts extolling the virtues of walking. "Sauntering," he calls it, and he recommends a daily 4 hour dose of it. Half way through the talk he fires a shot across the bow. "In wildness is the preservation of the world." Not in reason, or God, or even the mechanical laws of nature; and certainly not in our managing and control of nature. Henry David Thoreau introduced to his audience that evening a concept of wildness as a process found in all things, and cultures, too; an absolutely necessary process, but one too frequently feared, controlled, tamed, and destroyed, all in the name of the new household management. Thoreau counters this sentiment. He says "All good things are wild and free." He sees, too, that a wild world cannot be completely knowable; and so ignorance, a "beautiful knowledge;" a "sympathy with intelligence" should be how we come to understand the world. In this single lecture—one that Thoreau gave more than any other,

and that he regarded as “a sort of introduction to all that [he would write thereafter]”—are the seeds of a new coordinating philosophy, with a wild ecosphere at its center; a potentially new system of meaning awaiting further enunciation. It signaled a shift in consciousness away from reductive and fixed categories and toward a living, dynamic, complex, emergent wildness. In this new age Homo *economicus* begins a transition to what geo-ecologist and environmentalist Stan Rowe called Homo *ecologicus* .

Philosophical seeds of change, like their physical counterparts, have a way of getting into the cultural “air” and emerging in new and distant places. Charles Darwin publishes *Origin of Species* in 1859. It is a radical reconfiguration of the origins and processes behind life. So too is the “idea” of national parks in a young America; and the wilderness movement. New York State constitutionally declares in 1895 a part of itself “forever wild;” The Federal Wilderness Act comes almost 70 years later. Both evolutionary biology and quantum physics point to a strange world of process, probability, chance, and creativity.

Philosophers dig into this world to produce new systems of thought. Alfred North Whitehead’s “philosophy of organism” is one such system, and it spawns process philosophy and process theology. Aldo Leopold seeks to bring ecological ideas to a wider audience with his *Sand County Almanac*, a “holy book” in Wallace Stegner’s words and a great work of philosophy in the emerging perspective. New voices emerge in agriculture and ecology: Liberty Hyde Bailey, Sir Albert Howard, J. Russell Smith, the Odum brothers, Stan Rowe. New efforts focus on soil conservation and species protection; the new agrarianism is born; there are advances in ecology, evolutionary biology and agro-ecology;

We are currently living in the midst of this exciting transition. That’s very good news!

Fast forward to 1976, nearly 125 years after Thoreau’s “Walking” lecture. Wes Jackson, a plant geneticist and one of the early founders of environmental studies, leaves his tenured professorship on the West Coast and returns to his native Kansas to start the Land Institute. In the forty years since Jackson and his small team of scientists have sought to solve what Jackson calls the ten thousand year old problem of agriculture (the mining of soil carbon and the use of the plow, monocultures and annuals, with erosion and loss of ecological integrities as a result). His solution is to farm in nature’s image: to utilize

perennial crops in mixtures. Jackson started with the grain crops because humans are primarily grass seed eaters (70% of our calories come from rice, corn, soybean and wheat; and nearly 80% of acreage around the world is in grain crops). After 40 years of work the Land Institute has developed a perennial wheat grass they call Kernza. It is just a few years away from being made available to farmers. And it marks the beginning of the first real alternative to annual monoculture agriculture first developed 10,000 years ago. Perennial varieties of sorghum, wheat, and sunflower are also being developed at the Land Institute; and around the world partner institutions are working on upland rice and other foodcrops. The Land Institute has also partnered with the Missouri Botanical Garden and botanical institutions from around the world to inventory possible wild plant varieties to be used for perennial food crops. Jackson envisions a future when all grains are grown in agro-ecosystems, in mixtures, perennially. It's on the horizon. Imagine a landscape not scraped bare every spring and treated with fertilizers and herbicides. One in which nature's wisdom is mixed with human cleverness, where conservation is a consequence of agricultural production, not something that has to be sacrificed. Jackson calls his work Natural Systems Agriculture, and it begins by acknowledging the fertility of ecosystems, and the creativity of the ecosphere. Natural Systems Agriculture seeks to heal the terrible divide begun long. It seeks alternatives to the mining operation, the extraction.

Jackson believes that because our break from nature originated in agriculture, the most important repair work must begin there first. But ecospheric thinking seems to be popping up everywhere these days. Janine Benyus introduced the world to the concept of biomimicry in her book by the same name, and highlighted its use in agriculture, energy production, manufacturing, medicine and computing. The Microbiome project at the Mayo Clinic<sup>3</sup> is just one example of medical researchers studying the human microbiome in order to understand its influence on a host of illnesses including gluten insensitivity and rheumatoid arthritis. It's part of the larger reconceptualization of humans not as individuals but as ecosystems. There's more. Ecological Economics and Industrial Ecology are emerging fields addressing old problems in new ways. And philosophers and thinkers of every stripe are applying ecospheric thinking to traditional ideas about truth, beauty,

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<sup>3</sup> <http://mayoresearch.mayo.edu/center-for-individualized-medicine/microbiome-program.asp>

divinity, knowledge, and happiness. It doesn't mean that old ideas will be trashed or thrown away. At their height the great "Isms" in history stand as examples of the human imagination at its best, and they continue to adapt and respond to their cultural contexts. Judaism and Christianity are alive and well, but unlike its ancient past, neither animal sacrifice nor the Temple, for example, is central to the practice of Judaism, and I suspect that first century Christians would find both the Vatican and the myriad variations of Christian practice across the globe incomprehensible. One can see what philosopher Alfred North Whitehead called the Creative Advance not just in religion, but in all cultural forms of expression: music, language, artifacts, systems of justice and politics, and concepts of good and evil.<sup>4</sup> It is the perennial imagination of the Ecosphere at work in all things.

After a 10,000 year extractive interlude we can once again place the perennial imagination of the Ecosphere at the center of our work in the material and formal cultures. We are well on our way toward an alternative perspective that has the potential to put us back together again; the potential to heal the ecological and social justice wounds begun in agriculture and that continue unabated in modern global capitalism; to make us less dependent on destructive extraction; to help us establish standards of morality and justice that protect human dignity and our fellow, non-human earthlings; and to find grace, beauty and love in a living universe. It has the potential to feed our minds and bodies with food and philosophy that acknowledge nature's wisdom.

There is still much to do, and we wish we could speed things along. But when such a transition arrives in its full expression changes will come quickly, like a wooden floor giving way after years of hidden decay and rot. In the meantime, let's continue the examples of the good work we find here in Ashland, and in your home places, and in so many places around the world to explore and embrace the ecosphere.

I'll leave you with a few suggestions.

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<sup>4</sup> Monarchies still exist around the world, but the first European nation to end it during a century of revolution still has a Royal Family and a beloved Queen Mother. Her picture is still on paper currency in former colonial regions (Canada and Australia, for example). Queen Elizabeth is in most ways prior to England's 17<sup>th</sup> century not a Monarch. Her role in contemporary British history has taken a mostly symbolic, nostalgic form.

Look not for just healthy food to eat, but healthy philosophy to think. We're all now expert at reading food labels. It is time to start looking for the coordinating philosophy that stands behind all the green, organic, sustainable alternatives that are presented and too often peddled to us as healthy, safe and environmentally friendly alternatives. Think of it as "concept labeling." If you see principles of an extractive economy and a nature to be subdued or ignored behind green and sustainable products, remain skeptical.

If slow food is good, so, too, should slow thinking, which is the only speed we can go when reading and applying some of this new philosophy. Find a quiet space away from all of your favorite distractions and engage some of it.

Demand an education without extraction. Or at least begin to explore the alternatives. One example of an emerging alternative approach also comes out of the Land Institute. Wes Jackson is working with a group of us to bring an Ecosphere Studies curriculum to colleges and universities in the next decade. Astrology and alchemy were once part of a world-class university education, and students were taught that the Earth was the center of the universe and that there were two spheres: a heavenly sphere and an earthy sphere. Not anymore. Wes Jackson thinks some of the current university curriculum—actually nearly all of it—needs similar revisions along ecospheric lines. He'd love to tell you more about it. So would I. Please invite one or both of us back!

Look for examples of ecospheric and ecosystems thinking in the news. I seem them more and more. A sociologist studying poverty in terms of relationships and processes<sup>5</sup>; discoveries of plant intelligence, and the ability of plants and trees to communicate utilizing the Earth's natural internet: fungi.<sup>6</sup> Even bacteria are now seen as able to communicate.<sup>7</sup> Evidence of mental capacities in birds and plants that can count.<sup>8</sup> The rise of new academic

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<sup>5</sup> <http://chronicle.com/article/The-Great-Expectations-of/235413>

<sup>6</sup> [https://www.ted.com/talks/paul\\_stamets\\_on\\_6\\_ways\\_mushrooms\\_can\\_save\\_the\\_world](https://www.ted.com/talks/paul_stamets_on_6_ways_mushrooms_can_save_the_world)  
[http://www.nytimes.com/2016/01/30/world/europe/german-forest-ranger-finds-that-trees-have-social-networks-too.html?hp&action=click&pgtype=Homepage&clickSource=story-heading&module=second-column-region%C2%AEion%3Dtop-news&WT.nav=top-news&\\_r=2](http://www.nytimes.com/2016/01/30/world/europe/german-forest-ranger-finds-that-trees-have-social-networks-too.html?hp&action=click&pgtype=Homepage&clickSource=story-heading&module=second-column-region%C2%AEion%3Dtop-news&WT.nav=top-news&_r=2)

<sup>7</sup> [http://www.ted.com/talks/bonnie\\_bassler\\_on\\_how\\_bacteria\\_communicate](http://www.ted.com/talks/bonnie_bassler_on_how_bacteria_communicate)

<sup>8</sup> <http://www.csmonitor.com/Science/2016/0202/Ravens-might-possess-a-Theory-of-Mind-say-scientists>  
[http://www.nytimes.com/video/science/100000004177295/sciencetake-plants-can-count.html?emc=edit\\_th\\_20160203&nl=todaysheadlines&nid=35240847](http://www.nytimes.com/video/science/100000004177295/sciencetake-plants-can-count.html?emc=edit_th_20160203&nl=todaysheadlines&nid=35240847)

disciplines like quantum biology.<sup>9</sup> There are at least a dozen TED talks that explore these and other ideas.<sup>10</sup> And I see glimpses of ecospheric thinking in Pope Francis' Encyclical Letter "On Care For Our Common Home."<sup>11</sup> If you haven't already, please read this amazing work. Another more recent letter, this one to the next generation of artists, penned by jazz greats Wayne Shorter and Herbie Hancock.<sup>12</sup> It's all about the need for openness and creativity in the service of compassion and healing. Very powerful. And just this weekend a musician friend sent me a link to music-genre map of sorts with almost 1400 distinct musical genres.<sup>13</sup> I love it when this sort of thing happens.

A diet of perennial food and philosophy will make a difference; it already has. Should it reach a full flowering as a coordinating philosophy—a Perennial-ISM—it has the potential to foster happiness, beauty, justice, prosperity and love to be shared with the whole of an ecosphere and a culture alive. It will foster deep roots in our minds, our soils, in our relationships and communities, in our food, in our economics and politics; in our cultures.

In the meantime and reminiscent of Thoreau, let us recall that well-known character of children's literature—Max<sup>14</sup>, who was called "Wild Thing!" by his mother, and who was sent to bed without his dinner.

And let us consider his defiant exclamation: "**Let the Wild Rumpus Start!**" to be as good a statement as one can find to describe our most ancient origins and the perennial imagination at work in all things. And may we find humility, courage and insight to allow this creative and eternal wild rumpus to continue. Namaste.

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<sup>9</sup>[https://www.ted.com/talks/jim\\_al\\_khalili\\_how\\_quantum\\_biology\\_might\\_explain\\_life\\_s\\_biggest\\_questions?language=en](https://www.ted.com/talks/jim_al_khalili_how_quantum_biology_might_explain_life_s_biggest_questions?language=en)

<sup>10</sup> <https://www.youtube.com/watch?v=yqc9zX04DXs>  
[http://www.ted.com/talks/stefano\\_mancuso\\_the\\_roots\\_of\\_plant\\_intelligence](http://www.ted.com/talks/stefano_mancuso_the_roots_of_plant_intelligence)  
[http://www.ted.com/talks/wade\\_davis\\_on\\_the\\_worldwide\\_web\\_of\\_belief\\_and\\_ritual](http://www.ted.com/talks/wade_davis_on_the_worldwide_web_of_belief_and_ritual)  
<https://www.youtube.com/watch?v=bL7vKOpOvKI>

<sup>11</sup> [http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco\\_20150524\\_enciclica-laudato-si.html](http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html)

<sup>12</sup> <http://nesthq.com/wayne-shorter-herbie-hancock-open-letter/>

<sup>13</sup> <http://everynoise.com/engenremap.html>

<sup>14</sup> *Where the Wild Things Are*, Maurice Sendak, HarperCollins, 2012. (Originally published in 1964)

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