

Magic and the Machine:

Notes on Technology and Animism in an Era of Ecological Wipe-Out

by David Abram

A hallmark of the puzzling era we are living through is a remarkable juxtaposition of two apparently contrary trends. Among many circles and spheres within society there exists a buoyant sense of possibility, an upbeat and expectant optimism with regard to the near and longterm future. Yet in other social circles, some of which overlap with those just mentioned, there is a spreading despondency and gloom that weighs down persons whenever they contemplate our collective future, an overwhelming hopelessness that interferes with their ability to even *envision* a livable future a generation or two from now.

These very different collective moods are generally – though not always – carried by different groups of people. Those who spend a majority of their time engaged with new media, or who rarely venture outside the bustling life of our large cities, are witness and sometimes party to the unceasing creativity that brings stunning new inventions and – with them -- new forms of association, communication, and entertainment into our lives with an unprecedented rapidity; these are those who, inevitably, find themselves filled with hope and an a sense of open and unbounded possibility when asked to reflect upon the future. For many of these citizens of the present, the possibilities are endless; many intuit that new technologies promise ever greater freedom to our kind. They anticipate, with a sense of wonder bordering on awe, the advent of ever more complex robotics, and the ability of nanotechnology to eliminate many of the world's ills – they look forward to the eradication of disease, and the chance for humankind, augmented by or in tandem with new technologies, to determine our own future and to spread, soon enough, beyond the earth to other planets and beyond.

Then there are those persons who spend a good deal of their time outside the large urban and suburban centers, or at least out of doors within those cities, and hence in direct relation to the wider-than-human collective of earthly life; it is many of these that are beset by a deepening malaise. Attending to their faltering crops or noting the dwindling snowpack on the mountains above town, puzzled by the shifting migration patterns of birds whose flocks no longer return to the region, wondering at the blight that's shrinking the leaves on the forest trees and alarmed by the northward advance of yet another, insect-borne illness infecting more and more friends each year, many find themselves in a deepening state of shock regarding the terrifying signs of ecological breakdown and runaway climate change. They've allowed a few years for this recent hiatus in the seasonal pattern to right itself, but when the expected correction fails to materialize -- when the patterns they've known from childhood, and from their grandparents' childhoods -- never seem to reassert themselves, then an uncanny form of anxiety begins to darken their dreams and lend a bitter taste to their saliva whenever they swallow -- an anxiety that seems less for themselves or even for their children than it is for the whole of the breathing landscape that's supported and sustained every aspect of human life until now; suddenly this terrain, the taken-for-granted ground of our lives and the enabling backdrop for all our conviviality, seems unsure and unstable.

Yet -- as I'm sure many of you would attest -- these two very different outlooks are by no means carried by entirely different groups of people; they can also be felt by the very *same* individuals at different moments of their life, or even at different moments within a day. This is especially true now that almost every vocation (and the preponderance of contemporary social life) involves regularly engaging to some extent with digital technology and so being exposed to the creativity and dynamism of its ongoing evolution. And even those persons entirely caught up within the human hubbub of urban life or wholly enmeshed in online forms of interaction can no longer avoid coming into contact with news of ecological calamity; even if their city has not yet succumbed to rolling power-outages, or had its streets inundated by the rising floodwaters, they still regularly bump into images of intensifying forest fires and never-

before-seen hurricane winds as those images and video-clips bounce around the digital ether. The coverage of news regarding the more-than-human natural world by modern media remains crazily miniscule relative to the coverage of exclusively human goings on -- of human violence and personal scandals -- yet not even the most blinkered news organizations can avoid speaking of tornados and tsunamis when these threaten large swaths of the human population.

And so we all come into contact with both trends, and some persons are afflicted -- though at different moments -- by both moods. At one moment, she feels the shuddering horror of the extinction spasm now gripping our planet, at another she's enlivened by giddy optimism, inspired by the techno-utopian zeal that courses like a river of money through the world of software development, social network apps, and high-tech innovation. In those who are regularly captured by both states of mind, we might expect to see these contrary moods begin to blur and blend into something new and insightful -- an understanding of how these two intensifying dynamics actually inform one another. But such is not the case; the two states of mind are so *incommensurable* that each seems unable to communicate with the other, and so such persons are buffeted back and forth, sometimes afloat with technological optimism, at other times struck dumb with a foreboding that seems to intensify with each passing season.

How, then, can we make sense of this curious juxtaposition? What are the actual relations between these two apparently contrary trends -- deepening ecological catastrophe (with its attendant tone of melancholy and the ease with which it provokes the apocalyptic imagination) and rapidly burgeoning technology (with its attendant technological utopianism)? Are there hidden causal lines to be drawn between these? Is it possible, for instance, that the many new and onrushing technologies currently bursting on the scene are arriving *just in time* to avert ecological catastrophe -- indeed, have they been somehow called into being by the unprecedented stress in which our planet now finds itself? Is it not likely that the new forms of connectivity enabled by

digital media hold the possibility for unprecedented, rapid societal transformation to meet the biospheric crises now upon us?

Or, on the contrary, is the intensive mining and manufacture necessary to the new technologies a key factor in the emergence of these worldwide environmental stresses? Obviously the burning of fossil fuel needed to power an earlier generation of technologies — including the electricity that lights our cities, heats our workplaces, and fires the automobiles, trains, and airplanes upon which we've come to depend, and the shipping routes that undergird so much of contemporary commerce — has been a primary factor in the onset and intensification of climate destabilization, as the extraction of such fuel has played a large role in the degradation of innumerable local ecosystems and the consequent damage to other species. Still, we may wonder: Does the emergence of "Big Data" made possible by digital technology now enable research that promises to alleviate those very stresses on the planet; is not the widespread use of computer modeling and simulations now hastening the rapid deployment of sustainable and sustaining ways of harvesting energy that might enhance, rather than deplete, the integrity of the waters, the winds, and the soils?

Without a doubt there exist a complex range of relationships — some subtle, some more explicit — between the rapid deterioration of ecological integrities and the rapid growth of digital technologies. Here I will focus primarily on some unnoticed perceptual and, to a lesser extent, psychological dynamics that hold between these two contrary trends. Attention to the perceptual dimension of our relationship to the enfolding earth, and to the sensory relationships that we sustain with the myriad new technologies constantly claiming our engagement, may seem an overly subtle and indirect approach to these massive, material trends now so profoundly influencing the human collective and the more-than-human world in which humankind is embedded. Yet sensory perception is an underlying element in both of the contrary dynamics whose hidden relations we are here seeking; sensory experience is a common denominator in both our relation to technology and our relation to the rest of the animate earth. And so

careful attention to the perceptual dimension may throw into curious relief the interaction between these two different but overlapping spheres of human existence.

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An extended argument laced through many of my writings [though laid out with special care, and with an abundance of evidence, in my first book, *The Spell of the Sensuous*], concerns the human propensity for animistic engagement with any aspect of the perceptual field. I use the term “animism” fairly broadly, to refer to the perceptual style common to many indigenous, hunting and gathering cultures, whose discourse simply does not bear any hard and fast distinction between things that are *animate* and others that are *inanimate*. Rather, for most traditionally oral, indigenous cultures that we know of, any and *every* phenomenon is potentially animate. To the members of such communities, all things are assumed to have their own pulse, their own inner spontaneity or dynamism. All things have *agency*, the capacity to act – although some things (like rocks or mountains) clearly move much slower than other things (like walrus or dragonflies). Such assumptions, or – more precisely -- such styles of perception, show themselves in exceedingly different ways in diverse indigenous traditions, yet Western ethnologists in the latter half of the nineteenth century could not help but notice this remarkable commonality among the divergent tribes they encountered and struggled to study and sometimes managed to learn from. In the shorthand common to some of these early anthropologists, the members of such cultures seemed to respond to their surroundings as though *all things were alive and (at least potentially) aware*. Further, from the animistic perspective it seemed that all things were felt to have the power of meaningful speech. All things were expressive (although, of course, very few of them spoke in *words*).

The conventional interpretation of such ways of encountering the world, among social scientists, has held that traditional, tribal persons are confusedly *projecting* human attributes – such as life and consciousness – into nonhuman and ostensibly inanimate phenomena. Yet a range of recent research has called such facile interpretations into question. Some scholars have shown that the early anthropological

interpretation of animism — as a childlike projection of soul, or spirit, into purely material phenomena — itself rests upon the very modern assumption that the human soul, or mind, is thoroughly distinct from the body, an assumption undermined by much current research and reflection. Others have argued that the animistic expectation of vitality and awareness in other-than-human phenomena must be understood, first and foremost, as a highly practical way to navigate through the uncertain and often unpredictable world of wild nature. Anticipating some modicum of active agency in every phenomenon one encounters ensures that one will stay exquisitely attentive to the things that surround, and so will be less likely to succumb to non-apparent but nevertheless lethal dangers, from stealthy predators to falling boulders. *[[see, for instance, Stewart Guthrie, [Faces in the Clouds](#); as well as many of the essays in Graham Harvey, ed., [A Handbook of Animism](#)]].*

My own work has contributed to this reappraisal of animism but from a more experiential, phenomenological direction. I have suggested, and marshaled much evidence to demonstrate, that animistic perception is utterly normal for the human organism (a kind of default setting — to use a technological metaphor — for our species). That indeed, in the absence of intervening technologies, the human senses spontaneously encounter the sensorial surroundings as a field of sensitive and sentient powers. Our most immediate experience of the earthly world, and of the myriad bodies that compose this world, is of a multiply animate cosmos wherein no thing, no sensible presence or body, is definitively void of expressive agency or life.

To be sure, such participatory experience is very far from our current feel for things in the midst of contemporary, hypermodern civilization. Few people, today, when they're cycling past a stand of oak trees, sense that those trees are sensing them; we do not feel the breeze gusting around us as a sensitive and sentient presence, and upon arriving at our place of work and settling down to the day's tasks, we don't concern ourselves that the chairs we sit in register our presence or that the walls of the room are affected by what we say or do.

It is commonly assumed that such animistic intuitions have vanished from much of the civilized world – that animism was initially dispelled by the spread of the great religious traditions, and then more thoroughly banished by the spread of the various sciences – and hence that such participatory experience is largely alien to industrial and technologically-informed humankind in the twentieth and twenty-first centuries. My own research suggests otherwise. It is not only that diverse aboriginal traditions have continued to unfurl and develop in various pockets within western civilization, and to contribute elements of their own, deeply participatory lifeways to the colonial powers that tried to subjugate or subsume them. But also that the dominant, western culture itself has itself been deeply informed and affected by intensely participatory, animistic forms of experience.

For as I've already implied, animistic experience – the instinctive experience of reciprocity or exchange between the perceiver and the perceived – lies at heart of all human perception. While this primary participatory experience may be *displaced* by our engagement with particular tools and technologies, it can never entirely be dispelled. Rather, different technologies tend to capture and channel our instinctive, animistic proclivities in particular ways.

For example, one early technology that profoundly altered our human relation to the animate earth – a technology which thoroughly conditioned, and opened the way for, all subsequent technologies arising in the Western hemisphere – is today so ubiquitous that we tend to take it for granted, and forget that it *is* indeed a technology: the alphabet.

The alphabet – which was foundational to many of the collective habits and cognitive patterns radiating from the Mediterranean throughout Europe and ultimately the Americas – is thoroughly implicated in the origin of all three of the monotheistic traditions (the three Religions of the Book), as it was formative for the birth of western philosophy in ancient Athens. Much later, with the advent of the printing press, the alphabet catalyzed the Protestant revolution and the European Enlightenment, enabling the invention and spread of Western science. Indeed this remarkable technology has so

thoroughly informed the thought-style of this hemisphere that everything commonly termed *Western civilization* should more precisely be spoken of as *alphabetized civilization*.

Upon learning the extent to which phonetic literacy figures in the rise of monotheism and later, the extent to which the proliferation of reading and writing made possible by the printing press figured in both the Protestant and then the Scientific Revolution, most persons – like most scholars – conclude that reading and writing directly enable a form of reason or rationality that rapidly loosens and breaks free from the superstitious, animistic beliefs to which non-writing, oral cultures are presumably prone, and to which most citizens of European and American civilization are presumably immune... I have argued, however, that alphabetic literacy can best be understood as a highly concentrated form of animism.

Consider the refusal of our indigenous forbears – and the indigenous allies among us – to assume that language, or meaningful speech, is an exclusively human power; ponder their assumption that all things have at least the potential for meaningful utterance. Consider the propensity of such oral persons to find themselves being addressed, or spoken to, by various other beings in the visible, sensible surroundings – by birds, by Coyote, by the tracks of animals, by the rustling, whispering leaves of an aspen tree, or even by the blossoms of a particular medicinal herb – it's stems bouncing and waving, when one is out searching the woods for the right cure for a client's illness. To the animistic frame of mind, any sound can be a voice, any movement can be a gesture laden with expressive meaning.

Now, consider the act of reading, say, the morning newspaper. You come into the kitchen, brew a cup of coffee, pick up the paper and focus your eyes upon the written letters, upon those bits of ink arrayed in lines across the page. And straightaway you hear voices – the phantom voice of the writer, or the voice of the president and that of the German Chancellor Angela Merkel as they converse at the G20 meeting in Turkey. You hear conversations, and you see visions of events unfolding in other places. This is animism, folks! Maybe I can illustrate this with a simple experiment, here...

Demonstration with Card:

We see what it says. It says something to us. It says, it speaks. This is not that different from a Hopi elder who is walking outside the pueblo when she notices a rock covered in crinkly red and grey lichens. She focuses her eyes on the lichen, and suddenly hears the rock addressing her. Or a Lakota man out hunting in the forest who is stopped short by a spider weaving its delicate web between two branches across the trail. He focuses his eyes upon the spider, letting himself be drawn into a trance as he sees her set the silken struts of her web, and then unexpectedly hears, or rather feels, the spider speaking to him. It's the same with our newspaper: we let our focus be drawn by a particular article, and we focus our gaze upon these ostensibly inert, inanimate bits of ink on the page, and straightaway we feel the page speaking to us; we hear spoken words, we see visions. Much as other animals, plants, and even "inanimate" rivers once speak to our indigenous, oral ancestors, so the "inanimate" letters on the page now speak to us! This is a form of animism that we take for granted, but it is animism nonetheless, as mysterious as a talking spider, or a speaking boulder.

And in fact, it is only when a people learns to read these written letters that the land begins to fall silent. Only as our senses transfer their animating magic to the written word do the trees become mute, the other animals fall dumb.

Because reading is an intensely concentrated form of animism. To learn to read we had to break the spontaneous participation of our eyes and ears in the surrounding landscape, where they had ceaselessly converged in the synaesthetic encounter with animals, plants, clouds, mountainsides, and streams, in order to recouple those senses on the flat surface of the page. I don't know about you, but I remember very well the intensity with which I had to train my visual focus upon the letters in order to make each letter trigger a specific sound made by the human mouth. To the point that wherever I now see the letter *K* I hear "k", whenever I see an *M* I hear "mmm." So where our tribal

ancestors once engaged in an animistic participation with trees, bent twigs, animal tracks, cliff-faces, and cloudshapes, we now practice the same thing with our own signs, our own scratches and scripts. And while the tracks of bear or the bouncing branch of a spruce tree might speak in strange ways (and say very weird or unexpected things), the written letters always speak with a human voice. Literacy is a form of magic; a form of animistic participation so intensely concentrated that it has effectively eclipsed all of the other forms of participation in which we once engaged.

And so...far from enacting a clear break with animism, and from the non-rational forms of experience to which oral cultures were prone, alphabetic literacy can be recognized as a particularly potent form of animism, one which shifts the locus of magic – or meaning – away from our interactions with the wider, animate landscape or place to the relation between ourselves and our own signs. Only as alphabetic literacy comes into a previously oral culture (often brought, first, by Christian missionaries teaching how to read the Good Book) does that culture get the curious idea that language is an exclusively human possession – and it is at that moment that the land begins to fall mute. It no longer speaks, which is to say, the living land no longer is felt to hold and carry its own manifold meanings. The only real meanings that can be said to reside in the surrounding earth are those that we humans choose to give to particular landforms. Increasingly, the surrounding earth comes to be seen as a largely passive backdrop against which human events and human history unfolds.

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We might wonder if there is something inherently unstable in this state of affairs. If human culture evolved for 100,000 to 200,000 years in a thoroughly animistic context, wherein our ancestors were attentively negotiating relationships – sometimes fraught and sometimes nourishing -- with most every aspect of the sensuous cosmos, then it has been only a tiny shred of that time since various human groups began to enter into a more exclusive interchange with their own written signs, and so began to experience

the rest of nature as a set of phenomena without sentience or subjectivity. The uncanny solitude in which literate humankind found itself was offset, no doubt, by the remarkable freedom granted by the written word, by the new capacity it brought for reflection and personal cultivation. And yet it *was* an uncanny solitude, a weird loneliness in relation to the rest of a land that had once spoken to humankind in a multiplicity of expressive tongues and gestures. If that wider and more diverse conversation had been our felt context for 98 or 99 percent of our tenure, as creatures of culture, within this broad biosphere, then that experience must have shaped a great deal of who we are, and how we still feel ourselves, informing even the shape of our imagination. Some hunkering, some yearning for a less solitary mode of existence, would probably still pulse within our neurons, motivating – unbeknownst to our conscious awareness – the dreams we strive to create.

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So anyway, I've just sketched out a kind of phenomenological or sensorial analysis of one of the most consequential of western technologies – the technology of the alphabet. And of course it's the alphabet, and the new distance the alphabet gave us from the more-than-human natural world, that enabled and set the stage for all of the later, machinic inventions that took shape in the western world, from the steam engine to the automobile and the airplane and space-flight. The alphabet was the audacious and simple communication technology that opened the way for the many innovations in electronic interchange that burst upon the scene in the last century and a half, from the telegraph and the telephone to the radio, from cinema and television to the personal computer.

So let's consider a few of the new technologies that have been muscling their way into our lives and living spaces over the last decade. How do these new, digital technologies affect our senses, and our sensorial relation to the sensuous world around us. If, as I have been suggesting, the most ordinary, human experience of the sensuous

surroundings – in the absence of intervening technologies – is of a multiply animate world wherein no entity (whether a crow, or a forest, or a river, or a stormcloud) is definitely void of expressive agency or life, how do our new, digital technologies make use of, co-opt or transform this instinctive participation between the perceiver and what he or she perceives? Well, let's see...

Consider our curious propensity for designing gadgets that talk to us. The first I was aware of was a talking refrigerator in a friend's house. The thing would actually greet him when he opened the refrigerator door for the first time each morning: "Good morning, Philip; it's 6:15." It would speak up whenever the ice-box was too full, or needed defrosting, or the lightbulb needed changing. Did my friend need this? I don't think so; presumably he could tell that the lightbulb needed changing because the light didn't come on. But for some reason, he loved it. When I went looking for this online, I found this:

Put the chocolate down! The talking diet fridge that keeps your weight in check

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The new ThinQ Smart refrigerator, which goes on sale in the UK for around £2,000 later this year, has an in-built dietician, which can be programmed to keep an eye on what you're eating - and tell you when you've made an unhealthy choice. LG's Smart fridge scans every item that goes in and can suggest healthy eating options to users

Users programme their BMI and weight loss targets into the fridge, which then uses in-built smart camera and voice recognition technology to ascertain who is opening the fridge. It can then access that person's details and use them to suggest healthier options, recipes and meal ideas.

The company, LG, says that their voice technology "makes communicating with LG's smart refrigerator (or with our new smart washing machine or smart oven) much like chatting with a close friend."

Then, of course, there's Siri, the humble virtual assistant that's tucked inside your friendly iPhone. And who some of us waste a lot of time trying to have intelligent

conversations with. Sometimes she, or he, seems pretty darn smart. As you might expect, Siri is really pretty good at math. Even if you ask him or her to divide zero by zero, you'll get a pretty solid answer. [Siri, what is zero divided by zero?](#) [Siri, Which came first, the chicken cross the egg?](#) [How much wood would a woodchuck chuck...](#)

After a while, though, most people realize that the relationship is not going to get very far. But it's nice to have someone, or something, to talk to when you're lonely.

But isn't it obvious that by programming our devices with "natural language user interfaces" we are just trying to recreate, in a clumsy fashion, something of that old, ancestral sense of living in a world where all things have the potential for expressive speech? I mean we're trying, we're trying to recreate that magic. But it doesn't really satisfy. Indeed it's a pretty paltry substitute... Because, after all, the only things that now speak to us are our own artifacts, our humanly engineered appliances and automobiles, and so, despite the flimsy gesture toward a kind of magical reality, the fact is that we're still speaking only to ourselves, to things that we have programmed to talk back to us. And so, after the initial novelty, which maybe lasts about three minutes, there's nothing here that can surprise us, or yield a sense that we're in contact and interchange with powers or beings that are strangely different from ourselves.

Worst of all, these artifacts talk entirely in words, indeed they speak our own language of English or French or Chinese. But they speak it without any *affect*, without any feeling whatsoever; the words come to us not as an expression of how that refrigerator – with its sleek paint job and its cool compartments laden with wilting lettuce leaves and mayonnaise and some forgotten pickles now growing black and fuzzy with mold – not as an expression of how the rectangular intelligence of that refrigerator actually feels, but as the sterile and endlessly reiterated bodiless monotone reflecting only the monotonous boredom of a series of programmers working in sterile factory-spaces. Far from opening a sense of wonder, these artifacts offer only a sham facsimile of wonder, and speaking with them draws one into an airless space where feeling falls away, a vapid and virtual zone where real wonder goes to die.

But of course talking objects was only the beginning. Let's turn our attention to the real technological transformation currently underway, the rapid advent of "ubiquitous computing," otherwise known as the Internet of Things, or -- appropriately -- "Enchanted Objects."

This paradigm is also described as pervasive computing,^[1] [ambient intelligence](#),^[2] [ambient media](#)^[3] "things that think' or 'everyware' (instead of hardware or software, now its 'everyware').^[4]

This is the growing trend towards embedding microprocessors in all sorts of everyday things so that those things can communicate with each other, as well as with us. It's known as the internet of things, because these objects will be exchanging information, steadily, with the internet so that they will be able to figure out all sorts of problems for you. For instance, umbrellas that start glowing when there's a forecast for rain. Doorbells that ring with a different sound for people you know than the sound for strangers, or doorbells that start ringing with the signature sound of your son or your daughter, or your spouse, whenever that family member is on her way home. The big vision animating all this is that of building intelligence, or at least computing power, into all of the things that we already use, not just refrigerators, but coffee pots, bicycles, shovels, toys, etcetera.

Trash cans that only call to have the garbage company pick them up when they are completely full. And of course *wearable* technology as well, not just watches and glasses but clothing with all sorts of sensors and software built into it, so that you and I become one of the things that are connected to and through the internet to all the other thinking things around us. *Like the jacket already designed that gives you a hug every time someone likes your Facebook post.* Last summer, British Airways gave passengers flying from New York to London blankets embedded with neurosensors to track how they were feeling. Apparently this was more scientific than simply asking them.

When the fiber optics woven into the blanket turned red, flight attendants knew that the passengers were feeling stressed and anxious. Blue blankets were a sign that the passenger was feeling calm and relaxed.

So in this way the airline learned that passengers were most stressed when the airplane was bouncing around in turbulence, and that they were most relaxed when they were sleeping. Isn't that brilliant?

And with sensors embedded in the doors and the walls of buildings, as well as in our clothing, stores will recognize us when we walk in, greeting us by name and displaying on our headsets or glasses the many items we most like to buy, or should buy, anyway, because our smart refrigerator at home says we're running low. Indeed, with the facial recognition software that's available on the internet, we'll be able to see, above their heads the names and pedigree of every person we meet on the street, as well as their criminal record. Isn't that cool?

Let's leave aside, for the moment, the slight concern that transnational corporations as well as the National Security Administration will thus have access to every facet of our personal lives, since pretty much everything we touch will record and send data regarding that interaction to the integrated global network of things, generating more and more big data. And let's put aside the minor inconvenience that once our automobiles, our houses, and our utilities and our bodily clothing all become electronically integrated in this way, various hackers with a modicum of creativity will be able to send whole cities careening into chaos... But isn't it obvious that this whole huge trend, which is ostensibly motivated by the aim for ever-greater convenience and efficiency, is tacitly driven by an impulse to recreate, somehow, the animistic experience common to virtually all of our tribal ancestors? The experience of living in a world wherein everything is alive, awake, and aware? Wherein rivers feel the presence of the salmon swimming within them, while the ground feels our steps and the oak trees sense our presence, and the moon is nourished by our prayers, and the shadow of a sacred mountain holds blessings for those who step within it?

And maybe this attempt to recreate that old experience of intimacy with the world around us will actually succeed. It's certainly giving rise to all sorts of fascinating gadgets and gizmos and whimsical inventions. But it's also bound to disappoint. Because the difficult magic of indigenous experience, the utter weirdness and dark wonder that lives in any deeply indigenous, place-based relation to the earth, is the felt sense of being in contact and communion with forms of sensitivity and sentience that are entirely *different* from one's own – the experience of being in felt relation with intelligences that are *radically other* from one's own human style of intelligence. From praising and sometimes propitiating a whole range of elemental and often dangerous powers, some of them tiny and some of them vast, that compose or inform or inhabit the sensuous surroundings.

But with the intelligent objects that inhabit the always-online world of the *internet of things*, well, there's no real otherness there. I mean, there's the otherness of the software designers, and of the other people living in their own wired houses, although just how *other* anybody will be when we're all plugged into the same integrated network and using various forms of the same electronic devices is an open question. But my point is that there's no *radical* otherness involved; it's all humanly programmed, and its inhabited by humans and our own humanly built artifacts; its basically all a big extension of the human nervous system. As we enter more and more into the world of ubiquitous computing and the internet of things that think, we basically seal ourselves further and further into an exclusively human field of interactions. [We enter into a bizarre kind of intra-species incest.](#)

Yet it's the otherness of things – the weirdly different awareness of a humpback whale, the strange perspective of an orb-weaving spider spinning the cosmos out of her abdomen, the moodiness of a thunderstorm, or the complex intelligence of an old growth forest dank with mushrooms and bracket fungi, humming with insects and haunted by owls – it's the wild, more-than-human otherness of these powers that makes any attentive relation with these beings a genuine form of magic, a trancelike negotiation between outrageously divergent worlds.

Without such radical otherness, there's no magic. Wandering around inside a huge extension of our own nervous system is not likely to bring a renewal of creaturely wonder or a recovery of ancestral capacities. It may keep us fascinated for a time, but also vaguely unsatisfied, and so always thirsty for the next invention, the next gadget that might finally satisfy our craving, might *assuage* our vague sense that something momentous is missing.... Except it won't.

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Let's look closer at one aspect of this brave new world that most of us are already using quite a lot: GPS, or the Global Positioning System. This is a nifty technology that surreptitiously crept into our lives without many of us giving it a moment's thought. It's easy for us to use, it's convenient, and it just happened to come along as a nifty element within our cell phone, so why not? Without any public or private reflection, most people just started using this thing that often talks to us in that soporific voice: "In forty five yards, turn right onto Forest Glade....turn right. In fifty yards, turn left onto Cloud Cukoo lane. In twenty yards, turn left onto Cloud Cukoo Lane. In twelve feet, turn left onto Cloud Cukoo Lane. Try not to run over the chicken. ["Siri, why did the chicken cross the road?"] "In 122 yards, 6 feet , and three inches, turn right. Your destination will be in your face." Nobody considered with any care what might be lost if one becomes dependent upon this technology: our ability to orient in space. Hence in the space of a single decade, we humans are forfeiting – are short-circuiting – the most ancient and visceral attunement between our animal body and the animate earth, which is our orienting capacity, our never-entirely-conscious ability to find our way around and through the local terrain. This is something we inherited from our primate ancestors, handed down to them by all the other animals in our evolutionary lineage, all the way back to those ancestral fish navigating the oceans. (Think of the migrating salmon who somehow after two or three years in the open ocean find their way back to the very same river, the very same tributary, the very same tiny stream where they were hatched. Consider the deep somatic attunement by which a salmon feels its way between faint electromagnetic anomalies, riding a particular angle of sun as it filters

down through the rippled surface, gliding with certain currents and plunging up against others, dreaming its way through gradients of scent and taste toward a particular bend of gravel and streamside shadow. That's our own ancestry!) Like those fish, and like all of our fellow mammals, our bodies have co-evolved with the dynamic shapes and patterns of the breathing earth, as our animal eyes are tuned to the textures of light and shadow, and our skin to subtle changes in the air. We are born of this earth, and so are primed to be in relation to it; *we can find our way around it much as a newborn is able to feel its way across the mother's body to where the milk fountains forth.* But now, using GPS systems, we're no longer engaging that old rapport between our bodily senses and the earthly sensuous. We're no longer looking around, unconsciously noticing the visual patterns of the place we are in, no longer noting the shifting shadows and tacitly registering various landmarks as we pass them, because we're synapsed to the screen, or taking our directions from Siri – who's taking *her* directions from a complex of 32 satellites orbiting the earth twelve and a half thousand miles over our heads! Talk about displacements! We no longer know where we are anymore without GPS to tell us; we no longer really inhabit our places anymore, since we're living our lives and interacting with the local earth partly via satellite! Some of you must know of the research done with cab drivers in London...comparing MRI scans of those cabbies who have used GPS for a year or more with other cabbies who rely solely on their experience and their remembered relation to the streets of London. Those who used GPS had a much smaller hippocampus than those who relied upon their own bodily intelligence. I have several friends who, knowing my own rich interest in the relation to place, have told me with varying degrees of dismay that after using GPS for over a year to find their way around, they are no longer able to find their way without it. That's painful, and sad. It's the forfeiting of something so old, so precious, so intimately a part of us that we never even noticed it, and so we don't register when it's gone.

Sadder still, using GPS, we no longer experience the delicious delirium of getting lost. I mean, *really lost* out in the woods or the mountains. And so we know longer experience the incredible heightening of our animal senses, and the keen synaesthetic

attention to every nuance and subtlety of the land around us that is triggered by getting lost... Here's a short poem, by David Wagoner, that gets at what I'm speaking of. It's called "Lost":

Stand still. The trees ahead and bushes beside you
Are not lost. Wherever you are is called Here,
And you must treat it as a powerful stranger,
Must ask permission to know it and be known.
The forest breathes. Listen. It answers,
I have made this place around you.
If you leave it, you may come back again, saying Here.
No two trees are the same to Raven.
No two branches are the same to Wren.
If what a tree or a bush does is lost on you,
You are surely lost. Stand still. The forest knows
Where you are. You must let it find you.

I mean, many people have speculated about the apparent ability of tribal, seafaring peoples to find their way across the broad ocean by tasting the wind, and reading the weather, and feeling the changes within the ocean currents, by conversing with the patterns in the night sky. And indeed, many anthropologists have commented on the uncanny capacity of indigenous persons on every continent to always know where they are in the vast landscape, even in a dense forest without any obvious landmarks; an innate orienting ability that comes from being on intimate terms with the rocky ground, with the local flora, with the cycles of the sun and the moon and the stars. Global Positioning Systems – or GPS – seem to replicate this innate fairly magical capacity to always know just where we are in the land, but instead of this knowledge arising from our felt, bodily intimacy and rapport with the myriad plants, and elements, and landforms around us – that is, from our internal relation to the enfolding earth -- here the knowledge arrives as a disembodied calculation by a computer constantly receiving signals from a set of 32 other machines orbiting the planet far outside the earth's atmosphere.

But it's not just the GPS that comes with our smart phone, it's the smart phone itself, this piece of paraphernalia that no-one, today, thinks they can do without. The smart phone – this gadget that enables people in other places to reach us no matter where we are or what we're doing, that enables us to dial up a friend on the far side of the world – a person we've not thought of or spoken to in years – and then suddenly be there, speaking to her way over there in Japan, while she replies to me, over here in Indiana, where I hear her voice inside my ear, almost as if its inside my head, while my voice is sounding inside her head! This is quite obviously an attempt to recreate the experience of telepathy, or clairvoyance – the ability to enter the mind of another, or to feel them entering your mind; to hear their thoughts within your own head. Or to know things that are happening at a distance, events unfolding far away from you, even as those events are happening. Such a phenomenon (which many modern people do not believe exists) is nonetheless spoken of, in the modern world, as “extrasensory perception.” But this name -- extrasensory perception – makes evident the very mechanical, Cartesian view that we have of our bodily senses. The fact is that this kind of clairvoyance is regularly spoken of -- and, I trust, experienced -- by individuals within traditional, indigenous hunting and gathering peoples. But there is nothing supernatural or extra-sensory about it. The phenomenon relies entirely upon the remarkable capacity of our bodily senses to play off of and blend and inform one another – a capacity referred to as synaesthesia – when those senses feel into and participate the manifold facets of the local, sensuous surroundings. When an indigenous hunter, while tracking a deer or perhaps a brown bear, tunes his or her senses to the calls and cries of birds, as well as to the location and flight patterns of those birds, and also to the calls and movements of other small animals, while also smelling the air and watching the shifts in the wind as it jostles the branches or rattles the leaves of nearby trees, then it often happens that he will abruptly receive an image of that deer where it is foraging in a distant part of the forest, and if he quietly makes his way to that place he will discover his prey just there, at that spot. Sensory perception is here a kind of glue, binding one's individual nervous system into the larger ecosystem. I'll say that again: *sensory*

perception here functions a kind of glue, binding one's individual nervous system into the larger ecosystem. And when your animal senses are all awake, when you are perceiving your surroundings with your skin as well as your ears and your eyes and your nostrils sniffing the breeze, it sometimes happens that your body becomes a part of the larger Body of the land, your own flesh becomes part of the wider Flesh of this breathing, animate earth, and so you begin to feel things and know things that are happening in other parts of your larger Body, within the broad Body of the land. Indigenous hunters, who have apprenticed themselves to the manifold life of the local earth since they were children, actually depend upon this kind of synaesthetic clairvoyance for regular success in the hunt.

And it is this old, ancestral experience of earthly clairvoyance, which depends upon an animistic sense of the land as something that's alive -- such that this is our small body and the Earth is our larger Body -- it's precisely this old experience that I suspect we're trying to replicate with our cell phones: this sense of being over HERE, while knowing what's going on over THERE.

So what is the difference between these two forms of clairvoyance, of seeing or sensing at a distance (neither of which, by the way, involves anything supernatural)? One of these, mediated by our technology -- by the smartphone -- works by dissolving distance entirely, by overcoming our bodily embedment in a particular place, detaching ourselves from most of our bodily senses in order to dialog with other minds that have similarly withdrawn from their senses and their sensuous locales in order to connect up in a purely cognitive manner in a virtual realm we call cyberspace, a place without any sensorial qualities, a place of no-place. Meanwhile, the age-old animistic modality of clairvoyance works by virtue of our body and our bodily senses, allowing sensory perception to bind our nervous system into the wider ecosystem, or bioregion, or place. Instead of divesting ourselves of the place where we find ourselves, this form of clairvoyance involves tuning one's body so thoroughly to the place, allowing sensory perception to bind our nervous system into the encompassing ecosystem, aligning our body so thoroughly with the larger body of the place that we begin to sense events

happening elsewhere within that ecosystem. Using our animal body to empathize with and feel into the wider Body of the animate Earth – this vast, spherical metabolism in which all our individual physiologies are embedded, and upon which our individual metabolisms all depend.

One of them is a largely mental, cognitive phenomenon, carried on by humans interacting only with other humans, and with our own humanly generated artifacts and symbols. The other is an intensely corporeal participation, such that our whole body is engaged in an intimate, somatic participation with other animals and local plants (an attunement sometimes heightened by ritually ingesting certain herbs or particular mushrooms known to be poisonous when taken in quantity) wherein our body couples itself to the ground, to the rooted trees, to the winds and the waters and breathing land itself.

I hope I have at least shed a bit of light on why we're so gripped and fascinated by our digital technologies, why they are so compelling to us – so that once we're online and synapsed to the screen it's awfully hard to unplug ourselves. Because all these smart phones and intelligent objects awaken and stir something mighty old in us, a biophilic proclivity layered deep in our genome, a penchant for participation with other-than-human presences – an impulse for animate interchange with bodies whose shapes are very different from our own. The renewal of that old, animistic sense of a world all alive, awake, and aware brings an upwelling of wonder, or at least an anticipation of a wondrous possibility waiting just around the corner, and so we remain transfixed by these gizmos, searching in and through our digital engagements for a kind of contact that they seem to promise yet never really provide: the consummate contact with otherness, with radical alterity, with other styles of sensibility and intelligence that thoroughly exceed the limits of our own sentience. Yet there's the paradox, for the more we engage these remarkable tools, the less available we are for any actual contact outside the human estate. Indeed, the more we participate with these astonishing technologies the more we seem to seal ourselves into a kind of human cocoon, and the

more our animal senses – which have coevolved with the winds, the waters, the whole of the animate earth – the more our animal senses are blunted, so that we become ever more blind, ever more deaf, ever more impervious to the more-than-human earth. Ever more oblivious to what’s actually going on in the body’s world (which is nothing other than this breathing biosphere), ever more numb to the disappearance of other forms of sentience. Ever more callous and closed to the shuddering pain of the earth.

Which brings us, finally, back to our initial question: What is the real relation, if there *is* any relation, between these two very different collective moods, both so present today. Between the upbeat technological optimism, the giddy techno-utopian hopefulness and zeal that circulates in our society today, and the mood of ecological despondency, despair, and grief, that some other people seem to be feeling? Well, digital technology is indeed enabling many astonishing and dizzying, and even magical things. But all this virtual magic is taking a steep toll. Cause for a long time all this techno-wizardry has been blunting our bodily senses, and so interrupting the instinctive rapport between our creaturely senses and sensuous terrain. It’s been short-circuiting the spontaneous reciprocity between our animal body and the animate earth, disrupting the very affinity and attunement that keep us apprised of what’s going on in the terrain around us – the simple, somatic affinity that entangles our body with the bodies of other animals, that keeps us in contact with the life of the forests, with wetlands and the moody weather. As a consequence, caught up in our fascination with our technological screens and our screen-fitted gadgets, we’re way more *aloof* from the life of the land around us, and hence much *less* likely to notice the steady plundering of those woodlands and wetlands, the choking of the winds and the waters by the food we’re eating, and the automobiles we’re driving, and the toxic by-products of our industries. As these insults to the elemental earth pile up, as the waters are rendered lifeless by more and more runoff and oil spills and giant patches of plastic rotating in huge gyres, as more and more of the local plants succumb to the stresses of a rapidly warming climate, the sensuous world of our bodily experience is increasingly filled with shuddering losses and horrific wounds, an ache that we feel in our muscles and bones

whenever we dare to taste the world with our creaturely senses. It's too fucking painful. And so there's ever more reason to retreat from the body's world, to take our leave from the sensuous, more-than-human terrain with its droughts and its forest fires and its insect-borne epidemics, and to take refuge in ever more mediated and virtual spaces. As I said: ever more numb. Ever more calloused to the terrorized agony of other animals, ever more oblivious to the vanishing of other species, ever more inured to the steady flattening of the real. Ever more closed to the shuddering pain of the earth.

end

