

# The 'New Materialism' and the Fragility of Things

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## Abstract

The 'new materialism' is the most common name given to a series of movements in several fields that criticise anthropocentrism, rethink subjectivity by playing up the role of inhuman forces within the human, emphasize the self-organizing powers of several nonhuman processes, explore dissonant relations between those processes and cultural practice, rethink the sources of ethics, and commend the need to fold a planetary dimension more actively and regularly into studies of global, interstate and state politics. After reviewing several key tenets of this diverse movement in philosophy, biology and the human sciences, we focus on how it casts light on the dissonant relations between the drives of neoliberal capitalism and boomerang effects from nonhuman forces. Exploration of such relations both dramatises the fragility of things today and helps to explain why many constituencies refuse to acknowledge and address it. After presenting a few capital-force-field conjunctions that illustrate the fragility of things, this article briefly explores some intercoded counter-strategies to address the contemporary predicament.

## Keywords

Event, fragility, incipience, planetary processes, self-organisation

## Ten Tenets of the 'New Materialism'

The new materialism, immanent naturalism, posthumanism, antihumanism, speculative realism, complexity theory, object-oriented metaphysics, a philosophy of becoming. These designations differ among themselves, but they also present a few affinities and commonalities along the way, affinities that contest simultaneously some features of Augustinianism, neo-Kantianism, deconstruction, phenomenology, classical Marxism and the linear sciences. What are some of the affinities?

First, classical ontologies of mind/body and self/world dualism are challenged with what might be called a protean monism. Protean monism focuses on how life and mind

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evolve out of nonlife as it simultaneously refuses the mechanical modes of explanation in classical materialism. Much of nonlife in this reading already contains traces of perceptual power, sensitivity and proto-agency typically reserved to the higher animals and humanity in Euro-American thought.

Second, notions of matter as dead or, more often, secondary to the form imposed on it are thus replaced by an evolutionary model in which there is vitality installed in energy/matter complexes from the start. This is not a form of 'vitalism' – though that tradition is to be respected – in which a divinity invests *élan vital* in material processes. It is a notion of energy–matter complexes, in which each organised entity is less than eternal and replete with surpluses, noise and remainders.

Third, the idea that you should try to be postmetaphysical is scrapped. It never succeeded, anyway. What replaces it is a contestable metaphysic and cosmology that emphasises the dynamic, temporal and process character of systems and things. Such a perspective *appreciates differential periods of stability, being and relative equilibrium in this or that zone while coming to terms with periods of real disequilibrium and becoming*. We know that it is difficult to establish such a process metaphysic with certainty, hence the name speculative realism adopted by many of us, following the lead of Alfred North Whitehead. But we also find it essential to bring such a cosmology into play in concrete explorations of ethics, state politics and global politics, exposing by contrast and comparison as we do so conventional cosmologies now tacitly in play in the human sciences.

Fourth, the tendency neither to erase the human subject nor to restrict it entirely to human beings and/or God is accepted. Several of us now treat the human subject as a real formation that is also not the fundamental ground of things. Indeed, we seek to stretch prevailing modes of subjectivity in a new direction. We then project variable *degrees* of subjectivity and agency well beyond the human estate, far into the biosphere.<sup>1</sup> We invite and respond to the charge of 'anthropomorphism' in order to fold more modesty into some traditional European modes of theism and humanism alike. We resist, that is, *anthropocentrism* as a central danger of our time, with the latter disposition being deeply invested in several orientations to the human sciences. Of course, we accept the idea that only humans reflect deeply upon mortality and the place of the human estate in the cosmos.<sup>2</sup> But we resist the tacit judgement that this frees us from thinking closely about the complex relations between the human estate and a host of nonhuman processes with variable degrees of agency. It, rather, accentuates the latter need.

Fifth, as we confirm the human subject as a formation and erase it as a ground, as we detect more vitality and periodic capacity for surprise in a variety of nonhuman force-fields, we also seek to contest a set of classical conceptions of command or derived

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1. For an excellent account of the simple agency of paramecia, replete with practices of purpose and meaning, see Stuart Kauffman, *Reinventing the Sacred: A New View of Science* (New York: Basic Books, 2008). Several other themes presented on my list also find expression in the work of Kauffman.
  2. My understandings of human agency in relation to other agentic practices, of human perception and of the human need to invest meaning in this world of entanglements are presented in chapters 1 and 2 of *A World of Becoming* (Durham, NC: Duke University Press, 2011).

morality with an *ethic of cultivation* grounded in the contingency of care for this world. Such an ethic makes situational judgements about how to enact that care in a world in which surprising changes periodically emerge. The care is not derived from a higher source or even a transcendental subject in the first instance. It arises through a positive ethos and practices of cultivation, as Michel Foucault and others have explored so carefully. It thus has a tragic potential built into it, particularly when the positive energies needed to respond to a new danger fall below the energies that are available. This care for being needs both to be cultivated individually and to be invested in the *ethos* of institutional complexes. Both together. That is why micropolitics plays an important role in our thinking. To us, such care gives some priority to the human estate, but it does so by emphasising our manifold *entanglements* with nonhuman processes, both within the body and outside humanity. Each human carries about two pounds of bacteria around with it, and many of these bacteria are enfolded into our tissues in ways that help to define our capacities and functions.<sup>3</sup>

Sixth, as we come to terms with a cosmos composed of interacting force-fields invested with differing speeds and degrees of agency, we resist the thesis of what might be called 'the sufficiency of cultural internalism' that still carries too much weight in local, state, national, international and global studies of politics. Each of these zones of study needs to have both a microscopic and a planetary dimension folded into it, with the relevant features shifting, depending on the problem complex under scrutiny. Of course, you do not engage everything all the time; that would present the image of a holistic philosophy of totality resisted here. You adopt a problem orientation, pursuing the contours of an issue up and down these interacting scales, as the issue requires. In this respect, the 'new materialism' invites engagements with the classical pragmatism of William James and John Dewey, as Whitehead and Deleuze already saw.

Seventh, proceeding along the above lines, we are prepared, through a combination of experiments and speculations, to act beyond the dictates of established knowledge when the problem under way demands it. We advance speculations about processes that exceed our current capacity to grasp them and we act experimentally on those very processes when a problem, danger or disturbance arises. Politics, in one of its dimensions, *is* experimental action extending into the element of mystery of the future.

Eighth, the foregoing considerations encourage us to identify shifting elements of ontological uncertainty and real, conditioned creativity in the periodic intersections between several forces in the world. There is often an ebb and flow in most domains, as a system goes through a period of relative equilibrium followed by another of radical disequilibrium. A philosophy of becoming set on several tiers of temporality does not, though some fools project such a conclusion into it, postulate a world in which everything is always in radical flux. That would mean that you could never act upon one desire before it was replaced by another. The projection of such a judgement into the new materialism means that the projector has so far only heard one part of the thesis being advanced. We do, however, invest variable capacities of *self-organisation* into a variety

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3. For a reflective discussion of the inhuman in the human and the role of larger assemblages in enabling and organising human agency, see Jane Bennett, *Vibrant Matter: Towards an Ecology of Things* (Durham, NC: Duke University Press, 2010).

of human and nonhuman processes. It is because such processes both interact and carry unpredictabilities that a problem orientation is needed.

Ninth, the above explorations encourage us to supplement current conceptions of reasoning and knowledge with techno-artistic tactics by which we participants in the human sciences extend our perceptual sensitivities and prime ourselves periodically to participate in the creative element of politics by which new concepts, ideas, themes, tactics, judgements and ideals are brought into the world. There is more to thinking and engagement than argument and knowing, though those are part of it too. This shift in emphasis towards creative thinking and experimental political intervention forms part of the process by which we seek to stretch the professional enclosures habitually marking the social sciences.

Tenth, many of us now feel compelled to add a planetary dimension to the study of local, regional and global politics, as we work upon received practices of social science professionalism and the notions of explanation, system, agency, objects, morality, cognition, judgement language and materiality attached to them. That means that we seek to fold into our work close attention to multiple imbrications between, say, regional and global politics and a variety of planetary forces that impinge upon them.

This cursory summary, of course, inflects such a composite in a particular direction. To me, the most unfortunate titles through which to represent such a general agenda today are perhaps those of 'posthumanism' and 'antihumanism'. I grasp, I think, the motivation behind those terms: exclusive humanism, secularism, omnipotent notions of divinity and scientism have often fostered cramped visions of culture, nature and the subtle imbrications between them. But many of us share such critiques of humanism and cultural internalism while seeking to emphasise care for the fragile condition of the human estate in its multiple entanglements with state politics, regional practices and nonhuman processes. Any title you pick is potentially susceptible to misrepresentation, as we have seen many times before. But those two titles almost invite it. My favourite titles, depending on the issues to be brought into focus at that moment, are speculative realism and immanent naturalism. The 'new materialism' is acceptable, too, though I rather doubt whether it alone can dispose of the baggage many theists, dualists and traditional humanists insist upon heaping onto the terms 'matter' and 'materialism'.

I will now put some of these perspectives into play by drawing from themes in a book of mine that is now in production. It is entitled *The Fragility of Things: Self-Organizing Processes, Neoliberal Fantasies, and Democratic Activism*.<sup>4</sup> It seeks to appreciate differing degrees of self-organisational power in three domains: in cultural processes, in non-human force-fields, and in a host of culture/nature imbrications. When such a perspective is joined to an account of the intensification, acceleration and globalisation of neoliberal capitalism, we are brought face to face with the fragility of things today – that is, with the growing tensions between the demands neoliberalism makes on both human life and nonhuman force-fields and the boomerang effects that arise as these demands and mor-phings escalate together. Indeed, the critique of neoliberalism offered in this study does

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4. *The Fragility of Things* (Durham, NC: Duke University Press, forthcoming 2013). Some of the themes to follow in this article are condensed and contracted versions of those that receive more extended articulation in the book to come.

not deny a degree of self-organising power to markets. Rather, it offers an alternative critique of neoliberalism. It, first, breaks the link between self-organisation and impersonal rationality which is so often assumed in that theory and practice. And it, second, calls attention to how markets are not at all unique systems of self-organisation and how neoliberal expansionism constantly impinges on these other processes. The cosmos consists of multiple, interacting systems with differing degrees of self-organisational capacity. Such a combination helps to make neoliberal capitalism a very fragile order.

Appreciation of the fragility of things requires cultivation of greater sensitivity to multiple ways in which contemporary institutions, role definitions and nonhuman processes intersect. Such emergent sensitivities, however, are often linked to a cautious politics of modest change. Indeed, sensitivity to nonhuman processes – such as the musical capacities of whales, or the delicacy of soil processes of self-renewal, or the precarious habitats of crocodiles, or the self-amplifying tendencies of climate change – often goes together with a desire to slow human processes down and to commune with a holistic world that moves slowly. But the planet, on the reading advanced here, is not holistic; it is not a mere environment or setting either. It is the site of a host of interacting, partially self-organising force-fields with variable capacities to morph.

So I am following a different course. The intuition is that we must simultaneously slow down at key points, to enhance modes of perception and curtail pressure upon several nonhuman systems, and also speed up a series of changes in contemporary role definitions, identities, economic priorities, state policies and international organisations. And we must escalate the scale of democratic militancy to accomplish the latter. What is more, the suggestion is that this unruly combination does not merely testify to tensions in my theory; rather, it expresses a real torsion folded into the contemporary condition itself. If you ignore any of these dimensions – the differential distribution of real creativity in the cosmos, the acceleration of pace in several domains of contemporary life, the hegemony of neoliberal capitalism, the fragility of things, the need for multiple shifts in role definition and the escalation of democratic militancy – you deny something essential to our engagement with the contemporary condition. Again, you do not address all of these issues all the time. Rather, you adopt a problem orientation and trace each emerging problem up and down the scale of the micro, the macro and the planetary as the issue requires. Let us turn, then, to ‘the politics of the event’.

## **The Politics of the Event**

The rebellions in Eastern Europe, the collapse of the Soviet Union, the rapid birth of neoliberal capitalism in Eastern Europe, Tiananmen Square, the birth and expansion of gay rights movements in the United States and Europe, the rapid, surprising formation of an evangelical-neoliberal resonance machine in the United States, the claim to a right of doctor-assisted suicide in a world in which many neo-Kantians thought the list of human rights was complete, the (nearly) worldwide economic meltdown spurred by bank adventurism, mortgage bundling and derivatives in the US, the popular transformations in Tunisia and Egypt, the birth of a civil war in Libya, the earthquake, tsunami and nuclear crisis in Japan, the mass event of a ‘slut walk’ enacted by young women in the US after a Boston police officer advised them how to dress to avoid rape, the eruption of

the 'Occupy' movement, the student strikes against tuition hikes in Canada and England, the Pussy Riot.

Each of these diverse moments embodies, though to varying degrees, characteristics of an event: it happens rather rapidly; it throws some regular institutions and role definitions into turmoil or disarray; its antecedents often seem insufficient to explain its emergence and amplifications; its settlement, when under way, is uncertain; and it makes a real difference in the world, for good or ill.

Each time an event erupts many initially outside its compass are moved to intervene, in attempts to support it, to redirect it or to squash it. An event starts out of apparent uncertainty and, at least for a while, foments a wider band of uncertainties as it morphs. Events emit contagious and infectious energies. Sometimes democracy or dictatorship hangs in the balance. Or the creation of a new right, faith, identity or strategy. Or a new fascist movement.

Events startle, provoke and energise; they can also disturb, defeat, alienate, overwhelm and sometimes incite resentment against the place of the human estate in the cosmos. They form part of the essence of politics. Another upshot is how events typically throw Intelligence experts, media representatives, political leaders and practitioners of the human sciences into intense bouts of self-doubt. 'How come we did not anticipate this?', ask the Intelligence agencies. 'How come we did not predict this?', whisper political scientists to each other, before they catch themselves to recall how they only promise to predict hypothetical events under conditions in which the 'variables' are closely specified, and not to explain actual events in the messy, ongoing *actualities* of triggering forces, contagious actions, complex and floating conflicts, creative responses, obscure searches, ambiguous anxieties, and shifting hopes. But why do so many return to such protective manoeuvres in the domains of Intelligence, the media, political leadership and the human sciences a short time after a shocking event? Do they demand too much to be in charge of the world rather than crawling on their bellies in the middle of things as William James – one of the thinkers who posits several items in my initial list – said we must?<sup>5</sup> We think you start in the middle of things, say an event, and move out from there.

Each unexpected event, in fact, creates a brief flurry of discussion in the human sciences between those who think politics can be comprehended in classic categories of explanation, those who wish they could believe that but actually cannot, those who adopt qualitative or interpretive approaches, and those, perhaps becoming prominent again, who think that attention to the event carries you into territory that may not be *entirely* reducible to any of these perspectives. These conversations occur between and within us when an event occurs. The collapse of the Soviet Union triggered it again in International Relations (IR); the emergence of gay rights triggered it among a few neo-Kantians who started to wonder whether new rights are always 'implicit' in old principles. The consolidation of the Khomeini regime in Iran after the 1979 revolution compelled Foucault and Foucauldians to become more attentive to the risk of the event. And so on.

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5. See William James, *A Pluralistic Universe* (Lincoln: University of Nebraska Press, 1996). James, you might say, is a fellow traveller in this collection of theorists. He emphasises how we inhabit a pluralistic universe of becoming.



Let me cut to the chase. I contend that we *periodically* live into futures replete with elements of *real* turmoil and uncertainty. Not merely epistemic uncertainty, which also occurs sometimes, but real uncertainty. Even more, those strategic moments sometimes secrete a degree of *real creativity*, for better or worse; real creativity in the sense of a novel response to a condition from the past that engenders a new result that is less than chance and more than simple determination. Perhaps vague frustrations and volatile energies were in the air the day before Mohamed Bouazizi immolated himself in Tunisia. Too intense to be unimportant, too vague, cloudy and volatile to be defined. Did that sad event, in turn, help to trigger a contagion and mode of creative self-organisation that exceeded the power of the trigger? The reassuring faith that our inability to predict such an event is merely an epistemic screen shielding us from solid factors in principle reducible to full determination itself expresses a contestable ontology. It in fact expresses an ontology that needs to be contested. Perhaps the rebellion arose out of creative reverberations back and forth *between* a series of singular acts and collective predispositions that were initially cloudy, in themselves. Perhaps that cloudiness became consolidated through modes of self-amplification and teleo-searching processes that both exceeded the triggering moment and *contracted* initial, vague intensities into something that did not pre-exist the event as a solid possibility simply screened from observers. Perhaps the event was preceded by intense *incipiencies* laden with real pluripotentiality. If you contend that the world is periodically punctuated by bouts of real creativity, you become alert to just how much weight has been imposed on the idea of 'the implicit' in mainstream philosophy, moving from Kant and Hegel through Rawls, Habermas and rational choice theory. You become attracted to the more protean idea of *incipience*, at least for our engagement with new events when they are under way.

I agree, by the way, with philosophers of becoming who say that various degrees of creativity are always in play. But I further contend, with Whitehead and others, I believe, that various constellations have internal powers of maintenance which help to sustain them as, say, organisms or states before the pressure of accumulation triggers a more radical process of disequilibrium and teleo-searching. This is the issue posed even by Gilles Deleuze and Felix Guattari when they ask, 'What holds things together?'<sup>6</sup>

Perhaps it is timely today, then, to draw selective sustenance from contemporary thinkers in complexity theory in neuroscience, biology, geology and critical philosophy, some of whom speak of teleodynamism, autopoiesis and real creativity in a variety of nonhuman processes. Perhaps we need to forge a series of interfaces between work in

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6. Whitehead pursues these issues in *Process and Reality: Corrected Edition*, ed. David Ray and Donald Sherburne (New York: Free Press, 1929, second edition 1978). Deleuze and Guattari pose the question 'What holds things together?' in *A Thousand Plateaus*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987), in plateau 11 entitled 'On the Refrain'. They contend that it is this question which pulls so many people towards 'arboreal' and 'concentric' models of being, but in fact nature and culture are replete with innumerable examples of 'rhizomatic' complexes. The most pertinent contribution of Deleuze and Guattari, perhaps, is in their emphasis on how 'heterogeneous connections' are formed, between bacteria and humans, viruses and other animals, plants and animals, and so on. Before the book is finished, they concede that elements of the arboreal and rhizomatic are typically needed together.

those fields, artistic work and the human sciences, not allowing any of these fields to fall into the illusion of self-sufficiency. Maybe it is timely to transfigure our activities, disciplines and selves so that *we* pursue more thoughtful responses to the risks and promises of moments of real uncertainty as they unfold into the shifting degrees of mystery marking the future. Again, we do expect the interacting, open systems in which we participate to go through periods of relative stability: a democracy persists, a regime survives, a movement becomes consolidated, a global order stabilises for decades, an institutionalised reform becomes embedded. But such consolidations can also be punctuated at strategic moments by surprising accelerations and accentuated instabilities. Such an acceleration might be triggered when one open system is touched or battered by another with which it is entangled, as when a regime intensifies suffering and discipline until a collective recoil emerges, or as when the reverberations between climate change and late capitalism suddenly secrete a series of social movements in several countries simultaneously. There is a possible event in the making.

When such moments of disequilibrium do arrive, notions such as criticality, asymmetrical rhythm, vague intensity, teleodynamism, system vibrations, condensation, self-organisation, amplification, emergent causality and real creativity become pertinent concepts to deploy. Not merely as metaphors for events reducible in principle to more familiar concepts, but as uncertain, operative processes in play during periods of phase transition. You say that the incipience operative in those bacteria, prisoners, assaulted women or social scientists actually begins in cloudiness rather than that the cloudiness is always the result of an epistemic screen. (Both judgements, remember, express specific ontological assumptions.)

I know all too well that some colleagues in the human sciences scoff at such formulations, particularly when things have settled down again after the advent of the most recent event. Economists and hedge fund managers took cover for a year or so after the last meltdown, only to re-emerge with confidence later. What university, for instance, will hire Larry Summers to be its next president, a couple of years after his hubristic notion of economics helped to bring the latest meltdown into existence? So, I will tarry over this issue for a moment by impersonating a lobster, doing so to enact a pincers movement that squeezes in upon that scepticism from two directions.

The first pincer clamps down by noting a few putative instances in cultural life in which it is difficult for many to deny real creativity. Some cultural theorists like that pincer movement. The second pincer clamps up by reviewing speculation and evidence about whispers of real creativity in a variety of nonhuman force-fields that intersect at numerous points with contemporary capitalism. I find that a few potential allies begin to quiver and shake at this moment. *But I think each claw needs to make contact with the other for either to gain a strong grip.* You can think of this strategy as a porous, contestable version of a transcendental argument. It, however, jostles thinking rather than providing a demonstration. I doubt that the messiness of the world allows strong transcendental arguments to flourish anyway. Luckily, there is more to thinking than knowing and argument, including our uncanny participation in the creation of new concepts, themes, strategies and the like.

The first pincer. Do you in fact believe, as I suspect you do, that moments of real creativity emerge in the plastic arts, in music, in film, in literature, even in philosophy? Have you yourself, indeed, periodically found a new thought or idea coming to you, as if



from nowhere, when you were walking, or taking a shower, or immersed in a conversation, or on a long, slow run? If not, or if you think these are merely epistemic moments of apparent creativity rather than moments of onto-creativity, our discussion is probably stymied for today. If you have is it not feasible that such moments of real creativity *also* find variable degrees of expression in political events, ethical judgement, the explosion of new social movements, and regime formations? If there *is*, then, an element of real creativity in politics and ethics, literary and artistic activities are apt to make contributions to that element. They thus need to be folded into the lifeblood of the human sciences. It is perhaps the hyper-professionalisation of the humanities and the human sciences alike that resists such explorations.

That is one pincer movement. Let us turn to the other, squeezing up on cultural theory from exploratory work in philosophy and the sciences of complexity. Perhaps, as William James, Alfred North Whitehead, Henri Bergson, Friedrich Nietzsche and Gilles Deleuze think, and now complexity scientists such as Stuart Kauffman, Ilya Prigogine, Lynn Margulis, Dorion Sagan and Terence Deacon also think in their ways, there are also periodic moments of criticality in species evolution, climate change, geological processes, ocean current shifts and so on that express variable degrees of real uncertainty and, sometimes, real creativity. Indeed, Whitehead and Kauffman suspect that real creativity would not have evolved in the human estate unless it found variable degrees of expression in some other organic and inorganic processes. When you dramatise the politics of the event in human life in dissonant relation to disruptive events in nonhuman force-fields, the case for the contemporary fragility of things comes even more sharply into view. We thus move, more hesitantly, to 'nonhuman eventalisation'.

## Nonhuman Eventalisation

If you place into conversation Alfred North Whitehead, the philosopher who transmuted the early findings of quantum theory into a bumpy cosmology of creative becoming, and Stuart Kauffman, the complexity theorist in contemporary biology, the following thesis may emerge: we inhabit a cosmos composed of heterogeneous, interacting force-fields moving at different speeds. Many of these force-fields pass through long or short periods of relative equilibrium, as in the stability of a climate pattern, species stability, solar system stability and the persistence of an amoeba. *Creative cosmic events often occur not within a force-field alone, but through an acceleration of reverberations back and forth between disparate, interdependent fields or between disparate elements in the same field.* This is true of moments of creativity within the human estate too. Creative human freedom is thus never simply the property of a masterful agent. Creativity flows through and between agents rather than being simply reducible to a property of them, a finding that may throw a wrench into the traditions of both negative and positive freedom.

In the distributed onto-cosmology of Whitehead, time as process is itself eternal with the creative element varying in scope across types of field. He denies either that there is no real creativity anywhere or that it is monopolised by a single god. These two views, which have fought historically, are also complementary from his perspective, since both subtract creativity from the world. 'Creativity', indeed, is a strange locution, first introduced, I believe, by Whitehead. It is a 'primitive term' in his speculative system and

means that *creation is neither ex-nihilo nor the simple product of any agent*. Here are some elements in conditioned creativity as I distill them from a synthesis of Whitehead and Kauffman: a) no set of stable factors from the past suffices to determine the event; b) as a new ‘ingression’ enters one system from another, an old ‘pre-adaptation’ in the latter, either redundant up to now or given other uses, is redeployed through accelerated self-organisation within the receiving system; and c) something new is brought into the world by the accelerated, exploratory reverberations between partially open and heterogeneous systems. In the more complex cases, something like a teleo-searching process is set into play. A world of becoming thus does house teleological searching processes, without a final predetermined aim pulling them. Now, perhaps we can consider a couple of putative examples in nonhuman processes.

The first is contemporary and controversial. According to biologists, a bacterium needs phosphorus to survive. But in one experiment, with bacteria that had lived in the vicinity of arsenic, experimental infusions of arsenic encouraged the bacteria to evolve so that arsenic replaced phosphorus to a great degree as the life-giving source.<sup>7</sup> From the perspective of my Whitehead/Kauffman synthesis, this creative development, if true, is complex. It involves: first, a process of ‘ingression’ in which arsenic is introduced; second, ‘feeling’ by the bacteria of some degree of affinity to the arsenic; and, third, creative self-organisation on the part of the bacteria through the searching process or ‘conrescence’ by which it evolves into a mode of life – an actual entity – previously indiscernible on the face of the earth.

This element of creativity is both conditioned and confined, so that bacteria not previously surrounded by arsenic might not generate this result. This is a teleo-searching process installed more deeply into the biosphere than either exclusive humanists, scientific determinists or theological absolutists accept – revealing how these constituencies both contend against each other and converge in resisting speculative realism or immanent naturalism.

This example remains at the centre of intense experimental controversy and I use it merely for the purposes of illustration. The explosion of research into *symbiogenesis* – modes of direct infusion from one organism to another that speed up the evolutionary process – provides additional instances that can arguably be grasped well through the Whitehead categories.

My second example reduces the degree of probable creativity as it carries us closer to engagement with the fragility of things. If all the glaciers in Greenland melted, the world’s ocean level would rise about 20 feet, creating global havoc in its train. If the same thing happened in Antarctica, it would rise about 200 feet.

No one expects either to happen soon. The usual predictions are a rise of between 3 and 7 feet by 2100, already enough to create global havoc as populations seek to migrate, neoliberal states build metaphorical and literal territorial walls, and conflicts intensify. But these assessments of the probable degree of rise do not take into account a new ‘factor’ only discovered in 2003 and studied closely more recently.<sup>8</sup> As warmer water,

7. Adam Richards, ‘Scientists Discover a Bacteria That Can Grow in Arsenic’ (2010). Available at: <http://www.sciencemag.org/content/332/6034/1163.abstract> (accessed April 2010).

8. This example is discussed more extensively in Connolly, ‘Steps toward an Ecology of Late Capitalism’, *theory&event* 15, no. 1 (February 2012): 1–14.

promoted by the long-term intersection between capitalism and climate change, moves into the Helheim glaciers in Greenland – and elsewhere too – it induces enhanced calving events, that is, the release of huge icebergs that hurtle into the fjord – generating intense vibrations that disturb the land mass. In a cosmos of becoming, the devil resides in the vibrations even more than in the details. These vibrations, in turn, unleash shallow earthquakes at a faster rate than heretofore. The earthquakes further destabilise the glaciers, increasing their rate of flow and tendency to spawn new calves. A dynamic process of mutual amplification across heterogeneous, interacting systems is thus set into motion.

The process is filled with uncertainty at the moment. As the geophysicist Meredith Nettles says: ‘Now for an individual glacier it’s not clear that they can continue to speed up indefinitely. Will it continue ... until it has some catastrophic collapse, or will it stabilise itself at some new equilibrium level? So these are the kind of questions that a lot of people are working very hard to understand right now. That’s the unknown.’<sup>9</sup> This is a self-organising system that does not seem to have a teleodynamic element. And it may be slowing down as the build-up of sludge in the fjord from the melting icebergs cushions the vibration effect.

Well, that is the pincer movement I am applying, though more work is needed. You identify instances of plausible creativity in culture, extending them more deeply into ethical and political processes, and paying attention, say, to how they find expression in the politics of identity. You then support those instances by identifying differential processes of self-organisation in nonhuman processes in ways that may trouble some cultural theorists who accepted your first move. Why, though, be troubled? Perhaps in part because of the attractions of the idea of human uniqueness in many humanist and theistic traditions; perhaps in part because the alternative also challenges the sense of cultural internalism or even cultural reductionism through which the human sciences tend to define themselves; perhaps in part because the alternative calls upon us to fold both microscopic and planetary dimensions into the human sciences; and perhaps in part because this approach calls upon us to explore human/nonhuman intersections of various sorts. Not by explaining everything all at once; that would be at odds with the onto-cosmology advanced here. But by following each problem up and down its sites of human and nonhuman operation. This amounts, then, to an expansion and radicalisation of classical pragmatism, as both Michel Foucault and Gilles Deleuze saw.

Of course, definitive work in the sciences of complexity may eventually call these themes into question. That cannot be denied as a possibility. But such findings would once again put the squeeze on the ideas of uncertainty and creativity within human culture. The experience of real creativity in cultural processes lends support to the idea of differential capacities of self-organisation in a variety of nonhuman processes. Today, those who seek to explore the issue of cultural creativity also need to open up more culture/nature interfaces, doing so to smudge and blur the classical boundaries from both sides. We now turn briefly to ‘the fragility of things’.

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9. See <http://www.popularmechanics.com/science/4302636>. For a more extensive account, see Meredith Nettles and Goran Ekstrom, ‘Glacial Earthquakes in Greenland and Antarctica’, *Annual Review Earth Planet* (Spring 2010): 467–91.

## The Fragility of Things

From the perspective of the endurance and quality of life now available to the human estate in its cross-cultural entanglements, in its exchanges with nonhuman force fields, and in the reverberations back and forth between several human and nonhuman processes, we once again inhabit a fragile world.

What, more closely, are contemporary examples of the fragility mostly alluded to so far? Note that 'natural' and 'cultural' instances are often mixed here. One instance resides in the tension between the growing global dimension of capital, regional inequality, and territorially anchored intensities of religious faith that increasingly issue in state and nonstate violence. It resides in the real potential for nuclear holocaust as one state or nonstate group pushes others with nuclear arms too far. Another resides in the current necessity of late capitalism to drill for oil in ever-more treacherous zones, triggering destructive eco-events that careen out of control. The 2010 BP disaster in the Gulf of Mexico, for instance, created havoc with the outflow of oil and the 'dispersants' it dispensed. There are at least 3500 other wells in the Gulf capped temporarily without being closely monitored by corporations or the state. The fragility, too, resides in the perverse intersection between the terms of expanding capitalism and the acceleration of climate change, with implications for world temperature increase, the swamping of low-lying land areas containing large populations, the desolation of fertile soil in some areas, the growing energy demands imposed by increasing temperatures, the increase of extreme weather events and the cross-regional violences such concatenations could trigger. It resides in a *possible* diversion or slowing down of the Gulf Stream, as the warming water near Greenland stalls the pace of cold water plunging downwards and southwards that now keeps the worldwide circulation intact. This could trigger a new 'little' ice age in Europe and the north-eastern United States that is even more severe and long-lasting than the last one, even as the climate warms elsewhere. Such closures have occurred rapidly before, even before the era of the Anthropocene. A further instance resides in regional economic asymmetries, exacerbated by the differential effects of climate change on soil and habitable areas, finding expression in rapid migrations, imperial pressures, the intensification of regional religious resentments and new regional wars. It resides, too, in the rapid border-crossings of people, arms, drugs, ideas, music and goods that challenge the terms of territorial order upon which neoliberal state capitalism rests as it spawns bellicose internal drives to reinstate those borders. It even resides in complex loops between bees, viruses and pesticides that derange the brains of bees, perhaps leading to a rapid decline in the bee population and reduced pollination of crops and fruits.<sup>10</sup> It resides in intensified efforts to discipline and control territorial populations amid neoliberal drives to impose austerity upon other regions and the middle and impoverished classes within Euro-American states. It resides in those pig and bird flu crossings into the human estate during an era in which antibiotics have lost much of their power through overuse. And, as recently seen, it resides in the potential ramifications between earthquakes, tsunamis, dense populations close to the sea, nuclear power plants in sites of seismic instability and more intense conflicts between neoliberal elites and antinuclear activists. Stay tuned.

10. See K.S. Delapane, *Crop Pollination by Bees* (London: CABI Publications, 2000).

## *Towards Democratic Militancy*

The thesis is that today we must escalate creative action on several fronts as we also slow down and divert the intersections between neoliberal capitalism and a variety of nonhuman force-fields. We currently face a situation in many countries where electoral politics is essential to protect against a neoliberal dictatorship and in which the grid of intelligibility which electoral politics promotes makes it very difficult to put the fragility of things on the electoral table. This dilemma is deepened because of many pressures in popular currents of theological and secular discourse to exclude these issues from electoral politics.

One way to get a *preliminary* handle on this difficult situation may be to launch experimental shifts in the roles we now play, both because such an accumulation of shifts can be good in itself and *more because such constituency actions may, first, seed the way for more militant, collective actions outside electoral politics and, eventually, fold these issues into electoral politics.*

Many prescribed roles contain some slack within them. When you bring new themes to your church, you enliven yourself and activate others. When you alter the style and substance of teaching IR, proposing new theories without applying too much pressure on students to accept them, you can rouse yourself and others together. If you encourage your labour union to encompass interstate labour and ecological issues, you again rouse a collective to act upon the larger processes affecting our lives. When you change the terms of your consumption to the extent you can afford to do so – investing in solar panels, or buying a hybrid and telling others why, or joining a slow food movement, or supporting farm-to-table restaurants, or joining one of the volunteer groups of product repair now springing up – you simultaneously strengthen the perhaps precarious beliefs and commitments that preceded these experiments, reduce your subliminal implication in the systemic tendencies you oppose, forge new collective connections, and open yourself to yet new ideas and modes of collective action. When you, say, start a blog with others, or contribute to one in motion, you again open up new adventures of collective inspiration and action. And so it goes.

Do not underestimate the subterranean, affective flows that connect identity, faith, belief, role performance and larger political movements. When role performances are frozen, so are beliefs, identities and actions. When creative shifts in some of the former are taken, the stage may be set for an amplification system to emerge. Such a system, if it gets off the ground, can infiltrate church activities, union priorities, localities, electoral politics, state priorities, international organisations and cross-state citizen movements. Do not think of the climate-warming/glacier flow/iceberg-calving/vibration/earthquake/flow amplification machine as the only one around.

Suppose, now, an expansion of such role experimentations and pressure upon state action is met by a new disruptive event. For such events are sure to occur. Well, the odds may now increase that more people will act in favour of radicalising democracy rather than forging a neofascist response to the world. Yet, at just such a moment, some radicals may insist that any set of militant reforms less than a revolution must be self-defeating. They offer a god's-eye view of a system that is said to be tightly interlocked, rather than crawling around in the middle of things periodically disturbed by uncertain flows and loose connections. Forget reform, they say, as some did again during the 'Occupy' movement.

The reply? Sure, there are no guarantees that a militant assemblage acting at several sites can succeed. But not because the global system is tightly organised. Such large assemblages are marked by sharp, disjointed edges and loose joints between the heterogeneous human and nonhuman processes composing them. A philosophy of immanent naturalism thus resists *both* methodological individualism and holism in favour of the thesis of diverse connections between heterogeneous systems in a cosmos that is open to some uncertain degree.

Under such conditions, it may be wise to move back and forth between role experimentations, reconstituting the human sciences to stretch their current norms of professionalism, forging links across diverse constituencies, applying new pressures to states and enacting regional and interstate modes of citizen action. Of course, not all the constituencies involved in such a resonance machine must embrace immanent naturalism. For there is a degree of slack in the relation between the *creedal element* of a theology or secular philosophy and the *ethos or sensibility* that infuses the constituencies attached to it. Because of this, a pluralist complex may be assembled in which many constituencies come to appreciate and respond to the fragility of things from different creedal starting points. That, at any rate, is the shape of the critical assemblage needed today in a world in which the carriers of diverse creeds regularly rub elbows with each other.

We may need a beacon to inspire us today, as we address the fragility of things and the forces ranged against acknowledging and responding to it. The 'we' is invitational. It is what Alfred North Whitehead would call a 'lure'. To me, a promising lure may be to prepare large minorities within several constituencies and regions for the day when we can enact together a general strike in several countries simultaneously. Perhaps it could be a graded strike at first, with one-day actions followed by longer periods. The immediate goal would be to press international organisations, localities, states, corporations, banks, labour unions and universities to defeat neoliberalism, to curtail climate change, to reduce regional and national inequalities, and to infuse a vibrant pluralist spirituality into democratic machines that have lost too much of their vitality.

Well, that is my interim report. Clearly, more work needs to be done.

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