Speculate This!

uncertain commons

Duke University Press

Durham and London, 2013

And now for something completely different.
—*Monty Python's Flying Circus*

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Prologue: Gambit

The future has been sold. Parceled, bundled, and securitized, it serves as the connective tissue for a global system where speculation turns a profit. Projections of better tomorrows incorporate us in collective fictions: there is always a way to optimize the present, to upgrade and improve what is to come. Endless promissory notes tame uncertainty as risk, even as predatory insurance schemes thrive on fears of oncoming deterioration, disaster, or accident.

Against such phantasmatic screens of anticipation, this project articulates and practices what we call *affirmative speculation*.

We are an uncertain commons: a collective of academics, mediaphiles, activists, and dreamers who imagine ourselves as an open and nonfinite group. We explore the promises and perils of collaborative intellectual labor, combining critical analysis with the playful promiscuity that is intrinsic to thought. We perform anonymity as a challenge to the current norms of evaluating, commodifying, and institutionalizing intellectual labor. Finally, we contest the proprietary enclosure of knowledge, imagination, and communication, while also affirming the potentialities of the common.

1. Prospects

Speculation occupies the imagination, even the imagination of occupation. Starting in an autumn of discontent, the Occupy movement lives on—and not only in spectral form: tent cities, reminiscent of early settlements, protestors unsettling business as usual, volatile gatherings, occasional fires, live-streaming media events. There is no telling where a new *emergence*—the unpredictable event, cousin of the emergency—will mushroom. There is no telling how broad actions against social and economic inequality might mutate elsewhere. There is no telling when or where insurgencies against political repression might flare up, fade to embers, or be extinguished. It is not always clear what the program is or might yet be. There is no center, no core organizers, no predictable locations, and no overarching agenda. In London they organized against austerity. In Nicosia they occupied the UN buffer zone to protest the division of the city. In Seoul they objected to free-trade agreements with the United States. In Santiago they took up educational reform. In Rome they repurposed the Cinema Palazzo, and in Mexico they occupied Cine Lindavista. There has been no singular vision linking these various actions and movements; nonetheless, a global imaginary of occupiable common space has emerged.[1] Assemblies, encampments, and anonymous collectivities continue to erupt everywhere, unexpectedly—online as well as on the ground. They are mobilized by the pathologies of the present: austerity for the masses and tax cuts for the rich, tuition hikes and dwindling school budgets, rapacious banks, foreclosed homes, communities displaced in the name of development, hawkish intellectual property laws, corporate determinations of government, states turned against their citizens, and of course predatory forms of speculation. And yet what really brings them together, beyond the endemic restlessness, discontent, and distrust, is an inchoate sense of potentiality, an opening to the future, in other words, speculation of a different kind.

Speculation is our zeitgeist. We live in a world shaped by practices of speculation, from probabilistic sciences (risk analysis, predictive genomics) and anticipatory techniques (financial arbitrage, technological forecasting) to forward-looking institutions (the Intergovernmental Panel on Climate Change, the World Health Organization).[2] More and more, it seems, the future is imported into the present, bundled up, sold off, instrumentalized. Some eagerly buy into these futures markets, placing their bets; others imagine things differently. All in all, nothing more than speculation and nothing less.

Etymologically speaking, *speculation* comes from a series of Latin verbs, which all stem from a Greek root, in turn deriving from Sanskrit (*spàs* meaning to spy, see, or observe). In this lineage the word suggests an act of mastery over the object observed—after all, speculation and spectacle have the same origin. In its modern European linguistic variations, speculation derives from the late Latin noun *speculatio* (observation, contemplation), itself deriving from the classical Latin verbs and nouns *specere* (look), *specular*i (observe, examine, explore), and

speculum (looking glass, mirror). The Sanskrit root verb *spàs* is the fountainhead of a range of words that variously mean to observe and ascertain something not readily evident, to perceive clearly, to obstruct, to undertake, to string together, and, importantly, to touch, feel, or affect (*spàrsa*). The etymological links between sight and touch, clarity and obfuscation, turn us toward not only speculation as thought but also speculation as a pressing toward an apprehension of the unknown.

This complex etymology frames our capitalist present of speculation. Even through millennial as well as planetary vicissitudes, the etymological concatenation or signifying chain remains remarkably consistent: what all roots share in common and what binds them across time and space is a privileged relation to vision, sight, and seeing. Notably, it is also in the early seventeenth century that *species*, derived from the Latin *speciēs* (linking to *specêre*) for outward appearance and form, comes to signify coin, money, or bullion. For the moment, this is what concerns us: the etymon linking speculation to vision and hence to representation gives rise to a modern ambivalence, namely, a structural oscillation and internal chasm between *thought* and *money*.

Speculation has two distinct semantic-conceptual registers: cognitive and economic. To speculate may mean to contemplate, to ponder, and hence to form conjectures, to make estimations and projections, to look into the future so as to hypothesize. And it may also mean to buy and sell so as to profit from the future rise and fall of market value, to invest in the hope of profit but with the risk of loss, and hence, more generally, to engage in business transactions of a risky nature that may yield unusually high returns in the future. The bridge that spans across the two registers of modern speculation and that binds them indissolubly to one another consists of a certain conception of the future: both intellectual or financial investments project into and stake claims on the future. Whether the lasso thrown across time is thought or money, speculation always constitutes an attempt to draw the future fully into the present. Both registers index an attempt to represent and calculate a future that is unpredictable, unrepresentable, incalculable by definition; both registers index an attempt to fix and capture a potential future in and as the actual present. Such, then, is speculation: a modern technology for the absolute actualization of potentiality without remainder, a modern apparatus for erasing the future by realizing it as eternal present.

But just how modern is this technology for seeing, representing, and possessing the future that we are calling speculation? As Sigmund Freud points out in *The Interpretation of Dreams*, the "belief that dreams foretell the future" is ancient.[3] More generally, the art of divination by whatever means is indeed an ancient art. Our provisional answer is that, unlike ancient divination, modern speculation knows no bounds and is limitless: it operates as if there were no limits to the annexation and incorporation of the future into the present, as if everything in the future were representable, knowable, and calculable in principle, as if nothing of the future could possibly escape valorization through either thought or money. To foretell or foresee the future, after all, is not to exchange the future for the present or to believe that the future is now. To divine is to dream the future—namely, to live the present in the tense of the future anterior, to let the present be formed by the futures of the past, to allow the present to be affected by what could have been yet never was and might one day still be; whereas to speculate is to project the future—namely, to live both the future and the past in the present tense, to extend

the present forward into the future and backward into the past by making estimates based on current trends and averages.

This is not a history but an interested interrogation, at this historical juncture, of how speculation as a form of knowledge has been hijacked in its economic materialization. If we focus on the financial and commercial articulations of speculation, the story is complex. The earliest forms of speculating future harm, that is, insurance as social custom, are to be found among Babylonian merchants who, following the Code of Hammurabi (1750 BC), tailored their borrowing practices to protect against possible financial loss while trading in the Mediterranean. Later, Chinese traders of the second and third centuries BC distributed valuable goods among different vessels while traveling the river rapids in order to manage possible loss. Some scholars of early modern western Europe track speculative practices to insurance contracts (*commenda*, in Latin) for maritime risk-pooling in fourteenth-century Genoa, Pisa, Venice, Marseilles, and Barcelona; and later, to the institutionalization of risk underwriting in seventeenth-century London (the opening of the Fire Office and Lloyd's Coffee House). Others, locating references to risk in the Qur'an (the Arabic *rizk* appears in 120 verses), speak to the informal contracts (*qirad*, in Arabic), as early as the seventh and eighth centuries, of Arab traders invested in protecting their goods traded over the desert and, later, the Mediterranean Sea and the Indian Ocean.[4] But most scholars agree that speculation becomes *global*—that is, consolidated as a standardized practice with its specialized instruments across a projected totality of human activity—with the rise of modern global capitalism in the seventeenth century. The two semantic registers of speculation—the one cognitive (to ponder the future) and the other economic (to buy and sell so as to profit from market value and hence to invest in future profit)—become indisputably interlinked by the close of the eighteenth century. The first recorded instance of the former in English comes from the late sixteenth century, while the first recorded instance of the latter appears in the late eighteenth century. This means that the economic-semantic register of speculation emerges specifically at a moment that many scholars have identified as a period of intensification and an exponential leap in the development of finance capital. If finance was the first modern practice squarely oriented toward an uncertain future as simultaneous threat and opportunity, speculation was the concept that tied together thought and money, intellect and capital. It bound together imaginations of the future and financial investments in the future; in fact, the future, indeed the *common* human future of the Enlightenment, sutured the two registers of speculation.

The earliest financial bubbles arrive on the scene during this period: the tulip mania of 1637 and later the South Sea Bubble of 1720. We ought to remember that the South Sea Company was a British joint-stock company, born of mercantile capitalism that traded in South America; as the bubble burst, the first global financial crash occurred. The calculative rationality of risk emerged to *manage* global connections between historically disparate systems, bringing them within the same enclosure; as a result, financial risks were spread across the world as early as the seventeenth century.[5] This was also the century that inaugurated the global project of slavery, speculation now transforming human potentials into financial assets, setting the stage for biocapitalist accumulation on plantations and in colonial settlements.[6] During this age of empire, we witness the extent to which racial and colonial logics of subjugation and

exploitation play a foundational role in the intertwined histories of financial and land speculation—histories that help establish the unequal relations between debtor and creditor, the "racial logic of global financial capitalism."[7] Soon after, the first philosophical reflections on speculation as economic-financial knowledge began to emerge. One of the earliest formulations appeared in Adam Smith's *An Inquiry into the Causes and Nature of the Wealth of Nations* (1776), in which both registers of speculation were invoked and intimately connected throughout: philosophical speculation, Smith explains, bridges the epistemic distance between dissimilar and distant objects, abstracting them into general equivalence, much in the same manner as those "very pretty machines" (referring to the steam engine) abridge labor, bringing all modes of work into equivalence.[8] Whatever it is that makes it possible for philosophical speculation to combine together such dissimilar and distant objects, what we are confronting here constitutes a dialectic of identity and difference that is not unlike the one Karl Marx found in the relation between exchange value and use value.[9] Our point is not merely that philosophical speculation is revealed here to constitute instrumental reason: that is, the philosopher aggregates otherwise different objects into a general and abstract power, just like technology aggregates otherwise different workers into a general and abstract labor power. Our point is also that in both cases the *same logic* is implicitly at work, such that the general and the abstract are posited as the condition of possibility for constructing an exponentially powerful aggregate. This is precisely the logic that underlies economic-financial speculation.

More generally, we note that the late eighteenth century marks at once a split and an integration in the semantic-conceptual field of speculation: as soon as the bifurcation occurs and the economic-financial register emerges from the mental-intellectual one, the new register alters the older irrevocably by turning it into its own specular image, thereby homogenizing the entire semantic-conceptual field; put differently, no sooner does this field branch off into two seemingly divergent paths, than both those paths converge at that same crossroads where thought and money turn into specular images of one another.[10] Thus the present preoccupation with how to think or know the future: an anxious speculating about speculation.

This specifically modern form is what we call *firmative speculation*, a firming (from the late Latin *firmā*) or solidifying of the possibilities of the future. It is a speculative mode that seeks to pin down, delimit, constrain, and enclose—to make things definitive, firm. The ur-image of such agency is the *firm*, a type of business house (emerging in Germany in 1744) that capitalizes on market conditions, working toward an optimal level of production that will ensure maximum profit and minimum cost while always on the lookout for fresh opportunities for expansion—aggressively pushing its products through advertising, shaping new needs, and consuming publics. Firms draw on expertise in speculative science materialized in risk instruments such as insurance, annuities, and stock options. These instruments render firm the uncertain future, enclosing us within a relatively secure horizon—a firmament, as it were, seemingly fixed over the earth. The experts tell us of stable forecasts and well-established pathways. We note that such predictable futures of token acknowledgments, perfunctory adjustments, and administrative reforms will simply metastasize the present, keeping things more or less as they are.

On the other hand, there is expectation, conjecture, and anticipation: modes of living that

recognize the dormant energies of the quotidian and eventualities that escape the imagination. We call these modes *affirmative speculation*. To speculate affirmatively is to produce futures while refusing the foreclosure of potentialities, to hold on to the spectrum of possibilities while remaining open to multiple futures whose context of actualization can never be fully anticipated. This is not to say speculative living is simply ephemeral; rather, it is a consistently modifying practice that seeks to act in shifting, multiscalar worlds. It mandates intuition, creativity, and play. In this sense affirmative speculation affords modes of living that creatively engage *uncertainty*. Its stakes are resolutely collective: often sabotaging individuated and privatized prescriptions, it builds on the tentative mutualities that arise in the face of uncertainties. In short, affirmative speculation embraces ways of *living in common*.

The concept of affirmative speculation directly engages what risk brackets: uncertainty. In the history of classical probability calculations and the emergence of risk discourses, uncertainty has been perennially figured as the site of pathology, that which must be enumerated, managed, and contained. Might a focus on uncertainty, whose potentials we *multiply* rather than harness, provide an antidote to the narrow instrumentality of risk? The question has compelled us to revisit the risk-uncertainty analytic, if only to pry loose the fossilized relations between the two complementary concepts. It was economist Frank Knight who countered modernity's emerging risk calculus to insist on the irreducibility of a radical uncertainty.[11] Today, uncertainty has made a spectacular return in the reflexive analysis of financial crashes, environmental crises, biological insecurity, and terror. When crises escalate, true uncertainty cuts loose from its capture by risk discourse and can be seen as productive rather than contained or containable. New risks are anticipated—and with them new data, new enactments, and new algorithms—but laced with the humbling recognition of radically unknowable states beyond statistical forecasts. And so this incitement to affirmative speculation: to acknowledge the power of conjecture without attempting to capture and produce one collective future.

But this is not simply a matter of good and bad speculation. It is instead more about functions and modalities. Speculation, we shall argue, is essentially always about potentiality: a reach toward those futures that are already latent in the present, those possibilities that already exist embedded in the here and now, about human and nonhuman power, which is, in effect, the ability to become different from what is present. One mode of speculation—the firmative—renders latent possibilities as calculable outcomes: the regenerative qualities of a plant become measurable as medicinal capacity; the worker's embodied energy is formalized as specialized skills; creativity is reduced to intellectual property. Such translations into quantifiable capacity seek to harness and exploit potentiality, foreclosing other possibilities. We are most familiar with these forms of speculation, a predatory speculation that *negates* potentiality through a variety of mechanisms, turning open-ended futures into more of the same; it firms the status quo in the name of change. Yet the regenerative qualities of a plant persist as the medicinal commons, especially in indigenous life worlds, the worker's productivity is hardly limited to what he produces on the assembly line, and no intellectual property regime has successfully controlled creative media practices in vertiginous circulation. This other mode of speculation—the affirmative—embraces uncertainty and, in so doing, remains responsive to difference, to unanticipated contingencies. Responsive to change, it takes responsibility for the future.

Affirmative speculation, while sharing the same epistemological structure of the firmative, seeks to productively unsettle the worn pathways of managed anticipation by opening up to unknown states whose context of actualization has not yet arrived. *Potentia qua potentia*: a latent force that may become expressive in the future, that may achieve actualization under conditions to come.

To affirm is to live intended toward the future: to live simultaneously in the virtual (a future unsettled from the present, somewhat unrecognizable in its newness) and the partially actualized, rapidly mutating present (contingent actions that point elsewhere). Both constitute the present, our "reality." Affirmative speculation, in this sense, is a "setting to work" of what is to come.[12] As we shall see shortly, affirmative speculation unsettles in order to conjecture creatively. It dares to temporarily materialize forms not yet realized, forms for which the conditions are not yet ripe: a tool that could help a transborder immigrant find water while crossing the U.S.–Mexico border, remains primarily a prototype; a cat glows in the dark when a jellyfish protein is sequenced into its genes, a process that might potentially transform AIDS research; and the realities of climate change, accelerated by the practices of firmative speculation that cling tightly to an unsustainable petroculture, may ultimately galvanize a greener, more responsive global politics. We are not, however, suggesting the wild west of potentiation. To be responsible to a future is to coordinate, recombine, and reset the circuitry of material and immaterial flows. Things are in motion; there are actual practices in nascent forms; the imagination is occupied, proposing an unfolding we cannot cognitively capture in its entirety. Affirmative speculation dares to *live* a future. It makes nonsense of the obsessive call to define agendas, programs, outcomes, or impacts.

Affirmative speculation unsettles the smooth, abstract, well-managed worlds of firmative speculation: the regulated, secured financial risks within the global banking system, the international agreements on TSA screenings, the global health advisories on the brink of each flu pandemic. These are important mechanisms for ensuring collective futures, and the task here is not to call for their removal. We are focused on what they render invisible: those unequal relations that constitute the "global," those elsewheres that are deemed unruly when riots, fires, and clashes break out. There is condemnation, gloom, and doom. Sympathizers argue that well-mannered civil protests, the right of the global sovereign subject of law, are the safest speculative acts for a common future. But the varied, irrepressible articulations, under different contexts of actualization, lend affirmative speculation a situated granularity. To affirm is paradoxically to refuse a single "globality," a totalizing image of the world we live together, and to speculate instead on multiple globalities that arise from manifold lived realities.

The World Economic Forum has developed a capacious Risk Response Network that tabulates and assesses fifty global risks, ranging from biohazards to terrorist threats to systemic financial failure. Risk management would serve as a predictive rationality that translates all types of possible harm into equivalent instances. Thus across risk domains, we are witnessing a breed of speculative ventures based on an agglomerative logic of probability: what occurs in one instance will unfold in the same way everywhere. States and supranational institutions now seek modular strategies and solutions transposable across risk domains—whether financial markets, public health, or border security. We are confronting new modes of governance underwritten by a militarized strategy that pushes one model of preparedness and a neoliberal

market rationality.[13]

And yet, when we focus on specific instances of risk, they escape a common panacea. Consider the following: After the market crash of 2008, it was widely believed that financial futures worldwide were in jeopardy. We had arrived at a historical crossroads, as global crises were propelling us from fictions of security into uncertainty. If both the past and the future were up for grabs again, they lent a specific historicity to the present. The present was not unforeseen, the pundits reminded us, but the now-historic, nonexpert 99 percent chose not to know it. At least in the United States, the middle class was busy living a "national delusion."[14] So the problem was displaced readily onto a discrete, easily identifiable enemy such as Wall Street. The truth of the matter was that institutions and citizens together made global financial systems tick, a situation underwritten by a collective blindness to the moral hazards of risky behaviors. The risk calculus of hypothetical states enabled complex financial practices; abstruse formulas, equations, and algorithms have come home to roost in foreclosed homes, lost jobs, and bankrupt retirement securities.

Another instance: On April 30, 2009, the swine flu reminded us once more of the connectedness of the world. Here uncertainty—surrounding new mutable pathogens, traffic across borders, and irrational human behaviors—reared its ugly head with dire consequences. Within a month the United Nations issued a formal statement about the vast geographical spread of the disease. As national health boards and governments panicked, stockpiling vaccines, quarantining travelers, and amplifying health advisories, it became clear that this was *not* a universal problem. In sharp contrast to the willful myopia of financial risk perception, the production of risk in public health crises produces another kind of blindness: actors hallucinate imaginary vectors of contamination between human and virus where there are none, and national emergency systems stockpile the antidote for a flu that does not arrive in epidemic proportion (as, for example, in the European controversy over the swine flu vaccine). Such hyperbolic "seeing" is a fundamental misrecognition of the experiential present completely overwritten by future emergencies and driven by fears of imminent harm.[15] More importantly, these recurrent public health crises facilitate easeful swings between molecular and planetary scales, so that all humans are implicitly at risk in a shared present that no one can escape. And yet in these crises the link between risk perception and risk distribution surfaces to trouble managerial ventures. On the one hand, there is a world of divided resources, a striated globality of precarious zones. On the other hand, since no security system can possibly immunize both the haves and the have-nots, the precarity over there produces risk over here. And so uncertainty replaces risk in the public imagination. Since those with every resource at hand could not localize the H1N1 infections in 2009, it was clear that risk management could never really keep up with a dynamic global circulatory system in which microbial "threats" were endemic.

A third instance: On March 11, 2011, a massive tsunami triggered by the 9.0 Tohoku earthquake hit the Fukushima Daiichi Nuclear Power Plant in Japan, causing multiple technological failures. We know its repercussions are still emerging, physically (one hundred thousand tons of contaminated water, somatic injuries, loss of homes and livelihoods), technologically (a reevaluation of nuclear safety), and politically (the furor over biohazard

providing a 70 percent chance of good health is imagined to be a good bet; a 60 percent chance of having a certain kind of oncogene produces a mistrust of one's own body; young men of color in Western societies are more likely to be incarcerated because they are more given to crime. These forms of statistical knowing, and their shadow uncertainties, guide the organization and management of everyday life: what to eat, when to sleep, how to move one's body. Risk discourses ironically provide a kind of organizing reassurance, a sense of relief in the face of burgeoning uncertainty. But the costs of that relief accrue elsewhere. For if risk materializes a managerial present to secure "our" future, it does so by systematically parceling or outsourcing actual risks to those less enfranchised. Risk perception, risk assessment, and risk management produce a globality that obscures those who die in drug trials or drone attacks so that the privileged may enjoy the comforts of surplus life.[20]

Speculate This! emerges from a deep dissatisfaction with the paradigmatic articulation of risk as an analytic category: risk capitulates to demands of the state and the corporation and accepted forms of governmentality, foreclosing certain political possibilities at the very moment of their emergence. There is a growing acknowledgment across disciplines that knowledge is necessarily imperfect and even incomplete. Drawing on the long-term theorization of indeterminacy in the economic, physical, and life sciences, we posit uncertainty as a generative paradigm. We proceed from the recognition that the consequences of risk are now irrevocably global: "security," for instance, has become the ubiquitous mode of managing recalcitrant forms of imagination and behavior, banishing them to the margins. Theorizing a radical uncertainty demands that the margin must be brought back into focus. In this moment of imploding fiscal projections, risk management has become an impossible project, and risk itself is a sign of failure.

Even the best political intentions that call for a global civil society, with its high-minded institutions, treaties, and supranational networks, and a proliferating rights discourse (to food, to employment, to education), bulldoze differences and discontinuities. Forcing equivalence across local situations only sharpens global divisions and disjunctures. As data analysis pools human behaviors, it segregates populations into high-risk and low-risk groups; as transnational capital markets develop and credit systems globalize, farmers are driven to suicide; as toxic waste proliferates, it is dumped in someone else's backyard. The top-down modalities not only exacerbate disjuncture, but they also block from view the pragmatic resourcefulness of world-making practices from various "elsewheres." From such liminal sites, affirmative speculation involves nothing short of participating in global processes, of inserting oneself into history—effectively transforming the global. What ensues is a proliferation of speculative globalities, not only the experimental vanguardism of critical resistance but also the more compromised—if also more grounded and robust—popular acts of world making.

The point is worth elaborating. To stop at a critique of firmative speculation would be to remain in thrall with managerial processes, however skeptical one might be of them.[21] We aim to unsettle familiar analytical habits shot through with melancholic negativity and instead attend to vernacular practices of speculation. At the risk of overextending ourselves, we search for a common critical apparatus that allows us to engage speculation across disparate risk domains—the financial, the technological, and the biological—without pulverizing their granular textures. This means affirmative speculation is not only a specific way of knowing the

world as commons, but also a specific praxis of the common.

Speculate This!—a collectively authored manifesto—is written in solidarity with diverse experiments in speculative living that take place among pirates, artists, protesters, hacktivists, environmentalists, sexual outlaws, and utopians of all species. We write, then, in solidarity with all manner of communitarian practices and maker communities that prioritize being—and building—in common: do it yourself (DIY), free/libre/open source software (FLOSS), eco-communes, biohackers, community credit networks, locavores, ragpickers, gleaners, and sustainable urbanists, to name just a few. We look to them for ways of investing in the production of "alternative nows" and possible futures.[22]

This compels us to step out of our customary intellectual habitus, even as we continue to function within an increasingly corporatized academe that demands that we churn out quantifiable outcomes for merit and promotion. But this is not a search for true resistance, whatever that might entail; we do not write outside the system but instead playfully inhabit the forms, vocabularies, and media ecologies of public discourse.

This manifesto was six years in the making, emerging from many conversations, debates, and disagreements—a noisy crowd that became an uncertain commons. We have not always agreed about the shape of the worlds in which we dwell, but that has not prevented us from speculating together. Our writing is a speculative practice, an open form of the common. There is a rich intellectual history of writing in common: for example, Nicholas Bourbaki, the pseudonym for a group of twentieth-century mathematicians who elaborated set theory; Luther Blissett, a nom de plume used by hundreds of artists, activists, and pranksters in the 1990s; the novelists writing under the name Wu Ming ("anonymous" in Mandarin); Tiqqun, a political collective that "practices anonymity like some others practice terrorism"[23]; or, relatedly, the Comité Invisible, whose *The Coming Insurrection* (2007) has notably fueled the apocalyptic imagination of conservative political commentators. We might also recall Marx's antipathy to the bourgeois fetish of the individual and his attraction to anonymity as a form of radical political collective expression. (After all, the first edition of the *Communist Manifesto* was published anonymously—and not only for reasons of censorship.[24]) In the early 1850s, responding to a new French law that decreed that all newspaper articles ought to bear their author's signature, Marx writes, "So long as the press was anonymous it appeared as the organ of a public opinion without number or name; it was the third power of the state. With the signature of each article a newspaper became merely a collection of journalistic contributions by more or less well-known individuals. Every article sank to the level of an advertisement."[25]

Still, we do not intend to romanticize this form of communal authorship, which is a fairly ordinary twenty-first-century writing practice, exemplified by the corporate report, the memo, the wiki, and the scientific article. Even in their heterogeneous composition, these genres necessarily crystallize around a unifying theme, argument, thesis, or vision. Such univocality binds together the "team," the exemplary postindustrial organizational form with a corporatized stamp on collaborative labor. While these managerial forms rely on consensus—a way of firming things up—there are other collaborative modes that instead embrace dissensus. And dissensus can make for viable politics. Think of new transnational social movements: deep ecologists rub shoulders with trade unionists at the World Social Forum. Or think of the hacker

group Anonymous: a multiheaded hydra that articulates itself as a collective ("we are legion") even though it comprises a diverse field of actors with at times radically divergent motivations (pranks versus politics).[26]

Anonymity, in our view, is the sign of thinking and acting in common. To write anonymously as a common is to live the loss of what counts as individuated work—whether in an established corporation or in an experimental collaboratory. But if firmative speculation looks forward to owning the product of anonymous labor, affirmative speculation looks forward to giving it up, releasing it to fate. We are an uncertain commons. We do not claim authorship. We do not seek controls over this work, this emergence. And likewise, without a solidifying political vision or collective aesthetic agenda, we have not endeavored to erase traces of disagreement that still appear throughout this work. Indeed, they inspire us to speculate further.

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1. We are inspired by the extensive critical conversations on the movements and processes of occupation. For some examples, see *Occupy Wall Street* (http://occupywallst.org); *and/or Evacuate* (http://occupyeverything.org); *Tidal: Occupy Theory, Occupy Strategy* (http://www.occupytheory.org); *Journal for Occupied Studies* (http://occupiedstudies.org); *Occupy the Buffer Zone* (https://occupythebufferzone.wordpress.com); Keith Gessen, *Occupy!* (London: Verso, 2011); Geert Lovnik and Franco "Bifo" Berardi, "Franco Berardi & Geert Lovnik: A Call to the Army of Love and to the Army of Software,"*net critiqueby Geert Lovnik* (blog), *Institute of Network Cultures*, October 12, 2011, http://networkcultures.org/wpmu/geert/2011/10/12/franco-berardi-geert-lovink-a-call-to-the-army-of-love-and-to-the-army-of-software; Mike Davis, "Spring Confronts Winter,"*New Left Review* 72 (November–December 2011), http://newleftreview.org/II/72/mike-davis-spring-confronts-winter; Noam Chomsky, *Occupy* (New York: Zuccotti Park Press, 2012); Alessio Lunghi and Seth Wheeler, eds., *Occupy Everything: Reflections on Why It's Kicking Off Everywhere* (New York: Autonomedia, 2012); Federico Campagna and Emanuele Campiglio, eds., *What We Are Fighting For: A Radical Collective Manifesto* (London: Pluto Press, 2012); Marco Deseriis and Jodi Dean, "A Movement without Demands?"*Possible Futures* (January 3, 2012), http://www.possible-futures.org/2012/01/03/a-movement-without-demands; Michel Bauwens, "'Occupy' as a Business Model: The Emerging Open-Source Civilization,"*Al Jazeera* (March 9, 2012), http://www.aljazeera.com/indepth/opinion/2012/03/2012361233474499.html; Jodi Dean, "Occupation as Political Form,"*and/or Evacuate* (April 12, 2012), http://occupyeverything.org/2012/occupation-as-political-form; Michael Hardt and Antonio Negri, *Declaration* (New York: Melanie Jackson, LLC, 2012); Nicholas Mirzoeff, "Why I Occupy,"*Public Culture* 24, no. 3 (fall 2012): 451–56; and Stathis Gourgouris, "Assembly Movements and the Deregulation of the Political," *PMLA* 127 (October 2012): 1001–5.↵
2. We cannot hope to be fully comprehensive with our citations in this text, but we would like to highlight those who have particularly informed our thinking on speculation: Edward LiPuma and Benjamin Lee, *Financial Derivatives and the Globalization of Risk* (Durham, NC: Duke University Press, 2004); David Harvey, *The Limits to Capital* (New York: Verso, 2007); Eugene Thacker, *The Global Genome: Biotechnology, Politics, and*

Culture (Cambridge, MA: MIT Press, 2005); Kaushik Sunder Rajan, *Biocapital: The Constitution of Postgenomic Life* (Durham, NC: Duke University Press, 2006); Michael Fortun, *Promising Genomics: Iceland and deCODE Genetics in a World of Speculation* (Berkeley: University of California Press, 2008); Melinda Cooper, *Life as Surplus: Biotechnology and Capitalism in the Neoliberal Era* (Seattle: University of Washington Press, 2008).↵

3. Sigmund Freud, *The Interpretation of Dreams*, trans. Joyce Crick (New York: Oxford University Press, 1999).↵
4. The enormous literature on maritime risk presents the case for insurance contracts emerging in fourteenth-century Europe, while emerging scholarship tracing Mediterranean practices of risk locates the concept in the early settlements of the Arab world. For instance, see Gaspar Marial's forthcoming "The Mediterranean Origin of Risk" (cited with permission of author). See also Charles F. Trenerry, *The Origin and Early History of Insurance* (London: P. S. King and Son, 1926), especially on the contract of bottomry, i.e., bottoms of ships.↵
5. Anthony Giddens, *Consequences of Modernity* (Palo Alto, CA: Stanford University Press, 1990).↵
6. The early practice of insuring slaves developed rapidly among Dutch traders, recognized in the customary laws of Antwerp. This form of insurance became codified as Dutch slave trade expanded, connecting Europe, Africa, and the Americas. See J. P. Van Niekerk, *The Development of the Principles of Insurance Law in the Netherlands from 1500 to 1800*, vol. 1 (Kenwyn, South Africa: Juta, 1998), 439–40.↵
7. Paula Chakravartty and Denise Ferreira da Silva, eds., "Race, Empire, and the Crisis of the Subprime," special issue, *American Quarterly* 64, no. 3 (September 2012).↵
8. Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (Chicago: University of Chicago Press, 1976).↵
9. Karl Mark, *Capital*, vol. 1, trans. Ben Fowkes (New York: Penguin, 1992).↵
10. See, for example, Giovanni Arrighi, *The Long Twentieth Century* (New York: Verso, 1994), and Ian Baucom, *Specters of the Atlantic: Finance Capital, Slavery, and the Philosophy of History* (Durham, NC: Duke University Press, 2005).↵
11. The collaborative project that has partly culminated in this manifesto began with an interrogation of the production of globality—a single totalizing horizon—through risk discourse. Hence the first discussions of risk and uncertainty focused on the theorization of the dialectic in economics, specifically, Frank Knight, *Risk, Uncertainty and Profit* (Boston: Houghton Mifflin Company, 1933). Written in 1917 in the midst of the first major global crisis of the twentieth century, Knight's text theorizes uncertainty as too quickly instrumentalized in risk calculations; what he calls "true uncertainty" is never fully captured or completely capitalized by the speculative calculus that tries to make it profitable. Economists generally acknowledge that Frank Knight pioneered the study of the relationship between imperfect knowledge and popular expectations as the key to understanding how uncertainties are assimilated into the financial market. See B. Emmett Ross, *Frank Knight and the Chicago School in American Economics* (London: Taylor and Francis, 2009), 42–43.↵
12. Gayatri Spivak, A *Critique of Postcolonial Reason: Toward a History of the Vanishing Present* (Cambridge, MA: Harvard University Press, 1999).↵
13. Aihwa Ong, *Neoliberalism as Exception: Mutations in Citizenship and Sovereignty* (Durham, NC: Duke University Press, 2006).↵

14. Joseph Stiglitz's popular account of the crash, *Freefall: America, Free Markets, and the Sinking of the World Economy* (New York: W. W. Norton, 2010), exemplifies this mode of self-reflection on the "blindsight" of "non-expert" citizen-subjects of the United States.↵
15. Cass Sunstein, *The Laws of Fear: Beyond the Precautionary Principle* (Cambridge: Cambridge University Press, 2005).↵
16. Charles Perrow, *Normal Accidents: Living with High-Risk Technologies* (New York: Basic Books, 1984).↵
17. Tatsujiro Suzuki, "Deconstructing the Zero-Risk Mindset: The Lessons and Future-Responsibilities for a Post-Fukushima Japan," *Bulletin of Atomic Scientists* 67, no. 9 (September 19, 2011): 11–18.↵
18. Sharon Friedman, "Three Mile Island, Chernobyl, and Fukushima: An Analysis of Traditional and New Media Coverage of Nuclear Accidents and Radiation," *Bulletin of Atomic Scientists* 67, no. 5 (September 19, 2011): 55–65.↵
19. Ulrich Beck, *Risk Society: Towards a New Modernity* (London: Sage Publications, 1992) and *World At Risk* (London: Polity, 2008). Within the vast discourse on risk, we would also highlight Francis Ewald, "Two Infinities of Risk," in *The Politics of Everyday Fear*, ed. Brian Massumi (Minneapolis: University of Minnesota Press, 1991), 221–28; Paul Slovic, *The Perception of Risk* (New York: Routledge, 2000); Richard A. Posner, *Catastrophe: Risk and Response* (Oxford: Oxford University Press, 2005); Claudia Aradau and Rens van Munster, "Governing Terrorism through Risk: Taking Precautions, (Un)Knowing the Future," *European Journal of International Relations* 13, no. 1 (2007): 89–115; Marieke de Goede and Louise Amoore, eds., *Risk and the War on Terror* (New York: Routledge, 2008); and John C. Welchman, *The Aesthetics of Risk*, SoCCAS Symposium, vol. 3 (Zurich: JRP|Ringier, 2008).↵
20. On clinical trials among populations that will not themselves be drug markets, see Kaushik Sunder Rajan, "Experimental Values," *New Left Review* 45 (2007), http://newleftreview.org/II/45/kaushik-sunder-rajan-experimental-values.↵
21. Luc Boltanski and Eve Chiapello, *The New Spirit of Capitalism* (London: Verso, 2007).↵
22. For examples, see Chris Kelty, *Two Bits: The Cultural Significance of Free Software* (Durham, NC: Duke University Press, 2008); Beatriz da Costa and Kavita Philip, *Tactical Biopolitics: Art, Activism, and Technoscience* (Cambridge, MA: MIT Press, 2008); Matt Ratto, "Critical Making: Conceptual and Material Studies in Technology and Social Life," *The Information Society* 27, no. 4 (July–September 2011): 252–60; Douglas Farr, *Sustainable Urbanism: Urban Design with Nature* (Hoboken: Wiley, 2007); Mason White et al., *Coupling: Strategies for Infrastructural Opportunism* (New York: Princeton Architectural Press, 2010), and also see related issues in the Pamphlet Architecture series; Benjamin Noys, ed., *Communization and Its Discontents: Contestation, Critique, and Contemporary Struggles* (New York: Autonomedia, 2011); Camille Bacon-Smith, *Science Fiction Culture* (Philadelphia: University of Pennsylvania Press, 2000); Constance Penley, *NASA/Trek: Popular Science and Sex in America* (New York: Verso, 1997); Veronika Bennholt-Thomsen and Maria Mies, *The Subsistence Perspective: Beyond the Globalised Economy* (London: Zed, 2000); Martin Medina, *The World's Scavengers: Salvaging for Sustainable Consumption and Production* (Lanham, MD: AltaMira Press, 2007); Agnès Varda, *The Gleaners and I* (New York: Zeitgeist Video, 2000), DVD; and Amber Hickey, ed., *A Guidebook of Alternative Nows* (Los Angeles: Journal of Aesthetics and Protest Press, 2012).↵

23. tiqqun, https://tiqqunista.jottit.com.↵
24. In 1877, late in life, Karl Marx also wrote, in a letter to Wilhelm Blos: "From my antipathy to any cult of the individual, I never made public during the existence of the International the numerous addresses from various countries which recognized my merits and which annoyed me. I did not reply to them, except sometimes to rebuke their authors. Engels and I first joined the secret society of Communists on the condition that everything making for superstitious worship of authority would be deleted from its statue." Quoted in Nikita S. Khrushchev, *The Crimes of the Stalin Era: Special Report to the 20th Congress of the Communist Party of the Soviet Union* (New York: The New Leader, 1962), 8. In a recent essay that traces the symbiotic relations between certain discourses of anonymity and certain discourses of communism—and which includes engagements with Marx, Foucault, and Wu Ming, among others—Thoburn argues for a desubjectifying politics of anonymity that resonates poignantly with many strands of our collaboration. Nicholas Thoburn, "To Conquer the Anonymous: Authorship and Myth in the Wu Ming Foundation," *Cultural Critique* 78 (spring 2011): 119–50.↵
25. Karl Marx, *Surveys from Exile*, ed. David Fernbach (Harmondsworth, UK: Penguin, 1973), 134.↵
26. Gabriella Coleman, "Anonymous—From the Lulz to Collective Action,"*New Significance* (May 9, 2011), http://www.thenewsignificance.com/2011/05/09/gabriella-coleman-anonymous-from-the-lulz-to-collective-action.↵

2. Firmative Speculation

As a critical practice, speculation methodically thinks in the vicinity of the unknown.[1] Whereas the empiricist conception of the unknown translates it into risk, affirmative speculation progresses and lives by attending to what it does not know. Empiricist knowledge defines its unknown as something external to itself that eventually might be reached, grasped, and known. Thus it tames its own internal unknown, turning uncertainty into (external, calculable, knowable) risk. In contrast, affirmative speculation puts uncertainty at the very heart of (living) knowledge, defining it as unknowable and incalculable, yet as something that knowledge must never cease to think about and to acknowledge. The one undoes the other.

To think affirmative speculation, we begin with its opposite: the mode of firmative speculation that *produces* potentialities and then *exploits* and thus *forecloses* them. The recursive formula —produces, exploits, forecloses—underpins a constellation of firmative practices. But what does it mean to "firm" the future? Often this securing takes the form of "expert knowledge" that states, corporations, and supranational institutions present as facilitators of the public good. A firmative speculation *calculates*, *communicates* the calculation, *socializes* us into that interpretive rationality, and then *globalizes* instruments, techniques, protocols, and policies. Moving across multileveled domains of speculative activity, we focus on these four functions: calculation, communication, socialization, and globalization.

Speculation Calculates

To firm the future, one has to be able to posit specific "states" to come and ascertain causalities linking these states to recognizable goals. These are the preliminaries necessary for firmative speculation. As reasonable foresight came to be defended by contract law in Europe—and life insurance, once seen as usurious gambling on the life not yet lived, was legalized in England with the Gambling Act of 1774—financial speculation became a legitimate activity. By the close of the nineteenth century, speculative activities were regarded as necessary for a healthy economy. As the number of speculators swelled, the threat of heavy losses was spread out among many: speculation emerged as a form of insurance, a stabilizing force in uncertain markets. Farmers could spread their risks of bad harvests over the year, and traders the uncertainty of far-flung markets, by borrowing against future profits. Scholars note that these forms of legitimate speculation were predicated on a liberal subject of calculative rationality and behavioral predictability: a responsible subject bound by duties of social reproduction, a moral and rational agent whose speculative actions could be anticipated and relied on and who, therefore, warranted legal protection.[2] The point is that the progressive legalization of speculative activity in Europe throughout the eighteenth and nineteenth centuries made speculating on the future a reasonable enterprise for the layperson. At the same time, risk instruments, from mortgages to credit default swaps, became increasingly complex, and risk

diversification transformed into a full-time occupation. The economist Frank Knight would therefore make the case for a domain of specialized activities in which trained entrepreneurs would replace greenhorn clerks. People would learn to value professionals for their creativity, their innovative capacities, and, importantly, their expertise. They would begin to entrust these experts with the buying and selling of their personal futures.

This expertise lay in a statistical theory of risk. The history of probability had as much to do with amassing data as it had to do with observation, calculation, and inference. Michel Foucault evokes the dusty rooms of data, as modern bureaucracies cataloged, aggregated, and estimated their populations so as to govern them. As historians of probability maintain, the political arithmetic of states in the eighteenth century, manifest in increasingly complex actuarial tabulation, would create the conditions of possibility for legitimizing probabilistic thought; by the nineteenth century, mathematical probability became the arbiter of financial speculative practices, from annuities to lotteries. The early probability theorists of the eighteenth century (Jakob Bernoulli, Edmund Halley, and Abraham De Moivre, among others) found the patterns they needed from the demographers. They found regularities in mortality rates: death became what one could bank on, the human consistency that would enable statistical frameworks leading up to the taming of chance.[3] A posteriori probability practice aggregated and averaged past singular instances (empirical observations), mapped general trends (regression equations) via the estimation of their defining parameters, and then projected future events from these estimated patterns. Thus the actual "states" were surmised from hindsight, drawing on time-series data—the observation of the same event over time. This was distinguished from a priori probability calculations, where those states were inductively derived from mathematical laws only. Importantly, in the emerging mathematical theory of risk, the a posteriori calculus was increasingly subject to the a priori. The roll of the die was no longer *not* knowable; rather, the "law of large numbers" suggested that repeated rolling of the die would yield a stable average value (3.5 for all unbiased, six-sided dice). The expected value could be predicted; there was a mathematical theorem for it, assuming that there was no aberration such as the die striking the corner of the table. Such black swan events, outcomes of unforeseen interactions between a system and its environment, were the hallmarks of true uncertainty. Hit by the wings of the mythical black swan—the improbable state that you might be struck by lightning while rolling a die—one could question the stability of the environment that made probabilistic thinking reasoned judgment. Scholars note this was a point of disagreement in early probability theory. Bernoulli famously modeled a priori randomness as an urn filled with black and white balls standing for the diseases that bring about human death; the urn was the abstraction of the human body, a "tinderbox" for disease. One could estimate which disease (abstracted as a specific color in the exercise) was the deadliest, if one averaged the draws over a period of time. But this implied several unchanging parameters, argued the German mathematician Gottfried Wilhelm Leibniz, that were impossible to imagine with the "habits" of nature.[4] The number of black and white balls, the ratio between them, and the condition of the urn could hardly be stabilized, given innumerable diseases, the changing equilibrium between diseases, and the mutability of the human body. Bernoulli's answer was to insist that "nature follows the simplest paths," and therefore mathematical equations could stabilize the future trends for mortal risks; in fact these equations could be extended to other walks of civic life.[5]

Those arguments shape the present beyond financial matters. One is attuned to probabilistic thinking on a daily basis: Will there be rainfall today? Has the flu outbreak in different parts of the world spiked? Will the price of foodgrains rise over summer? Think of the most common figural form, the most ubiquitous of all risk media—the graph. A crawling, continuous line running between the coordinate axes, it traces a trajectory through a scattering of dots; wherever they cluster together, the line runs through them to mark the average pattern. The idea is to "fit" a general trend line that minimizes the variations of the actual empirical observations along it. Most observations or dots fall outside this line, their overall spread underscoring the tenuousness of predictions read off from this graph. The important point here is that risk media forms must simplify and contain the empirical field in order to authorize our visualization of the future. A familiar graph (see figure 1), representing the science of global warming, for instance, depicts the mean of global temperatures annually from 1850 to 2000 with a wide range of fluctuations. A clear long-term pattern or trend emerges: temperatures rise over a century and a half. A mathematical equation estimated from time-series data "fits" a line over the dispersed points to capture the trend; the nonexpert versed in these risk media can thereby predict future temperatures based on the trend. But the actual "value," the actual future temperature, will most likely be different from the prediction: hence the distinction between the "average normal" and the "actual" temperature levels for any given day. This too is anticipated, as regression analysis provides standard deviations from the trend, and this possible divergence is articulated as the habitual confidence interval: for example, "we can say with 95 percent certainty that it will rain today."

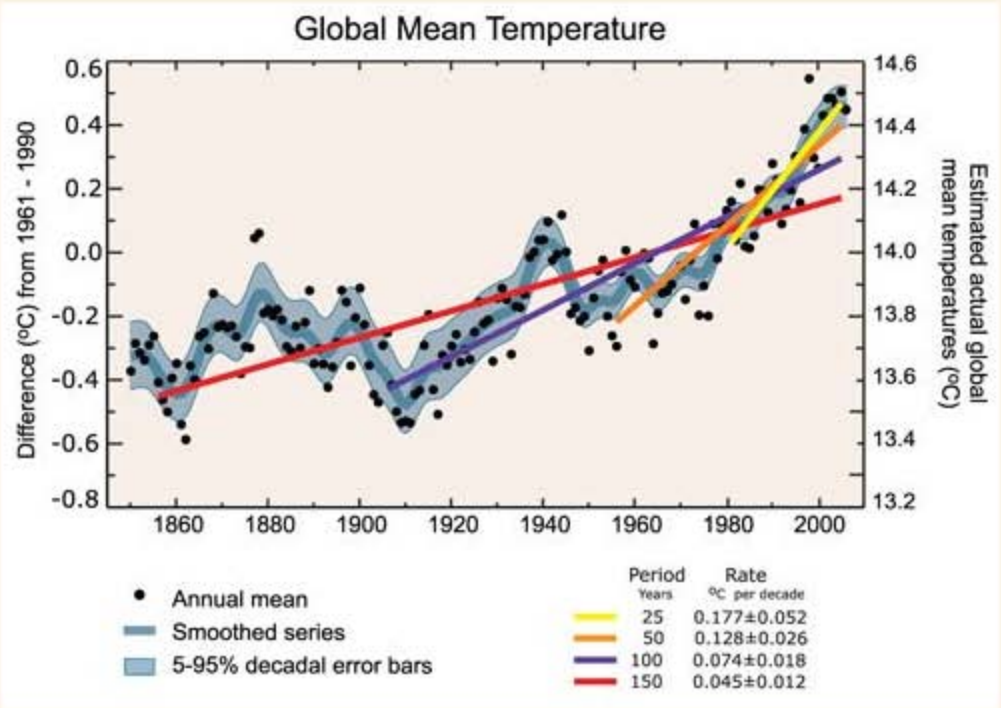

Figure 1. Annual global mean temperatures, 1850–2000. *Climate Change 2007: The Physical Science Basis* (Cambridge: Cambridge University Press). Reproduced with permission from Intergovernmental Panel on Climate Change.

When the lack of confidence is small, the possibility of error can be dismissed—depending, of course, on the stakes. The higher the stakes, the lower the acceptable range of errors. Fukushima has shaken confidence in probabilistic projections as the best protocol for thinking about nuclear safety. Analysts note the absence of a separate tsunami-safety cooling system at the Fukushima Daiichi plant built in 1967 in the Tohoku region; at that point the probability of a 3.1 meter tsunami was estimated from an earthquake survey of 1965 after the 9.5 Chilean earthquake in 1960.[6] The question that concerns us here is one of calculating probabilities. The Tokyo Electric Power Company (TEPCO) and its university collaborators downplayed data from paleotsunami research that forecast possible massive tsunamis in the region. But this should not come as a surprise. There are very few instances where corporate interests do not trump public interest; probabilistic thinking as a legitimate objective calculus is readily put to cynical use in such situations. The debates around climate change—the struggles over correct data, degree of complexity, estimates and levels of certitude—reveal deeply invested contestations of future projections. Government agencies challenge scientists; scientists refute each other's findings; corporations obfuscate studies; think tanks and journalists politicize alternative interpretations and scenarios. What is clear is that TEPCO is no anomaly. By 2002 the company had calculated a 5.7-meter average for the surface-wave magnitude of likely tsunamis in the Tohoku area, and it gambled on this estimate for the next decade.[7] But contemporary seismological research was already moving away from measuring surface-wave magnitudes to studying long period waves and measuring the "seismic moment." A further problem lay in the projection that a megaquake in the Tohoku area was at least a thousand years away; seismological agencies focused their attention on the Tokai district, and not the Tohoku region, as the most vulnerable site. Here the logic of aggregation proved to be the obstacle: when a situation is highly unique and with too small a probability to be classified within a group of instances similar to one another, it often falls outside likely scenarios and estimates. Leaving aside the possibility of negligence, there was already low concern about seismic activity in the Tohoku region.

Ultimately, TEPCO failed to update tsunami countermeasures because of a series of breakdowns in the a posteriori probability modeling. The remote possibility of a tsunami, an environmental adversary to the complex technological system that is the nuclear power plant, simply did not compute as a credible threat. Inadequate data, general estimates, overlooked errors, and a natural event of unforeseen proportions in concert with multiple technological failures made for a catastrophe. The complex interactions between multiple dimensions—human (misjudgment, miscommunication), technological (multiple power outages leading to the failure of the reactors' cooling system), and environmental (the giant tsunami)—produced new and utterly stupefying situations. It took some time for the reflexive realization that such an event could not have been predicted from past data alone. Such blind spots arise not only in cases of multileveled technological systems in dynamic environments but also across domains of expertise where experts underscore what Leibniz already knew: the urn cannot be stable, and the logic of one system (diseases) is not analogous to another (dice games). There is no transcendent logic of mathematical transcription, but there is the immanent logic of things: goods, air, water, pathogens, allergens, data bits, and everything else that circulates interact to produce complex outcomes that cannot be understood by the same laws. If in the nineteenth century the belief in a transcendent divine foresight of our collective futures had given way to a

belief in the potency of statistical predictions, by the beginning of the twenty-first century the authority of probabilistic bets on the future appears increasingly *infirm*.

It is not that the infirmity was never a part of the calculus. Even Frank Knight, while making the case for reasonable business speculation as critical to the healthy circulation of capital, insisted on the internal limits to human comprehension. Humans are like animals after all, Knight argued, for despite our capacity for calculative rationality, we remain at the mercy of "intricate physico-chemical complexes that make up organic systems."[8] These organic forces, Knight explained, provide an explanation for market volatility, always subject to the dynamism of its physical, chemical, and biological environments. The solution for Knight lay in "professional speculators," coteries of specialized experts who, while not intrinsically superior in judgment or foresight, could pool and spread losses on behalf of industrialists. These professionals are now recognizable in hedge fund managers, insurance agents, or financial analysts who advise customers to diversify their portfolios for any weather. Risk has been spread: bundled, cut up, parceled—"tranched"—and rerouted through sophisticated financial instruments, until no one could tell good from bad risks. Old familiar instruments such as mortgages, already an abstraction of the probable value of property, are further abstracted into complicated derivatives. New information technologies facilitate the collection, storage, and analysis of colossal data sets; they allow for formulas that reduce variations to remote, almost untenable, possibilities; they enable the transcription of markets into everyday data streams available for lay investors—now visualized in shiny numerical ribbons, in holograms and tables, in interactive models. This is the phantasmagoric playground for speculative living in the present. One comes upon tickers not just at stock exchanges but also at home as news broadcasts stream financial data below the talking heads and footage (CNBC was the first to institute these electronic tickers in 1989). Cultures of speculation burgeon in a technological unconscious as connectivities improve and bandwidths materialize science-fiction fantasies of propinquity and speed.[9] The drone of industrial production fades to invisible elsewheres made immaterial in the virtualized market as world picture. Concrete risk recedes before spectacular abstraction.

Firmative speculation *produces* probable states as calculable alternatives wrapped in investment contracts (futures, options, swaps) and choices for individual portfolios. Such packaging *forecloses* alternative possibilities in the interests of a precise rate of return. This kind of speculative blocking operates across all markets, not just in the financial world. In the context of the thriving market for biologicals (plants, animals, and human tissues), a ready example of such foreclosures is the case of the neem tree (*Azadirachta indica*). A tree indigenous to the South Asian subcontinent, all parts of the plant (bark, twig, gum, oil) are put to common use, and therefore its potential *value*—fungicidal (for medicinal and cosmetic use), gustatory (as cuisine), and antidesertification properties (for ecological use)—is seen to be a traditional commons. In 2005 the European Patent Office revoked its granting of a patent to W. R. Grace, a company that sought to use all of neem's fungicidal properties as pesticide. Such patenting foreclosed all other possible values (for example, medicinal use for oral hygiene, leprosy, intestinal worms, scabies, piles, urinary disorders), with the company claiming their laboratory enhancements to the plant extracts added value to the fungicide. Here monetization firms one pathway of use, foreclosing multiple potentialities. Furthermore, in such scenarios

the industrial capture of capacities threatens the prized resource via its overuse and depletion. Arguing against the enclosing of common resources, Vandana Shiva, the director of the Research Foundation for Science, Technology, and Ecology in New Delhi, Magda Aelvoet, the president of the Green Party in the European Parliament, and the International Federation of Organic Agriculture Movements (IFOAM) lodged a case against the patent office, highlighting the rampant biopiracy that transferred biological wealth (plants and knowledge) from the commons in the Global South to a few corporations in the Global North. Seeking to develop the particular use of a resource that promises maximum future remuneration, firmative speculation forecloses other uses. Here speculation makes an entire world (a point we develop below), metastasizing existing geopolitical distributions of financial, technological, and legal power into the future. Such global distributions of inequity fueled by speculative monetization are hardly surprising, argue Marxist geographers, since speculative finance is geographically expansive in its reach.[10] Surplus capital in search of new avenues invests in large-scale housing, recreational, and infrastructural projects all over the world, spurring land acquisition, legal and coercive, on an unprecedented scale; the coming profits from these projects (the theme park, the new resort, the luxury condo) are then sold as securities. Investors, financiers, and construction companies play the futures market in the unfolding story of massive dispossession of those who made their living from farms, forests, or waterways.

Further, the legal quagmire of the neem case underscores the question of *intention*—the intention to accumulate against the common in acts of "slow violence" that degrade and denude the lives of others.[11] This emphasis illuminates the historical entanglement of speculation with moral culpability. The establishment of the irresponsibility of the "intent to gamble" had once been the very grounds of separating gambling from insurance, the immoral from the moral, the self-serving from the socially responsible forms of speculation. These distinctions were necessary to demarcate the reasonable from the wild speculative practices. Practices based on reasonable foresight, on rational calculation, found legal sanction. From patenting (enclosing common resources) to financial tranching (redistributing risks for profit that accumulates among a few, the proverbial 1 percent), firmative speculation's exploitative powers seem blessed by contract law and market institutions. There is deliberate irresponsibility, not simple ignorance—that is, intentional channeling of risk to those without legal recourse—not incomprehension of what happens elsewhere. Returning to large-scale technological failures, one recalls the infamous toxic event at a Union Carbide pesticide plant in Bhopal, India, in 1984. Preceding the gas leak that led to an estimated 8,000 deaths and the poisoning of over 500,000 people, in 1981 a plant operator at that same Union Carbide plant had died from a leak. The following year, four workers had been exposed to the deadly methyl isocynate (MIC) gas and a safety audit had identified sixty biohazards (with thirty of them considered to be major problems). In an act of deliberate negligence, Union Carbide had turned a blind eye to these chronic problems until the mass catastrophe in December 1984. After nearly three decades, the inadequate legal compensations, lack of a proper clean up of the plant, or the expatriation of the CEO Warren Anderson, all seem surreal in their resolute apathy—an "eerie science fiction nightmare," as Pico Iyer once put it.[12] It is impossible to tabulate the possible states of somatic decay over generations of Bhopal survivors, so the rhetoric goes, and therefore impossible to compensate them. This is an old story, but it is one that returns with new vengeance as middle classes all over the planet begin to feel the brunt of

inequitable risk distribution. It returns with not quite the terminal corporeality of Bhopal survivors but with the compounded precarity of lost jobs, homes, and future security.[13] It is worth noting that this precarious encounter with uncertainty leaves open very few options, forcing one down dead-end paths of unskilled jobs, low income, and lifelong disaffection. This is not an embrace of uncertainty of the kind we privilege in affirmative speculation, for precarity rests on foreclosures of possibilities, not their proliferation.

The point here is to underscore the *affective life* that speculation, based on abstract, impersonal calculations, induces today.[14] Not that affect was not a part of speculative cultures until now; indeed, the fear of true uncertainty (the inherent unknown) partially managed by the firming of knowable futures has been part and parcel of speculative living. Hence scholars attend to the risk socialities constitutive of everyday life: the experiential dimensions that include both risk-averse behaviors as well as high-risk activities such as recreational drug intake, extreme sports, or compulsive day trading.[15] But what does it mean to feel one is at 86 percent danger of breast cancer? That stocks will triple in value tomorrow? How are "we" made to experience statistical abstractions as fear or euphoria? Here contemporary risk media play a critical role, channeling and intensifying perceptions, encouraging consumers to turn fear into preparedness: buy the pension plans for luxurious retirements, the vitamins for healthier, longer lives, or the newest technological devices to calculate energy expended and calories consumed. The signals are clear. Even the poor sign promissory notes for future investments. This quotidian speculative living has motivated scholars to look beyond the calculus (risk assessment and its sciences) and its instruments (risk management and its institutions) to risk perceptions. They speak of the different perceptual registers—cognitive, affective, and sensory—and of risk ecologies, all of which generate either escalating panic or the numbness of generalized anxiety. Such affects supplement and reorient reasonable foresight. At the heart of the seasoned wager, we encounter its undoing, as another logic, another matrix, muddies the objective calculus.

Speculation Communicates

Making futures perceptually concrete has a long media history, one that has intensified at this techno-animated moment. Global communications infrastructures transmit media projections of futures on an unprecedented scale, immersing us in speculative environments. This immersivity is taken to new extremes by digital technologies. We are well aware of the established media forms that direct, prime, and habituate us to futures, inducing a certain literacy in the semiotics of speculation. The trained eye, hand, or ear does not even notice the complexity of charts with diagrammatic language (arrows, curves, labels), the finesse of digitally layered cartographic projections, the techno-prowess of holographic tables or graphs in audiovisual media, or the circuit intricacies of interactive personal devices (figure 2). More importantly, these visualizations invite users to effortlessly navigate the future spatialized in them with an ease that makes their logic invisible and their oversights irrelevant.

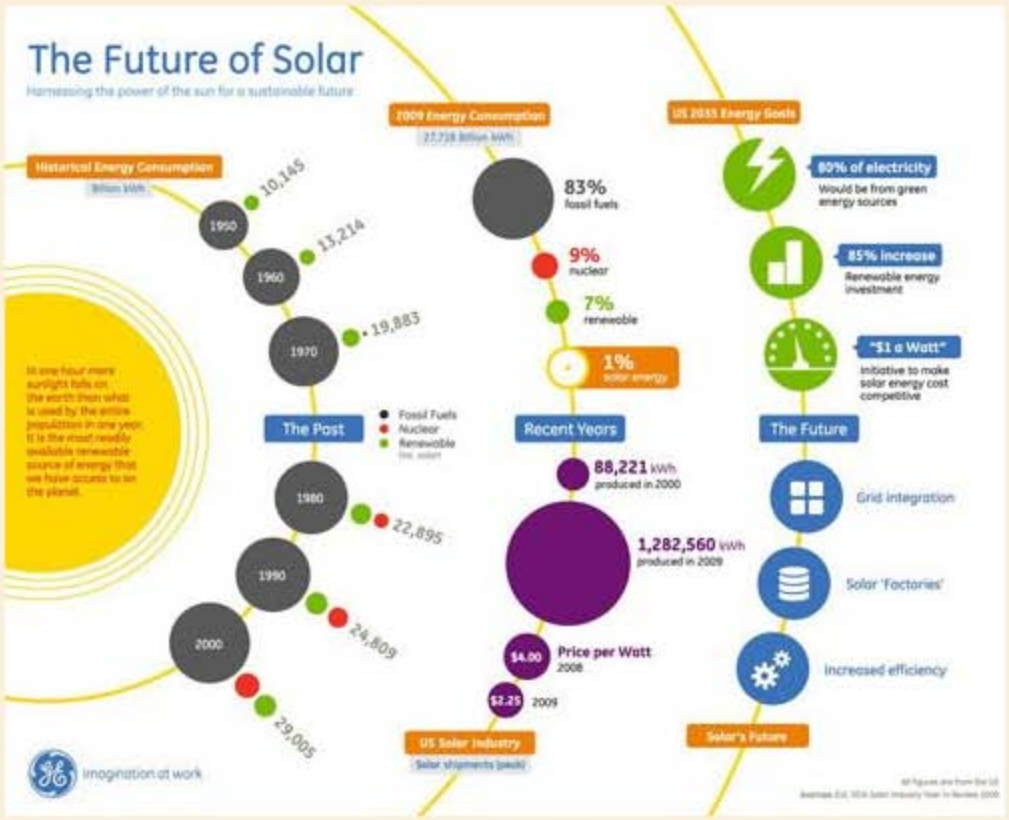

Figure 2. The Future of Solar. Designed by JESS3, http://jess3.com. Reproduced with permission of GE.

Maps, such as the projection of urban domestic water consumption in 2030 (figure 3), presume we can think three dimensionally, separating the present states from the darker layer of future water consumption. This data visualization, marking the five highest water-consuming regions, won the challenge for visualizing the water footprint challenge hosted by the Circle of Blue (an international water crisis reporting network) in 2011. The map exhibits the classic temporal fold of statistical thinking: future state(s) stabilized as the most likely one(s), folded over a snapshot of the present. Aesthetic concerns win out over clarity and spatial perspective, and the most attractive graphic notations frequently relegate information on variations (standard deviations, parameters of the study, disclaimers) to fine print not quickly accessible to the nonexpert eye. Markers of estimated states in statistical charts often completely obscure actual instances (statistical true values), an aesthetic containment of visual clutter that shores up a clear general prediction. Arrows, circles, and labels become legible graphic codes whose syntax produces predictions of probable states; they appear as objective assessments, a coded scientific translation one does not question. In these highly rhetorical forms, science becomes social persuasion, maximizing media technologies to present arguments that appear as objective truth.

Figure 3. Urban Water Needs: Can We Keep Up? Increase in Domestic Water Use by 2030. Matthew Laws and Hal Watts, 2011. Reproduced with permission.

With new immersive digital technologies, the speculative calculus becomes even more palpable. Multimodal mediascapes—billboards enclosing urban pathways, the screen cultures of casinos, or data projections as architectural space—envelop us in ways that are overwhelming yet quotidian. Then there was the digital Cloud, proposed as a new kind of observation deck and information hub that would have projected images, weather information, game results, and spectator statistics over London during the 2012 Olympics (figure 4). The four-hundred-feet-high mesh towers were to be topped with solar-powered bubbles, making the structure appear as something straight out of science fiction. Every footstep in the ascent to the Cloud would contribute to energy harvesting to keep the London Olympic flame alive; hence the Cloud engineers and architects gambled on crowd participation for its success. The world that would come to watch the Olympics, they surmised, would generate the Cloud—a speculative globality.

Figure 4. The Cloud. www.raisethecloud.org, 2012. Reproduced with permission.

Such speculative environments highlight the central role information plays in firmative speculation: the digital Cloud not only turns statistical abstraction into sensorial experience, but what's more, it self-consciously projects data streaming as *the* future world-making perspective (much like cartographic perspectives were to the early modern period). Media publics come to know the world, and to live it, statistically. The conceit of the Cloud is the uncertainty of its actualization—which data stream will enmesh me in its sublime beams?—but that contingency is bound or delimited by the context of a tourist park. The actual context of these digital data realizations, then, is already in the works, a foreclosure that exerts a regulative force on the effect of this Cloud. Despite possibilities that a socially heterogeneous, anonymous crowd will experience the futuristic spectacle, this is selective infotainment pitched at a digitally literate public who enjoy reading, touching, and moving around combinations of numbers, images, and words in urban postindustrial contexts. The planned spectacle presupposes mass attractions to designer data, even as it habituates the crowd to these modes of speculative communication: a performative loop, spectacularly embodied in the digital gizmos of the day.

The digital Cloud proposal reveals there is more at stake than cold, clear reason. A firmative speculation that renders probability palpable relies on sensory and affective responses for the formation of consensus on selective solutions for a better collective future. The new technological substrates manifest in multimodal media—interactive diagrams glowing at one's

fingertips or huge, glossy advertising dwarfing pedestrians on the street—render information ever more affective. Heightening sensations (sheer excitations of the nervous system, argue affect theorists, not yet bundled into affects), these media pull us into their orbit, activating a sensory flux that dissolves subject-object boundaries. As users dissolve into the sensory object, these speculative media channel the subsequent affects along the well-defined, culturally instituted vectors we characterize as emotions (joy, fear, shame). The technological substrate and aesthetic organization work in tandem, first releasing and then containing the affective field of speculation. Affects become distinct emotions when they are yoked to symbolic forms expressing a few select options—the new BMW model, the updated home security system, the nest egg tripled—as the *most* coveted future. A tight causality guides unruly sensation toward reasonable goals. In snapshots, such as diagrams or maps, the present and future are compressed into one visual surface, while in narrative forms meticulous editorial cuts impose a linear causality moving inexorably toward the featured solution. Home security advertising (Brink, Broadside, ADT) on television, for example, often relies on initial neurological responses (a shiver at the creak in the night, at an intrusive form in the doorway) that then congeal into fear when yoked to a threatening symbol (classically a masked figure); finally, that fear is cathartically managed by the arrival of reassuring home security professionals. The danger of such intrusion is projected as imminent: in the present or the always coming, always virtual, future. The only way to foreclose the worst-case scenario is to rely on expert technologies and infrastructures. Your *gut* tells you this is the most reasonable, the best option, and you consent: you invest in a better future.

All firmative speculation depends on effective materialization in media to communicate specific goals; both aesthetic organization and technological skills attach, yoke, or bind collective desires so that select options appear as reasonable foresight. The point becomes clearer when one realizes that data forms visualizing objective future states share common ground with media forms like advertisements advancing specific options for profit. As overt speculative media, advertisements are in the business of selling options by projecting them as the most natural, and therein the best, solutions for the future; they gamble on psychic, social, and financial investments in actual goods that will add value to the present state of things. "You," the prospective customer, may be persuaded to secure your health or your home against future loss or to maximize your latent potentials with a little help from a new commodity customizable to personal preference. These speculative media frequently project probable scenarios that are not yet socially, financially, or politically accessible—your future is already here, only not within your reach. A firmative speculation reproduces the present: for instance, "revolutionary" age-defying creams, with their promise of halting one potential futurity (cellular degeneration), often sell the most culturally conventional scenarios as the best options. If you apply *this* cream, you will have the ideal (most normative) date night! Far from inciting acts that change the present, they settle the present more firmly in its current states. That is, more often than not there is nothing different in the ideal date scenario visualized in a Nivea or Oil of Olay advertisement; the telos is remarkably predictable but presented in a glossy scenario toward which one can aspire. "We," the desiring machines, will feel much better about ourselves with firm bodies and firmer skin. Such speculative media, *producing* probable states in the near future, are creative in the sensory perceptual fields that they generate; but they also thwart creativity by firmly locking consumers into a singular choice moving toward a

defined pathway. This is achieved by compressing the present (the target "you" the advertisement addresses) and the future (the "you" in the culturally recognizable future), folding them within one surface or a narrative form. Hence these speculative media *foreclose* multiple futures for the reasonable choice of one—the best one sanctioned by innovative entrepreneurs.

These are obvious foreclosures of speculative futures; these aphoristic texts aim for perfect communication, for signal sans noise. They simulate pleasures or fears to come, productive in their creative playfulness, even as they guide our inclinations, preferences, and habits. The corporate model of maximizing capital (financial but also social, cultural, or political) is now the blueprint for consensus building across public domains. States and supranational institutions involved in governance deploy similarly well-crafted media strategies to sell their goals to the "public" in whose interest they supposedly act. The U.S. government routinely provokes fear or excitement for its preventive and proactive measures, prevailing on the public to make informed choices. The Food and Drug Administration, for example, runs an antismoking campaign that has been strongly criticized for its deliberate sensationalization of probable states related to long-term smoking (figure 5). Here, the "laws of fear," Cass Sunstein's aphorism for behavioral patterns emergent in worst-case scenarios, shape public sentiment: whatever your smoking habits, your future is something like the image of a wasting cancer patient with a hole in his throat.[16]

Figure 5. FDA anti-smoking campaign, 2011.

On other occasions, corporate-government ventures depend on the magic of advertising to rationalize their use of public monies and to invite future investment.[17] A poster for a nuclear research laboratory evokes electricity as the vital spark, the life potential over which man now has dominion (figure 6). Laser inertial fusion energy (LIFE) is projected as the energy resource of the future and made culturally palatable by its invocation of Michelangelo's *The Creation of Adam*, the iconic Sistine Chapel painting of God's hand touching or birthing man. This iconicity mobilizes a theological mythos in order to suppress references to a present where nuclear energy is a hotly contested issue across national and international contexts, and it frames the pursuit of this energy as a collective good. Speculative media such as these are best understood as complex assemblages that articulate shared mythologies, expertise, public policy, legislation, news, and entertainment to naturalize a specific future as *the* common future.

Figure 6. Igniting Our Energy Future. Lawrence Livermore National Laboratory, 2011. Reproduced with permission.

The sharing of best practices in strategic speculation tells us it is indeed time to think of different domains of expertise—financial, technological, or biological—together. One point of intersection for these domains is in the mobilization of security in public life. Since security, as a territorializing regulatory mode, is indissoluble from militarization, there is now a steady militarization of public life all over the world. The U.S. government, for one, proposes a "vital systems preparedness" for all possible emergencies (hurricanes to viral outbreaks) as a security measure. Performing worst-case scenarios such as bioterror smallpox outbreaks—in actual improvisatory acts—has become the new normal for government security professionals.[18] These scenes illuminate the speculative cultures of fear necessary for living oriented toward the next emergency, cultures that help secure vast public funding for emergency preparedness. Firmative risk media orienting the public toward these worst-case scenarios make the case that the last (and only) line of defense is always the military working in states of exception. A specious argument, one may say, in the context of actual disaster scenarios (Hurricane Sandy, most recently) where contingencies gave rise to mutual aid—common organization and coordination—as a durable bottom-up bulwark against precarity.

Ultimately, the success of these speculative media, their production and subsequent foreclosure of multiple possibilities, depends on public assessments typically measured by opinion polls. Institutions rely heavily on feedback. While bandwagon imitations of successful advertising proliferate across media platforms, offensive advertising gets pulled hurriedly in response to public outcries. These anxious fallouts are part of a saturated mediascape where both information overload and scarcity pose protracted problems. When the public feels hoodwinked by experts, when they suspect cover-ups, information scarcity generates an

escalation of "risk feelings."[19] The theorists of risk communication argue that ineffective communication, more than an actual increase in hazards, leads to heightened risk perception. As the critics of the Fukushima Daiichi crisis note, the excess of analysis, partially to compensate for the Japanese government and TEPCO's reticence, created a global echo chamber in which credible information could no longer be differentiated from mere opinion. Of course in Ulrich Beck's classic risk society thesis, it is the distrust of the expert who withholds information that fuels the generalized sense of all-pervasive risk. The changing ratios between informational silence and overload, the two enemies of the perfect signal, alter the balance of "logic, reason, and scientific deliberation" and "instinct and intuition" in risk judgments.[20]

In the context of social media and the explosion of collaborative knowledge production (for example, Fukushima Diary, iWitness Pollution Map, eBird Gulf Spill Bird Tracker), one would imagine the situation has changed somewhat. And yet new regulations of information continue to arrive everyday. A recent controversy over information control erupted when the government advisory board for the National Institutes of Health asked scientists in the Netherlands and the United States not to publish the results of the biomedical research on the H5N1 strain of the flu in the journals *Science* and *Nature*. The conclusions, the panel insisted, could be published but not the mutation data that could "enable replication of the experiments."[21] One might put this down to prevailing biosecurity measures that now govern scientific research on pathogens, but this suppression shares the stage with more cynical and deliberate deceptions. Big pharma routinely attempts to shut down reports of eviscerating clinical trials or pernicious drug side effects. In the fourth largest pharmaceutical settlement in U.S. history, Eli Lilly (previously sued for the suicidal side effects of Prozac) admitted to the criminal misdemeanor of their off-label promotion of Zyprexa, a top-selling drug for schizophrenia that increased risks for diabetes.[22] When several journalists leaked Eli Lilly's documents on Zyprexa from the ongoing lawsuit by posting links on a public wiki (http://zyprexa.pbwiki.com), Eli Lilly asked the presiding judge to order the documents off Internet sites. The company was successful in acquiring a temporary restraining order from a U.S. district court in January 2004 against the downloading of their online documentation on Zyprexa, but that order was subsequently removed when the Electronic Frontier Foundation appealed for the right to free speech of citizen journalists.[23] Speculative communication is not a one-way street: its wagers on future potentialities run up against questions of law, transparency, and public trust.

Information wars, whose corporate interests are not so explicit, erupt between governments and international organizations; the stellar example for our times is the infamous climate change controversy. The attempt to silence expert projections of climate futures from various think tanks in favor of industrial interests led sixteen national academies of science to issue a joint statement on May 18, 2001, underscoring the dangers of censorship through discreditation: "The work of the Intergovernmental Panel on Climate Change (IPCC) represents the consensus of the international scientific community on climate change science. We recognise IPCC as the world's most reliable source of information on climate change and its causes, and we endorse its method of achieving this consensus. Despite increasing consensus on the science underpinning predictions of global climate change, doubts have been expressed

recently about the need to mitigate the risks posed by global climate change. We do not consider such doubts justified."[24] The issue is no longer aesthetics or technological prowess, but a *firm* control of communications infrastructures—foreclosures of what can be said, what can be imagined, what can be projected. And yet information continues to leak. The IPCC data visualizations continue to circulate as speculative media projecting a common meteorological future.

Polar bears clinging precariously to icebergs, an iconic image projecting a human future that is already here for the nonhuman other, vivify the complex IPCC projections of climate change (see figures 7 and 8). Meanwhile postapocalyptic scenes of imminent industrial wastelands regularly arrive in the cinema, from *Stalker* (1979) to *Waterworld* (1995) to *Children of Men* (2006). These image constellations—photographs, cinematic fragments, memes, and twitter feeds—create a data deluge that transports science into the popular domain. New socialities become possible: new collectives (human, animal, and microbial) but also new divisions (the high-risk and the low-risk); new disciplines (training, drills) but also new gambles (extreme sports, derivatives trading); new scales of interacting agents (cells, machine-human frontiers) but also new temporalities (the nano durée, deep time). If communication institutes a social relation between people, what new socialities emerge with the dawning of the speculative age?

Figure 7. Polar bears on ice, 2009. Photograph by Jessica K. Robertson, USGS.

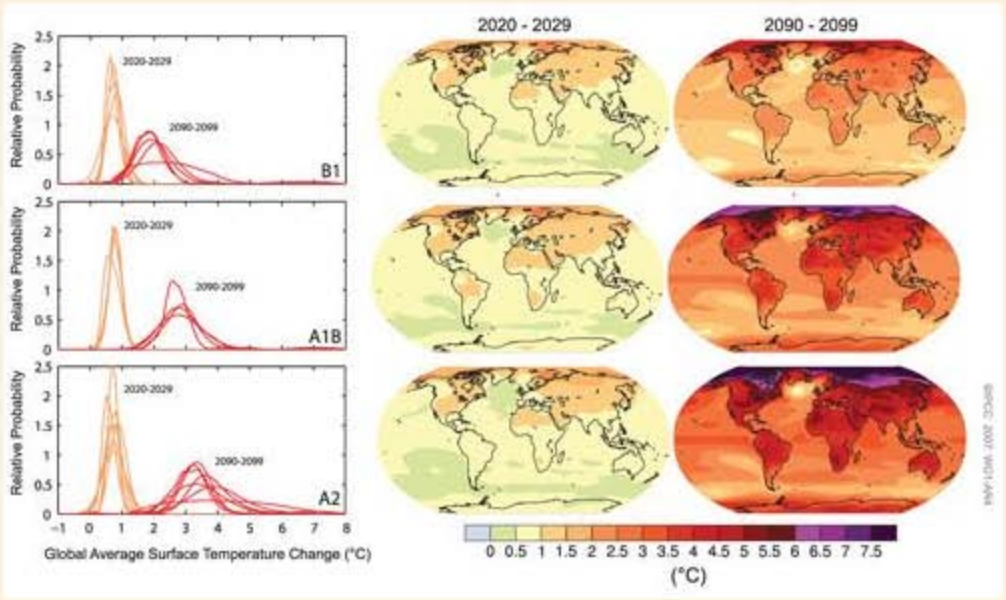

Figure 8. Projections of surface temperatures. *Climate Change 2007: The Physical Science Basis* (Cambridge: Cambridge University Press).

Speculation Socializes

Future choices need a gentle nudge. According to theorists of "choice architecture," informed decision making is a matter of social engineering, organizing the social environment to materialize one course of action in the future above all others.[25] If the healthiest foods were featured at eye level in the grocery store, consumers would be more likely to purchase those foods. If stickers detailing the increase in planetary temperatures were posted on every car, consumers would likely prefer greener cars. *Most probably*. The benign liberalism of choice architecture aims at regulating social behaviors that, it would seem, are never entirely unpredictable. Behavioral economists, marketing experts, and public relations managers compile diverse behavioral schema for social and personal decisions: how the public reacts to worst-case scenarios, how fear cascades work, or how "the habitual" and "the attentive" (in Thaler and Sunstein's account) interact to motivate choices, preferences, and predilections. There is a radical pragmatism in predicting economic behaviors, in this gentle nudge to "opt" correctly; importantly, it addresses the uncertainties of incomplete markets. But economic behaviors can be estimated, allowing for schematics that enable precautionary measures. Such premediated risk assessment would ultimately cost the public less, it is claimed. If we had spent more on air security, for example, we could have minimized the cost of 9/11; if we had attended to financial choice architectures, we could have mitigated the 2008 market crash. The new normal is ever ahead, ever the best collective buy, the calculative rationality of the state sanctioned by a flamboyant display of expertise. It is firmative speculation, once again, this time-regulating microscale of habits: the buying of food, the balancing of checkbooks, the selection of hair care products.

The biopolitical project of normalization has been addressed by Michel Foucault: the political arithmetic of demographic data, the techniques for normalizing social behaviors, the

sequestered spaces of discipline (clinics, prisons, reform schools), and so forth. However, there is something different about the present pitch for a new normal, for it is not only the social norm (arriving from past data) that is important but also the systematic regulation of probable variance in the future. "Irrational behaviors" can be anticipated, and they can be foreclosed by the reasonable foresight of choice architects. Risk analysis, in particular, rehearses various methods for managing perceptions of coming harm, including psychometric techniques for measuring future actions and reactions. Vast taxonomies of hazards (from bicycling to radiation exposure), tabulated responses, and numerical averages systemize the oddest of behaviors, the strangest of feelings; the signal potentials of risk media are carefully measured for their capacity to control public acceptance. Proponents of choice architecture, to be sure, ultimately seek legal instruments for governing irrationality, thereby integrating microscale practices (buying a vehicle with the best mileage) with macroscale practices (reducing greenhouse emissions). In this way speculation normalizes the *coming social*, preempting aberrant behaviors. It is a social that segregates along low-risk and high-risk axes.

In the imagination of the coming social, scapegoats emerge to contain collective fears and anxieties.[26] These are also speculative projections, spectral aberrations that threaten to scuttle the collective future. We know them well; they live among us, as part of an everyday landscape of risk. They *occupy* space, sensations, affects, and thought. They are traces of other hordes that should be detained, quarantined, or prohibited from inhabiting public space. And sometimes they are, as we know from the history of secret prisons, stripped of rights and redress. The scapegoat accesses occulted locations, where the disposable, the *new abnormal*, gather. Even when the state does not wield the power of political emergency, the public now remains ever alert to probable crimes and misdemeanors. This too is choice architecture of a different kind, performed in the name of public safety.

Cultural mnemonics—the terrorist, the traitor, the infected—metastasize the present, projecting existing social hierarchies into the future. There are the clean, and then there are the abject, those who spread secrets, leaks, pathogens. There are all the normal, good subjects of neoliberal governance, and then there is the singular, unruly deviant: one irresponsible bank, one rogue state, one maverick corporation, or one hidden compound. At the same time, they *still live* in our midst, secured but not eliminated. After all, as the philosopher Gilles Deleuze notes, the postmodern world is characterized by "societies of control" where the *regulation* of present and potential threats, rather than their elimination, is the key to viable futures.[27] Regulation secures a universal future for everyone; no need to dwell on infinite possibilities, potentially beneficial but also potentially dangerous.

The risk media perpetuate and normalize the fear necessary for good citizens to agree to this universal future. The threat is everywhere, always coming, always unpredictable. What are the chances that cutting down a palm tree will release an infected bat that drops a piece of chewed banana into a pigsty, that a pig will eat the dropped banana before it is sold for slaughter, that a chef will rub the pig's infected mouth with his bare hands, and then, without washing, shake hands and pose in a picture with an American woman, who will later mingle in a casino in Macao, sleep with a former lover in Chicago, and come home to infect her son in Minneapolis? That improbable trajectory, uncovered as the outbreak origin for a new deadly flu, is rendered both probable and statistically likely by the fast-paced closing sequence of Steven Soderbergh's

film *Contagion* (2011). The horror of a "world-without-us" appears as a network no one can escape.[28] The fear pervades every action: the places you visit, the handshakes or kisses, the objects you touch (credit cards, folders, cocktail glasses), and the coughs you hear.

Through risk media, speculative narratives and anticipatory rhetorics urge widespread consent to macroscale imperatives, from earthquake preparedness to TSA screenings. Certainly, state institutions rely heavily on popular culture to make their case to the public. But where *Contagion* aspires to realism, linking microbiological advances (engineering viral prototypes for research), public health organizations (the CDC, the WHO), and human social behaviors (travel, sex, eating), state institutions often lean toward *speculative fiction*.

For example, in 2011 the CDC started asking citizens to prepare for emergencies by considering the possibility of "zombie apocalypse": "There are all kinds of emergencies out there that we can prepare for. Take a zombie apocalypse for example. That's right, I said z-o-m-b-i-e a-p-o-c-a-l-y-p-s-e. You may laugh now, but when it happens you'll be happy you read this, and hey, maybe you'll even learn a thing or two about how to prepare for a *real* emergency."[29] The CDC has since released a number of brochures, posters, online resources, and even a graphic novel about zombie pandemics (figure 9). The campaign is tongue in cheek, of course, playing on the enduring cultural fascination with zombie fictions as well as satirical works such as Max Brooks's *The Zombie Survival Guide* (2003). But it also rehearses the logic of risk media in general, the way in which disaster scenarios—even the most outlandish—render visible the precarity of everyday life and establish normative rituals of behavior and preparedness, occupying the imagination firmly, surely, and completely. Such rituals—now planetary in scope, allegorized by the fictions of zombie apocalypse—propel us toward deepening anomie, always living in terror of the human or nonhuman intruder.

Figure 9. Zombie preparedness ad. CDC, 2011.

For the apparatus of securitization and preparation, the target is not this body or that population but a form of "life itself," our very biological existence, without which there would no longer be any human societies. Looking at smallpox inoculation campaigns of the eighteenth century, for example, Foucault has distinguished between normation, the normative disciplining of the abnormal subject, and normalization, the quantified control of pathogens within bodies and populations.[30] This is the logic of inoculation: the pathogen is not eradicated, but its levels in the body are maintained at a minimum. The imagination of biosecurity projects a new normal to every disease, calculating internal borders within populations that separate one social aggregate (high-risk "cases" such as the elderly) from another (low-risk, healthy individuals). The latter productive subjects are central to the biological destiny of society, that is to say, social reproduction. We see this logic expressed in contemporary global HIV/AIDS prevention campaigns that explicitly target youth (teenagers in South Africa, for instance), on whose productive potential nations depend.

Foucault maintains that modern states, calculating the most cost-effective futures, are in the business of "making live" and "letting die."[31] Where disciplinary regimes relegated the other (the patient, the hysteric, the child, the homosexual, the criminal) to the clinic, the asylum, or the penal colony, the apparatus of security targets the other who lives among us, whose future actions are the object of biopolitical interventions. In this way, "life" is maintained, facilitating the circulation of bodies, goods, and capital—but it is also *controlled*, that is, regulated, mobilized, facilitated, and reconfigured (not limited, restricted, or channelized). If we look at

present forms of security, the story continues: fighting fire with fire, the blaze is tempered, not put out. In response to the intrusion of terror into private life, travelers must give up their privacy in airport security screenings; to prevent further escalations of cyber warfare, the Department of Defense contracts hacker armies (disingenuously named white knights); to anticipate the next deadly virus, we must produce new zoonoses in labs. It is clear that unexpected emergencies, something radically new and unforeseen, will continue to arrive. So it is equally imperative to prepare for the worst, to *immunize* before the crisis.[32]

There is fear but also, quixotically, melancholia. For in the cold light of calculative rationality, it is no longer possible to cognitively grasp what has been lost. Everyday life worlds are rendered isomorphic, hierarchically organized by risk capital such that affective relations are minimized. Dependencies, vulnerabilities, unproductive behaviors are frowned upon. Such disenchantment proposes a loss of feeling, as the sociologist Max Weber once argued, at once incalculable and beyond recall.[33] The risk society inevitably becomes a melancholic society.

At another level, the state actively reorganizes life worlds. The neighborhood is combed for the terrorist who lives next door, the high school for unproductive illegal immigrants. New apparatuses of "speculative security" proliferate, to track, observe, calculate, and predict the presence of the other within the socius.[34] On other occasions emergency powers are evoked to imprison probable terrorists nesting in sleeper cells. For example, the Lackawanna Six—Yemeni Americans from Lackawanna, New York, whom the FBI targeted as members of a sleeper cell—were preemptively arrested under suspicion of possible terrorist activities to come in the future.[35] As Peter Ahearn, the special agent in charge of the FBI office in Buffalo, said: "If we don't know for sure they're going to do something, or not, we need to make sure that we prevent anything they may be planning, whether or not we know or don't know about it."[36] Thus has preemption replaced deterrence as the operative doctrine of national security.[37] In 2003 the Lackawanna Six eventually pled guilty to aiding a terrorist organization (they had attended an Al-Qaeda training camp in Afghanistan in 2001), for which they received prison sentences of seven to ten years each. None of them were ever officially charged with planning or participating in any actual terror plot. According to the logic of speculative security, imaginary dangers to the body politic must be thwarted in advance.

Those with economic wherewithal, of course, invest in private security. And the have-nots continue to occupy the shadows of an unsecured future: the somatic precarity of "slow violence," against which they have no redress. The Ukrainian workers who helped clean up after the Chernobyl disaster make headlines today because of their heightened risk of leukemia; the sinking islands of the Maldives and the potential loss of homes and livelihood also become documentary curiosities, spectacles of a global warming that continues to accelerate without sufficient opposition. In the name of progress, industrial development, and economic growth—onward and onward—some sacrifices must be made: a distribution of risk, a "letting die" for some, a consent to disposability, so that the rest of society might live and thrive. Of course, beneath the smooth surfaces of the global as a totality of interests, there are many glowing fissures: toxic waste dumps, misguided debt obligations, industrial disrepair, secret prisons. But the practices of firmative speculation work to stabilize such uneven terrain as one world, standardizing protocols, procedures, and laws: a global civil society where liberal sovereign subjects "voice" their demands, and where rights and privileges are always on the

way for those in the "waiting room of history."[38] One world, securing itself against risks by displacing them elsewhere, hedging, preempting, or simply leaving them for the future.[39]

The iconic shimmering Blue Marble—shot on December 7, 1972, by the crew of Apollo 17, the last and most successful NASA moon mission—was the first complete view of the "fragile planet," as NASA named it (figure 10). This image preceded the full flush of contemporary globalization, with all its political, economic, and environmental effects.[40] In 2012 NASA presented a "new blue marble," a composite of several swaths of the Earth's surface (figure 11). The Americas are directly under our gaze. What does it predict about planetary occupation? What prophecy does this image bring? If 1972 marked the endgame of empire, what infirm glory takes a bow today?

Figure 10. *Blue Marble*. NASA, 1972.

Figure 11. *Blue Marble*. NASA/NOAA/GSFC/Norman Kuring, 2012.

Speculation Globalizes

> Let us suppose that the great empire of China, with all its myriads of inhabitants, was suddenly swallowed up by an earthquake, and let us consider how a man of humanity in Europe, who had no sort of connexion with that part of the world, would be affected upon receiving intelligence of this dreadful calamity. He would, I imagine, first of all, express very strongly his sorrow for the misfortune of that unhappy people, he would make many melancholy reflections upon the precariousness of human life, and the vanity of all the labours of man, which could thus be annihilated in a moment. He would too, perhaps, if he was a man of speculation, enter into many reasonings concerning the effects which this disaster might produce upon the commerce of Europe, and the trade and business of the world in general. And when all this fine philosophy was over, when all these humane sentiments had been once fairly expressed, he would pursue his business or his pleasure, take his repose or his diversion, with the same ease and tranquility, as if no such accident had happened. The most frivolous disaster which could befall himself would occasion a more real disturbance.
>
> —Adam Smith, *The Theory of Moral Sentiments* (1759)

There is perhaps no figure more representative of the firmative than Adam Smith's "man of speculation." Troubled by financial risk, the man of speculation acts on his interests (his "frivolous disaster"), even as his moral humanism embeds him within the greater world. He occupies an emerging "world picture," we might argue following Martin Heidegger, where a

sensed connection externalizes an object—the "business of the world" as the premiere object of (financial) speculative thinking.[41] Heidegger suggests that the world as dwelling returns as "lived experience" (*erleben*, etymologically linked to *leben* or "life") to the perceiving subject, both as a world-without-us that stands over and against us *and* as a legible object to be mastered by expertise and good judgment. The man of speculation feels the world but is able to redirect those feelings in the service of self-interest; misfortunes are therefore banished to elsewheres. The global feeling of possible danger exemplifies the distributive logic of speculative practices that pool and spread financial risks across unevenly situated markets. But this is an ancient tale: the earliest forms of speculation, realized in maritime insurance, were modes of financial speculation where whatever happened elsewhere (en route, at a distant port, or in a remote market) could happen *here*. Hence one traded in securities, annuities, and insurance; one bought options, hedged bets. With the rise of modern empires, the buying and selling of financial futures became the first modern speculative practice. Money flowed not only as virtual wealth that linked distant markets but also as the representation of wealth; the global materialized in linkages within a system but also as the representative totality of human economic interests. Adam Smith's melancholia regarding the inescapable return to the self held firm in the age of great modern empires, which brought one-fourth of the world's population within a single economic system by 1900.

The real change today is that there is no escaping global connection, the lived experience of the global, anymore; the crash of 2008 has made that starkly clear. Once one needed the cartographic resplendence of maps, globes, calendars, and clocks as our world pictures, and perhaps we still do. But now data streams of world markets, quotidian, even unconscious, make the "global" ordinary, a dwelling one experiences every day, as evinced by *Meanwhile in Nigeria*, Julieta Aranda's installation for the *Speculative Futures* exhibit at Bloomberg Global Headquarters in 2011. For this piece, Aranda organized and tabulated all the e-mail spam she received from Nigeria (or claiming to be from Nigeria) that involved financial scams into an enormous ledger. Be it lottery winnings or plane crashes, the messages situate Nigeria as the speculative epicenter, a localized cartographic projection; the financial circuitry may materialize the "globe" as order and delivery, but those networks are haunted by the center-peripheries of the globe as world system. Nigeria, still far-flung, still needy, still financially unstable; Nigeria, still remote, still not systematic; Nigeria, a land of incalculable possibilities. The second side of the installation (the opposite side of the ledger) features a giant balloon, air squeezed from both ends marking the uneven relations between New York and Kano as financial hubs. Planned as a public transit terminal in the Bloomberg office, the piece articulated artistic futurology against Bloomberg's financial data projections. Uncanny Nigeria, rising up to greet the world of arbitrage, the spectral supplement to unrestrained, productive, financial speculation on Wall Street. But then we have grown accustomed to such unhomely encounters: the new ghost towns in China (an estimated sixty-four million empty apartments) are deserted, eerie traces of housing bubbles; likewise, surplus health in the postindustrial West accrues from clinical trials among faraway populations who may never benefit from the medicines.[42] These "locations," reminiscent of colonial outposts, proliferate in the cartographies of predatory speculation. The "global" is no longer simply the totalizing horizon of possible action (the next scam, the next property, the next wellness product) but a heterogeneous accumulation of unplanned and unprecedented effects. Emergences, in fact,

that cannot be fully anticipated, since they remain recalcitrant to the speculative science that masters the globe. An uncanny global, often a forbidding world-without-us, bites back.

To turn threats back into opportunities, a managerial speculative science arises once more in an effort to objectify risks, localize them in corners, and build solutions that secure against them. New management, new representations of another globe: a world risk society. Private enterprise thrives on such speculative science, producing dangers, articulating them in scalable models. Risk Management Solutions (RMS), for example, is a London-based firm that sells insurance against all manner of risks, from cyclones, fires, and earthquakes to terrorist attacks, biohazards, and infectious diseases. Seeking to provide "an efficient, secure, and scalable platform" for catastrophic risk modeling, RMS "leads the market and sets the standard for quantifying risk. Our science educates people on the physical and financial implications of natural catastrophes, terrorism, and the risks associated with changes in life expectancy."[43] These are global forecasts that are at the structural limit of risk assessments, since there is only a 1 percent chance that these catastrophes might happen. But emergency preparedness is a lucrative venture, part and parcel of the "one percent doctrine" that argues that damages from these low probability threats will be irreparable.[44] The risk media immediately provide world pictures of catastrophes, intensifying lived experience of "global events." The RMS website assembles a series of objects in its section on terror insurance and terrorism modeling: there is the familiar magazine cover (the red-bordered industrial design of *Time*) featuring gas-masked or hooded figures, maps of affected areas, models of worst-case scenarios, and graphs and charts for quantifying risks. These objects draw heavily on popular culture, extant journalistic coverage, and well-traversed blogs. Under terror insurance, there is a model of a possible truck bomb explosion in Manhattan's financial district and a simple visualization of terror networks (cells and vectors) visible in the diagrammatic form of scientific media.

The Lego-like model mobilizes an interactive aesthetics that invites the user to play with this worst-case scenario. The telos of the game is already specified, plotting a well-trodden path into the future extrapolated from past trauma (it is Manhattan's financial district, after all). Most importantly, the main page (under the "models" tab) objectifies the "global" as a map with some regions marked in blue (the others, like Africa or the Middle East, in light grey). One soon realizes one can click on the blue for a quick statistical look at individuated nations, checking for their landmass, population size, life expectancy, and economic exposure (in billions of U.S. dollars); each statistic is also ranked in numerical form or as "high" or "low," the language of emergency systems. Highly congested landmasses rate low in degree of manageable risk, in life expectancy; one pays more for travel to these parts of the world in individually tailored risk packages. RMS is a paradigmatic instance of contemporary "preparedness prospecting," as a *Nightline* program titled "Doomsday Preppers" named it.[45] Privatized profits abound: corporations like SwissRe or CelsiusPro sell weather derivatives to secure us against future climate change, while private prospectors build luxury shelters in the desert available for $50,000 against all hazards (storms, terrorism, plagues, nuclear attacks) complete with movie theaters and hospitals. The Terra Vivos facilities, a private network of underground shelters replete with dental care and an intricately evaluative membership selection process, is "life assurance" par excellence.[46]

The RMS website reveals a new securitized world system, albeit by a private firm, a managerial

globalization that standardizes protocols, procedures, regulations, and agreements. It recalls the many collusions between corporations and national or supranational institutions that are in the business of globalizing speculation, foreclosing futures, and turning a quick profit. An enormous amount of U.S. taxpayer dollars are spent on rehearsing large-scale, international worst-case scenario modeling for potential bioterror threats. The Black ICE exercise, for instance, stress tested international coordination capacities for managing bioterrorism: How prepared would the world be if six terrorists from South Asia, self-infected with *Variola major* (smallpox) traveled across Central Asia on an airplane while at their most contagious?[47] Such ventures rely on data collected, tabulated, and assessed by global think tanks such as the RAND Corporation (especially, the National Security Research Division) or global watchdogs such as the Global Outbreak Alert and Response Network (GOARN). These acts of firmative speculation are enormously productive in building infrastructures: they subcontract security, urge the manufacture and stockpiling of vaccines, and train personnel based in the densely populated nodes of global networks. In their public capacity, they produce affects, orientations, and everyday habits.

Speculation, then, enables the circulation of goods, information, germs, fluids, media, technologies, or foods but also constrains that circulation. The constraints in agreements and protocols seek to arrest robust markets (for example, media piracy) or vital circulations (for example, bodies, viruses). The agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) is one of the most contentious among these, inciting worldwide mobilization against the WTO's perceived collusion with powerful multinationals.[48] Signed in 1994, the agreement allowed the "developing countries" of the Global South, the new centers of media piracy, a period of adjustment to come up with national laws and enforcement mechanisms. TRIPS sought to control copyright infringements of not only "literary, artistic, and scientific works" but also of patents (for processing biological potentials) and trade secrets (for industrial design). Broad in its scope, the TRIPS agreement protected pharmaceutical companies producing and marketing antiretroviral drugs, granting them twenty-year patents to "recoup" the expenditure on research and drug development. One knows what this meant to the HIV/AIDS-infected in the Global South. In 1996 the combination therapies cost a U.S. patient $10,000 to $15,000 a year, and only a privileged few in industrializing nations could afford and have access to these drugs. So in 2001, Cipla Limited, an Indian company, started producing generic versions, and companies based in Brazil, Thailand, and South Africa followed suit; one Indian company, Ranbaxy, produced one of the cheapest generics, costing $295 per year.[49] Even though TRIPS granted a five-year grace period to these nations to develop local laws and enforcement of the patent regimes, it was clear that global regulation of "illicit" markets had exacerbated the precarity of the infected who could not afford brand drugs. Moreover, several of the drug companies producing generics were forced to comply with TRIPS in the end. Hence TRIPS was widely contested in the Global South, galvanizing calls for amendments to the original pact. This historical instance provides the sharpest image of the global as a space of uneven distributions, where managerial standards for all benefit the few and where nation-states are commandeered as local enforcers of global protocols. Prevailing divides, the Global North and South, return to haunt the management of collective futures. Even progressive advocates of juridical reform such as Lawrence Lessig participate in such distributions of market agency: they distinguish creative remediations (cut-and-mix,

appropriation, sampling, and so on) as practices that add value to the original from "piracy plain and simple," which adds no value and consists simply of poaching, stealing, copying, and making fakes.[50] Two kinds of piracy, good (in the Global North) and bad (in the Global South) emerge, controlled creativity for a controlled media commons. These constraining "agreements" are often vigorously resisted, fissuring the smooth surfaces of a managerial globalization where a firmative speculation turns both threats and potentials into profitable enterprise.

The obverse of this situation arises from abandoned regulations, often "soft" agreements regarding carbon-emission levels or waste storage that lack juridical heft. Though the United Nations Environment Programme (UNEP) first marshaled waste agreements in May 1992 at the inaugural Basel Convention (on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal), local activist groups and transnational watchdog organizations (such as Greenpeace) provide a staggering list of surreptitious toxic waste dumping all over the world. When waste assumes astronomical proportions and must be stored, disposed, or destroyed, a search begins for those remote corners of the planet where dumping will not be strongly contested. That search ends most often in the poorest habitations on the planet. These residues are seen only in occasional breaking news: Britain prepares to take back 1,400 tons of toxic waste exported to Brazil; the Camorra turns Naples into a profitable garbage dump; Greenpeace alerts Bangladesh about PCB contamination in ship-breaking yards.[51]

The risk media document such infractions, often more attentive to planetary (planets, animals, soils) and molecular (cells, genes, organs) violations than to global distributions of harm. When an artistic collaboration in the documentary *Waste Land* (2010) inserted Vik Muniz, one of the recyclers at Rio de Janeiro's infamous Jardim Gramacho dump, into an iconic image reminiscent of the French Revolution (Jacques-Louis David's *The Death of Marat*, 1793), the exuberant appropriation of "high art" signaled local aspirations to become worldly (figure 12).[52]

Figure 12. *Waste Land*. Directed by Lucy Walker, João Jardim, and Karen Harley, 2010.

The portrait would enter the world art circuit, the recesses of the global haunting the

metropolitan centers where the exhibit traveled. Since the paintings were made of recycled materials from the waste site, the London gallery goers would, in a sense, be made to breathe the toxins from Jardim Gramacho. The global as proximate feeling, as lived experience, could not be objectified as distant suffering. And yet other forces hope to wipe the stain clean from a global imaginary, celebrating Rio as jubilant host of the 2012 UN Conference on Sustainable Development (Rio 20 Summit), the 2014 World Cup, and the 2016 Summer Olympics. We could multiply such examples from numerous documentary exposés that all share a project: to bring the unseen and the unsettled—those troubling elsewheres obscured in managerial globalization pushing universal futures—into our perceptual field. Artists such as Trevor Paglen and Yasmine Kabir render those forgotten corners and secret spaces (prisons, camps, waste dumps) expressive, intensifying the costs of managerial global speculative security.[53] These speculative media combat the prevalent rhetorical strategies that project one world of risk: the world is here, and the prioritized task should be to secure life against all threats.

But setting artworks in opposition to commercial "mainstream media" formulates too easy an equation. As catalysts for speculative globalizing, artworks also participate in abstractions, in totalizing world pictures. Collective futures are on splendid display in exhibits, galleries, and installation spaces all over the world. The most notorious among these is the flamboyant anatomist Gunter von Hagens's *Body Worlds*. Multiple controversies—legal, theological, medical—have dogged the exhibit that first showed in Tokyo in 1995. As Angelina Whalley, von Hagens's partner and business manager, noted in her tabulation of the exhibit's varied reception, the controversies only led to more curious onlookers flocking to the exhibit in Europe, Asia, and North America.[54] Its admirers exalted the scientific innovation that halted the decomposition of the body after death, exclaimed over reactive polymers, speculated on the possibilities of human futures without disease, and marveled at the chutzpah of the man who captured the intimate dwelling of life itself. On the other side, von Hagens's detractors bemoaned this turn of medicine into edutainment, expressing concern over the ownership of body parts and the possibility that the bodies were of executed Chinese political prisoners.[55] Even while he insisted that the displays were consensual, von Hagens was repeatedly asked whether or not he owned the biomaterial that had been plastinated: after all, the process had removed 70 percent of body fluids and inserted polymers that substantially mutated the "original." In this postbiological context, what exactly was the ontological status of the plastinate? Was it at all human? These questions place us in the quicksand of "tissue economies," those biological distributions of the individuated human body into blood, ovaries, or frozen organs of the other—of remote bare life, always elsewhere but proximate, occupying us.[56] The necromancy of *Body Worlds* returns us to unknown sectors recalcitrant to full disclosures.

On what secrets do we base our speculative pleasures, our tranquilities? What urgent touch of the other accompanies these celebrations of a new human universal future?

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1. Louis Althusser and Étienne Balibar, *Reading Capital*, trans. Ben Brewster (London: Verso, 1979), 30.↵
2. Pat O'Malley, "Moral Uncertainties: Contract Law and Distinctions between Speculation, Gambling, Insurance," in *Risk and Morality*, eds. Richard V. Ericson and Aaron Doyle

(Toronto: University of Toronto Press, 2003), 231.↵

3. Ian Hacking, *The Taming of Chance* (New York: Cambridge University Press, 1990).↵
4. Lorraine Daston, *Classical Probability in the Enlightenment* (Princeton, NJ: Princeton University Press, 1995), 237–38.↵
5. Quoted in Daniel Garber and Michael Ayers, eds., *The Cambridge History of Seventeenth-Century Philosophy*, vol. 2 (Cambridge: Cambridge University Press, 2003), 1137.↵
6. The original design basis tsunami height was 3.1 m for Daiichi based on assessment of the 1960 Chile tsunami. See World Nuclear Association, "The Fukushima Accident" (updated April 2013), http://www.world-nuclear.org/info/Safety-and-Security/Safety-of-Plants/Fukushima-Accident-2011/#.UW4kABwfpKE; and Johannis Nöggerath, Robert J. Geller, and Viacheslav K. Gusiakov, "Fukushima: The Myth of Safety, the Reality of Geoscience," *Bulletin of the Atomic Scientists* 67, no. 5 (September 19, 2011): 37–46.↵
7. As an editorial in the *Japan Times* reports: "In 2008, Tepco estimated that a 15.7-meter tsunami could hit the plant on the basis of a 2002 report from the education ministry's earthquake panel, but it took no specific preventative measures. Gambling that such a tsunami would not occur, it did not revise its 2002 estimate that at maximum a 5.7-meter tsunami could possibly strike ("Tepco's Self-Justifying Report," June 29, 2012).↵
8. Frank Knight, *Risk, Uncertainty, and Profit* (Kissimmee, FL: Signalman Publishing, 2009), 103.↵
9. Nigel Thrift, *Knowing Capitalism* (London: Sage, 2005).↵
10. David Harvey, "The 'New' Imperialism: Accumulation by Dispossession," *Socialist Register* 40 (2004): 63–87.↵
11. Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, MA: Harvard University Press, 2011).↵
12. Pico Iyer, "India's Night of Death: Bhopal," *Time*, December 17, 1984.↵
13. For a synthetic overview of autonomist Marxism and the activist discourse on precarity, with a particular focus on affect, see Rosalind Gill and Andy Pratt, "In the Social Factory? Immaterial Labour, Precariousness and Cultural Work," *Theory, Culture, and Society* 25, nos. 7–8 (December 2008): 1–30.↵
14. On aspirational affect as a means to negotiate the crises of the present and hope for the future, see Lauren Berlant, *Cruel Optimism* (Durham, NC: Duke University Press, 2011).↵
15. Randy Martin, *The Financialization of Daily Life* (Philadelphia: Temple University Press, 2002); and Kathleen Woodward, *Statistical Panic: Cultural Politics and Poetics of the Emotions* (Durham, NC: Duke University Press, 2008).↵
16. See Cass Sunstein's *Laws of Fear: Beyond the Precautionary Principle* (Cambridge: Cambridge University Press, 2005).↵
17. For example, the experimental program to achieve fusion and energy gain, known as the National Ignition Campaign, is a partnership between Lawrence Livermore, the Laboratory for Laser Energetics at the University of Rochester, Los Alamos and Sandia National Laboratories, and General Atomics, along with collaborators such as Massachusetts Institute of Technology, Atomic Weapons Establishment in the United Kingdom, and Commissariat à l'Energie Atomique in France.↵
18. Andrew Lakoff, "The Generic Biothreat, or, How We Became Unprepared," *Cultural Anthropology* 23, no. 3 (2008): 399–428; Claudia Aradau and Rens van Munster,

Politics of Catastrophe: Genealogies of the Unknown (New York: Routledge, 2011); and Peter Adey and Ben Anderson, "Anticipating Emergencies: Technologies of Preparedness and the Matter of Security," *Security Dialogue* 43 (2012): 99–117.↵

19. Paul Slovic, *Feeling of Risk: New Perspectives on Risk Perception* (New York: Routledge, 2010).↵
20. Paul Slovic and Ellen Peters make the distinction in "Risk Perception and Affect," *Current Directions in Psychological Science* 15, no 6 (December 2006): 322–25.↵
21. Denise Grady and William J. Broad, "Seeing Terror Risk, U.S. Asks Journals to Cut Flu Study Facts,"*New York Times*, December 20, 2011, http://www.nytimes.com/2011/12/21/health/fearing-terrorism-us-asks-journals-to-censor-articles-on-virus.html?pagewanted=all&_r=1&.↵
22. Elizabeth Lopatto, Jef Feeley, and Margaret Cronin Fisk, "Eli Lilly 'Ghostwrote' Articles to Market Zyprexa, Files Show,"*Bloomberg*, June 12, 2009, http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aVvfe.v1k_VY.↵
23. Electronic Frontier Foundation, "Eli Lilly Zyprexa Litigation," https://www.eff.org/cases/eli-lilly-zyprexa-litigation.↵
24. Royal Society, "The Science of Climate Change," May 18, 2001, http://royalsociety.org/policy/publications/2001/science-climate-change.↵
25. Richard H. Thaler and Cass R. Sunstein, *Nudge: Improving Decisions about Health, Wealth, and Happiness* (New Haven, CT: Yale University Press, 2008).↵
26. See Mary Douglas, *Risk and Blame:Essays in Cultural Theory* (New York: Routledge, 1992); René Girard, *The Scapegoat*, trans. Yvonne Freccero (Baltimore: Johns Hopkins University Press, 1986); and Slavoj Žižek, *Enjoy Your Symptom! Jacques Lacan in Hollywood and Out*, revised ed. (New York: Routledge, 2001).↵
27. Gilles Deleuze, "Postscript on Control Societies," *Negotiations, 1972–1990*, trans. Martin Joughin (New York: Columbia University Press, 1995).↵
28. See Eugene Thacker, *In the Dust of This Planet: Horror of Philosophy, Vol.1* (Alresford, UK: Zero Books, 2011); and Priscilla Wald, *Contagious: Cultures, Carriers, and the Outbreak Narrative* (Durham, NC: Duke University Press, 2008).↵
29. Ali S. Khan, "Preparedness 101: Zombie Apocalypse,"*Centers for Disease Control and Prevention—Public Health Matters Blog*, May 16, 2011, http://blogs.cdc.gov/publichealthmatters/2011/05/preparedness-101-zombie-apocalypse.↵
30. Michel Foucault, *Security, Territory, Population: Lectures at the Collège de France, 1977–78*, trans. Graham Burchell (New York: Palgrave Macmillan, 2007).↵
31. Michel Foucault, *Society Must Be Defended: Lectures at the Collège de France, 1975–76*, trans. David Macy (New York: Picador, 2003).↵
32. Roberto Esposito, *Bios: Biopolitics and Philosophy* (Minneapolis: University of Minnesota Press, 2008).↵
33. Max Weber, *From Max Weber: Essays in Sociology*, trans. and ed. H. H. Gerth and C. Wright Mills (New York: Oxford University Press, 1946).↵
34. Marieke de Goede, *Speculative Security: The Politics of Pursuing Terrorist Monies* (Minneapolis: University of Minnesota Press, 2012).↵
35. See Ron Suskind, *The One Percent Doctrine: Deep Inside America's Pursuit of Its Enemies Since 9/11* (New York: Simon and Schuster, 2007); and Dina Temple-Raston, *The Jihad Next Door: The Lackawanna Six and Rough Justice in an Age of Terror* (New York: PublicAffairs, 2007).↵

36. Ahearn quoted in Mathew Purdy and Lowell Bergman, "Unclear Danger: Inside the Lackawanna Terror Case," *New York Times*, October 12, 2003, A1, A35–37. See also James Meek, "People the Law Forgot (Part Two),"*Guardian*, December 2, 2003, http://www.guardian.co.uk/world/2003/dec/03/guantanamo.usa2.↵
37. Brian Massumi, "Potential Politics and the Primacy of Preemption," *Theory and Event* 10, no. 2 (2007).↵
38. Dipesh Chakrabarty, *Provincializing Europe: Postcolonial Thought and Historical Difference* (Princeton, NJ: Princeton University Press, 2000), 8–10.↵
39. See Randy Martin, *An Empire of Indifference: American War and the Financial Logic of Risk Management* (Durham, NC: Duke University Press, 2007); Kim Fortun, *Advocacy after Bhopal: Environmentalism, Disaster, New Global Orders* (Chicago: University of Chicago Press, 2001); Julie Sze, *Noxious New York: The Racial Politics of Urban Health and Environmental Justice* (Cambridge, MA: The MIT Press, 2006); and Louise Amoore, "Data Derivatives: On the Emergence of a Security Risk Calculus for Our Times," *Theory, Culture, and Society* 28, no. 6 (2011): 24–43.↵
40. See Ursula K. Heise, *Sense of Place and Sense of Planet: The Environmental Imagination of the Global* (Oxford: Oxford University Press, 2008); Robert Poole, *Earthrise: How Man First Saw the Earth* (New Haven, CT: Yale University Press, 2008); and Denis Cosgrove, *Apollo's Eye: A Cartographic Genealogy of the Earth in the Western Imagination* (Baltimore: Johns Hopkins University Press, 2001).↵
41. Martin Heidegger, "The Age of the World Picture," *The Question Concerning Technology and Other Essays*, trans. William Lovitt (New York: Garland, 1977).↵
42. See "China: 64 million empty apartments,"*Asia News*, September 15, 2010, http://www.asianews.it/news-en/Crisis-in-China:-64-million-empty-apartments-19459.html, and Joseph Dumit, *Drugs for Life: How Pharmaceutical Companies Define Our Health* (Durham, NC: Duke University Press, 2012).↵
43. See the RMS website, "Models," http://www.rms.com/models.↵
44. Ron Suskind, *The One Percent Doctrine*.↵
45. "'Doomsday Preppers' Turn Profits,"*Nightline* video, February 6, 2012, http://abcnews.go.com/Nightline/video/doomsday-preppers-turn-profits-15527188.↵
46. See the Terra Vivos website, http://terravivos.com.↵
47. Henry A. Crumpton, "Black ICE (Bioterrorism International Coordination Exercise)," Briefing for Diplomatic Corps, U.S. Department of State, January 17, 2007, http://2001-2009.state.gov/s/ct/rls/rm/07/79413.htm.↵
48. For text of the trade agreement and related TRIPS material, see the WTO website, http://www.wto.org/english/tratop_e/TRIPS_e/trips_e.htm.↵
49. Médecins Sans Frontières, "A Matter of Life and Death: The Role of Patents in Access to Essential Medicines" (Geneva: Campaign for Access to Essential Medicines, Médecins Sans Frontières, 2001).↵
50. Lawrence Lessig, *Free Culture: How Big Media Uses Technology and the Law to Lock Down Culture and Control Creativity* (New York: Penguin Press, 2004). For an important critique of Lessig, see Kavita Philip, "What is a technological author? The pirate function and intellectual property," *Postcolonial Studies* 8, no. 2 (2005): 199–218.↵
51. "UK 'To Take Back Waste That Caused a Stink,'"*Sky News*, July 19, 2009, http://news.sky.com/story/709966/uk-to-take-back-waste-that-caused-a-stink; "Naples Garbage Is Mafia Gold,"*Reuters*, January 9, 2008,

3. Affirmative Speculation

Affirmative speculation is founded on a paradox: it functions and thrives by concerning itself with an uncertainty that must not be reduced to manageable certainties. By definition, affirmative speculation lives by thinking in the vicinity of the unthinkable (rather than by asserting that the unthinkable is in principle always thinkable, knowable, calculable, and so on). As a mode of radical experimentation with the future, it experiments with those futures that are already here and now and yet are different from the here and now. Paradoxically, in affirmative speculation—and hence at a moment of potent self-affirmation—what we affirm is something that has the potential to undo us: this is not, in other words, a self-congratulatory affirmation of what we are; it is, rather, an affirmation of what we might become.

If firmative speculation produces, exploits, and forecloses potentialities, what does affirmative speculation do? Another recursive formula: affirmative speculation *sabotages* the exploitation of potentialities, *produces* the common, and *opens* up innumerable possibilities (unpredictable and, therefore, singular). An affirmative speculation also parleys in potentialities, but it does so somewhat differently. Prototypes, for example, whose context of actualization has not fully arrived, or may never arrive, are forays in affirmative speculation. The prototype, the alpha version, is made to test a concept with the expectation of bugs, kinks, failures—knowing that the thing itself might not be actualized, and hoping that it will. This is hyperbolized in the work of the Hypothetical Development Organization, which devises alternative plans for derelict buildings in order to generate stories about implausible or impossible futures.[1] Science fiction, too, is a way of opening up the future, affirming the possibility that things could be otherwise—its various scenarios and conceits less often about the future as such than about the present estranged from itself, released to uncertainty and the potential for radical difference.[2] So let us now consider a sampling of speculative practices that materialize such affirmative knowledge—creative, plastic, and playful. From these examples, we will see how affirmative speculation potentiates, virtualizes, concatenates, and worlds.

Speculation Potentiates

> If potentiality were, for example, only the potentiality for vision and if it existed only as such in the actuality of light, we could never experience darkness (nor hear silence, in the case of the potentiality to hear). But human beings can, instead, see shadows (to skotos), they can experience darkness: they have the potential not to see, the possibility of privation.
> —Giorgio Agamben, *Potentialities*

What is this withholding, this darkness? It does not cohere with popular understandings of potentiality. He had the potential to become a CEO, a poet, an architect, or a scientist. There are measurable probabilities of success—the capacity, the sheer talent! And appositely, failure: What happened? Why was his potentiality never actualized? What a waste! But Agamben's close reading of Aristotle's *De Anima* ("On the Soul") suggests otherwise: to have the

potentiality to write a poem means to be capable of writing but also to be capable of *not writing*. A sense of latency, a withholding, even recalcitrance; a not acting, a not sending of inherent force down well-charted pathways, Agamben argues, is central to Aristotle's notion of "existing potentiality" (as opposed to the generic potentiality for anything to change). One might have the potential to see the color of light and also its absence, darkness. An architect has the specific ability (knowledge, skills) to build and possesses this ability even when it is nonactualized potential. This faculty can be perceived as latent and unrealized: the "presence of an absence," *potentia qua potentia*.[3] Such a faculty is expressive everywhere: in stem cells, pluripotent cells that have the ability to specialize in manifold ways; in workers trained to act, who withhold action, scuttling that which demands actualization; in certain technological prototypes with unrealized applications that are never mass manufactured; and so forth. The latency signals proliferating possibilities, a sense of the full abyss, darkness. We have named this "the unknown," an abyss that some see as threatening: remember Donald Rumsfeld's infamous "unknown unknowns"? A firmative speculation tames potentiality, measuring and harnessing both potential threats and potential opportunities. But there is also *open* speculation, affirmative speculation, the sense of unrealized potentiality that routinely sabotages efforts to measure, constrain, or limit.

Take a preeminent articulation of open speculation in our times: the romance with potentiality in the biosciences. The promise of immortality bristles within the turbulent force fields of our cellular life: genomics, molecular biology, synthetic biology. Indeed, biochemists engineer cells; microbiologists defy the limits of mass cellular death with immortal cell cultures; geneticists assemble enormous digital databases of the genome; biotech researchers clone sheep and recombine DNA sequences for enhancing seeds, grains, fruits, and vegetables.[4] The gene lures biophysicists, biochemists, molecular biologists, geneticists, information theorists, and artists alike. They produce the gene as a complex epistemic object, embodying speculations on inheritance and the desire for surplus life. Depending on your poison, you focus on the physical architectures, chemical compositions, or informatic models of the gene: a "fuzzy concept," as Hans-Jörg Rheinberger maintains, that eludes final epistemological capture.[5] Popular figurations, such as the famous staircase replica of the double helix in *Gattaca*, index the drive for immortality. Could humans have the potential to live forever? There is gene mapping, regenerative medicine, and cell plasticity; the answers are imminent but as yet not here. But that uncertainty is, precisely, the engine for cutting-edge research.

In this domain of the marvelous, there are protocells. Biochemists and molecular biologists are the new cool. They can now manufacture very basic protocells, simple cells made of oil, salt, and water but with no DNA. Those cells demonstrate lifelike behaviors in their attractions, in their deaths, and in their merging with other cells—indeed in their liveliness as "vibrant matter."[6] Researchers argue that building these cells, rather than DNA databases, will reveal more about complex cells, about "life itself" and its unrealized potentials. And so protocell chimeras abound, as cultural practitioners speculate cellular potentiality. One celebrity practitioner who has popularized the futures of protocells is Rachel Armstrong, a part of the London-based Advanced Virtual and Technological Architectural Research (AVATAR), who insists we think of the potentiality of the inorganic: dead habitats that can repair themselves, new synthetic materials that can adapt to variable weather patterns, shoes with "proto-soles"

sustainable to every foot (figure 13). Her playful film (codirected with Michael Simon Toon) *Protocell Circus* introduces us to these strange organisms, even as the first protocell buildings hit the platforms for architectural innovation.

Figure 13. Protocell shoe. Shoe design, construction, and photography by Michael Wihart, 1998. Reproduced with permission. © PBAI Michael Wihart.

"Imagine getting up in the morning and seeing the decorations in the halls of your home flutter, shiver and convulse as you walk to the coffee machine. A coating on the walls would lock the carbon dioxide you exhale into carbonate salt and change color as you passed, as if it could 'smell and taste' your presence," runs one account of the living architecture that is made

of protocells.[7]At the Venice Biennale in 2010, the architect Philip Beesley and the engineer Rob Gorbet created a junglelike environment bristling with protocells titled *Hylozoic Ground* (figure 14). Could such living environments repair the sinking reef beneath the sinking city? Could the living shoe be singular to its owner, fluidly interacting with the foot that presses on it? Such marvelous tales from the near future generate a sense of boundless possibilities. With dynamic interactive protocells, all contexts for anticipating chemical processes become singular: that is, all possible actualizations of what the protocell could become *cannot* be imagined and, therefore, cannot be generalized. And so probabilistic forecasts based on inferred future states disappear; one might even say they become unnecessary in light of this affirmative speculation.

Figure 14. *Hylozoic Ground*. Philip Beesley, 2010. Reproduced with permission, © PBAI.

In these scenes potentiality seems to belong to the future, always *to come*. But it is equally the case that past events, unrecognized or ignored, can be the locus of potentiality. Historiographies of subaltern insurgencies or wildcat strikes, those causally unconnected events that will not yield to conventional linear histories, often disclose emergent life forces. Another plotting begins, opening to immeasurable possibilities that might have been, a future anterior that *was not*—a withholding, a latency. Wildcat strikes are famously undertaken without the sanction of unions; often unofficial industrial action, they are only regarded as strategies in retrospect (as is now the case with the actions of May 1968). These refusals, a leashed holding of skills in reserve, appear as early as the late nineteenth century in the twilight of industrial utopias. In 1894 there was the Pullman Strike in Chicago, launched against the Pullman Palace Car Company's reduction of wages, when three thousand employees brought the great city to a halt.[8] Such industrial actions are popular among the keepers of the law as well. The blue flu, a wildcat strike when the police force calls in sick, persists in our time. One of the earliest instances was the Victoria Police Strike of 1923, when a

sizable contingent of the police force in Melbourne went off work during the Spring Racing Carnival in response to poor workplace conditions made worse by the inclusion of management spooks. Riots and violent clashes between civilians and the remaining police on duty necessitated the induction of thousands of volunteer constables. Many who had refused to work were discharged, but a Royal Commission in the aftermath of the strike led to increased pay and the establishment of a pension.[9] Only looking back does the historian's eye gather these scattered eruptions as parts of a multileveled emergence whose "causes" require reading gaps in the record or following clues lodged in popular memory (lore, legend, tale, rumor). For historians such as Ranajit Guha who, following Antonio Gramsci, complicate the conception of the proletariat as the historical vanguard, the eruptions of subaltern violence approximate these industrial actions; a reflexive historiography recasts them as precursors to revolution.[10] Georges Bataille might call these outbursts unproductive expenditures of energy, signs of the unconstrained general economy. These outbursts subtract labor power from the productive circuitries of capital, a history of *not doing*—a not doing that constitutes a *doing otherwise*.

Among activist intellectuals these insurrectionist actions are outlined in manifestos, prescriptions for alternative futures. This genre encompasses Donna Haraway's "A Cyborg Manifesto" (1985) as much as the pamphlet guide "How to Protest Intelligently," which circulated among Egyptian citizens before the fall of Mubarak. As a speculative genre, the manifesto renders unstable the distinction between the prescriptive and the descriptive, what might be done and what has been done. Consider the circumstances surrounding the Invisible Committee's *The Coming Insurrection* (published in 2007 in French and officially translated into English in 2009).[11] On November 11, 2008, twenty French youths were arrested in Paris, Rouen, and Tarnac on trumped-up charges of premeditated terror activities, held on suspicion of sabotaging high-speed train lines. A crucial element of the prosecution was their alleged authorship of *The Coming Insurrection*. Julien Coupat, the last of the so-called Tarnac Nine, was released from "preventative arrest" in May 2009; charges against him were never filed. By July 2009 twenty-seven thousand copies of *The Coming Insurrection* had been sold. These happenings occupy our imagination when we recast them as precursors to current occupations, particularly those that do not aim to occupy territory as such, but rather to render it unusable through the massification of crowds. The Invisible Committee puts it so: "For us it's not about *possessing* territory. Rather, it's a matter of increasing the density of the communes, of circulation, and of solidarities to the point that the territory becomes unreadable, opaque to all authority. We don't want to occupy the territory, we want to *be* the territory."[12] Territory as darkness; territory as becoming, a creative *mondialisation*.

There are methods to sensing potentiality, conjectural methods that resemble preprobabilistic speculative practices such as divination or tracking. The great diviners read events (omens, portents), practiced augury (reading animal innards), or sortilege (throwing the die); they noted shapes, relations, and patterns passed down from teacher to student, a priesthood of futurologists. In his essay "Morelli, Freud, and Sherlock Holmes," the historian Carlo Ginzburg maintains that the divinatory impulse persists in the most rational of analytic methods: detection. Detection relies on testimony, on reading scattered signs, on common lore, in order to *intuit* microhistorical forces not accessible in macroindicators.[13] Such historiographies of potentiality give rise to speculative archives that achieve evidentiary status under conditions of

political repression. The Speculative Archive is the name of the collaboration between the Los Angeles–based artists Julia Meltzer and David Thorne. Engaged in poetic revision of official state-sponsored or corporate efforts to "project and claim visions of the future," the duo made a video in 2006 about an unfinished building in Damascus, Syria—a large unfinished structure at the center of the city (in Martyr's Square) slated to become a shopping mall built on a demolished Mamluk mosque. The idea was to explore popular claims over the processes of urbanization, a global "right to the city," David Harvey notes, expressive all over the world as megacity projects mushroom.[14] Named Marquez Bassel al-Assad, after the son of late president Hafez al-Assad, the Damascus building commenced in 1982 (even though the first plans go back to 1967) but remained unfinished until 2006, the year Meltzer and Thorne released their film, *We don't like it as it is but we don't know what we want it to be*. In twenty-four interviews, including one from which the title is taken, we learn that Bassel Al-Assad was tragically killed in 1994. At that point the Syrian government decided to name the building after him. And yet the building sat unfinished, withheld, a maw at the heart of the bustling city; by 2005 rumors that it was sinking had begun to circulate. There was speculation that only the planned mosque attached to the shopping mall would be finished, and the rest would become dust; in fact the weight of pilgrim feet coming to the new mosque, crisscrossing Martyr's Square, would prevent the building from ever rising. In 2006 the debate ended when the Assad government placed a banner atop the structure facing Martyr's Square: "Syria is breathing patriotism."[15] But a speculative archive endures and, with it, evidence of urban aspirations and desires for the city yet to come materialized in urban networks. In the Meltzer and Thorne video, the building becomes a network in the collective work of open, creative speculation. Future anteriors abound, but there are no goals, outcomes, or programs. Those are left to the rich and to the state. The popular claims are indeterminate, neither avowedly religious nor fully secular; without any secure ground, all that remains is to intuit an imaginary city unavailable to official histories. In the context of the present political repression in Syria, the work of the Speculative Archive appears especially significant as a microhistory: one that documents popular antagonism toward the Bashar al-Assad government that had been fermenting for years before the Syrian chapter of the Arab Spring began in 2011.

Where causality will not hold, one *senses* connections. Aristotle regarded this as a faculty, a presence of absence: in their experience of darkness, humans intuitively know they can see. The point cannot be missed, for there are those who will return to intuition to elaborate a sense of cosmic connection. This is a different speculative science, one that opens into an abyss without fear. Baruch Spinoza pursued this cosmological sense in his work on intuition as a "third type of knowledge"—the highest sense.[16] Consider Spinoza's taxonomy: there is a first knowledge that he calls imagination (that is, all representational knowledge based on sensory perceptions and semiotic systems, hence language of any kind); then a second knowledge that he calls reason (nonrepresentational knowledge based on common notions, that is, based on general or universal concepts); and finally a third knowledge, namely, intuition (nonrepresentational knowledge that understands the essence of things by deducing them from the essence of God). Importantly, here the essence of things in their power, their potentiality, is always *singular*. That is, no two things may share an essence in common, and hence this is a specifically nonessentialist notion of essence. Like the diviners who sought a transcendental guarantor for their foresight, for Spinoza the third type of knowledge cleaves us to God, but a

God now reconceptualized as immanent substance, the concatenation of all things, the ontological connectivity of everything. Hence, intuition is also the highest kind of knowledge: a knowledge that is not abstract, uninterested, indifferent knowledge; a knowledge that is no longer simply, merely knowledge, but rather a knowledge that affects us profoundly and transforms us radically, which is why Spinoza calls it the love of God. We shall return to concatenations shortly, and to love, expanding the sense of ontological connectivity into a secular register. But to underscore the point we are making here: an affirmative speculation relying on intuition senses the networked materiality of all things. It apprehends something latent, something unexpressed but possible.

A creative speculation potentiates knowledge, learning to learn from other human and nonhuman actors in this cosmic drama.[17] When the tsunami hit Sri Lanka in December 2004, government officials involved in the staggering human body count wondered at the lack of animal carcasses. Many of the animals and birds, such as the flamingos that nested near sites hit by the tsunami, had fled to the hills three days before.[18] Scientists now hope to harness that potential, that knowledge of coming dangers. Those who are preoccupied with wars against nonhuman agents attempt to mimic their faculties. The United States Defense Advance Projects Agency (DARPA), for one, has launched Operation Prophecy to simulate thinking like a virus. In these scenarios the human no longer seems the central protagonist of cultural, social, or political life. To *intuit* the future is to move beyond human faculty. On this point, however, the uncertain commons are not agreed. There are those among us who are inclined to think with the sciences and move beyond the human: to the posthuman, or the nonhuman agents of history. There are others among us for whom imagination, reason, and intuition are inimitably human categories, for whom intuition as capacity to sense ontological connectivity is a human yet impersonal quality—a potential to sense connections, to feel the density of bodies as they intermingle in communes, at festivals, on dance floors. What all of us do agree on is that modernity has systematically devalued intuition and that intuition has an affinity with what we have been calling affirmative speculation.

Technology in this equation has an uncertain status. As Heidegger suggests, it can harness the power of nature with terrifying consequences, or it can materialize possibilities in a tool, especially in the prototype. Consider the controversial Transborder Immigrant Tool, a collaborative hack of used cell phones that converts them into GPS-enabled devices that migrants can use to locate highways and caches of fresh water while crossing the U.S.–Mexico border. It was fashioned by Electronic Disturbance Theater 2.0 (composed of Ricardo Dominguez, Brett Stalbaum, Amy Sara Carroll, Micha Cárdenas, and Elle Mehrmand). Planned for distribution to immigrant communities (built on a Motorola i455 phone, available for under forty dollars and requiring no service for GPS functionality), the project met with substantial legal and political resistance in the United States. Critics alleged that the tool "encouraged" illegal immigrants to undertake risky crossings, while admirers celebrated the simple tool's life-saving potentialities (for example, directing border crossers to water sources in the desert). Designed as a poetic rather than strictly functional entity, the tool is a prototype, a thought experiment, an idea. Even as an idea the tool has disturbed, provoked, and inspired, and the realization of that idea has been vigorously policed. In the name of the abstract ideals of human rights, hospitality, and justice, the artists took a speculative leap of faith, in the process making

themselves available to very real risks. In the right conditions, the tool could reform the experience of the journey through the desert and even save lives; as a prototype its potential has not yet been fulfilled, not because of a withholding but because it is perceived as too radical a technology, so its context of actualization (patents, manufacturing licenses, distribution rights) must be blocked. It has not yet gone into legitimate production, though it might. It has not yet been conceptually captured by political agendas, though it might. The Transborder Immigrant Tool certainly emerges from a deeply critical view of the apparatus of state security, but its point (goal, program) is not strictly defined. It dares however to make legal threats into opportunities, to insist upon poiesis rather than rational explanation, and to imagine more hospitable and illicit worlds in which we live in common.

Quite another scenario is in play for nuclear energy technologies. Hayao Miyazaki's animated film *Laputa: Castle in the Sky* (1986) circles the vexed epistemic object, atomic energy, the light inside that is invisible but that can kill humans, animals, and plants. Known for his ecological allegories, Miyazaki names a fabled castle in the sky once powered by nuclear energy Laputa, after Jonathan Swift's marvelous flying island in *Gulliver's Travels* (1726/1735), written in the first gasp of modern capitalist expansionism. In *Laputa*, a rambunctious adventure, the two child protagonists learn that the castle fell into ruin because the power hungry sought to steal, harness, and profit from the fire of gods, nuclear energy. Uncle Pomme, an old miner, recounts the tale of the mysterious, forgotten element called aetherium, a pure (unfissured) crystal that Sheeta, the girl protagonist, wears around her neck. In its natural form, the rock is benign, even magical. Its power once lit up the kingdom of Laputa. But it can become a catastrophic weapon when actualized for profit. The film's melancholia responds to a disenchanted modernity: the potential for a technological civilization in harmony with nature once existed but was lost, shattered by human violence and myopia. Atomic light blinds. Yet in the darkness of the old industrial mine the children find an atomic priesthood: the old miner who remembers the lore of the resplendent Laputa. He passes this knowledge to the children, a speculative giving that potentiates a different future—a reenchanted lifeworld, an ecological utopia yet to come.

If Miyazaki's atomic fantastic suggests an occulted potentiality that might yet be uncovered, Michael Madsen's speculative documentary *Into Eternity* (2010) probes the hubris of secrecy. It takes the spectator into the belly of the earth where the state plans to lock away the detritus of human civilization and excessive consumption: nuclear waste. A state-of-the-art facility, Onkalo (Finnish for "hiding place") is a nuclear waste storage site to be located under granite and to be sealed by concrete for the hundred-thousand-year duration of active radiation. Lighting a match in the cavernous facility, Madsen addresses a future "you" who might not be able to read the signs of danger that "we," humans of this present, leave behind (figure 15). The wavering flame is both the light inside you, who might disregard the warnings, but also ironically reminiscent of the potentially radioactive flare that "lives" for a hundred thousand years. It is not the atom, Miyazaki's pure undivided beautiful crystal, that is the threat in this speculative documentary but the impossibility of imagining futures at this geological scale of deep time. In what *context* will the messages and warnings of danger from the present be actualized? Madsen suggests it is not possible to anticipate whether or not human secrecy, the efforts to occult what should have remained untouched, will hold. The greatest threat is human

intrusion, the human curiosity that might make "you" uncover Onkalo and open those gleaming copper canisters full of waste. The human potentiality for knowledge—the drive behind opening the pyramids when entry was forbidden, Madsen explains—can be dangerous, much like the living fire inside the canisters. The spectator intuits danger, especially when told that the Finnish facility is a transposable one, the model for all nations struggling to contain their nuclear waste. The director's voiceover is of the present, but the camera that ventures tentatively into the dark tunnel is the vision of someone in the future. The "documentary" becomes the conjectural, partial knowledge that the present human collective leaves behind. Projected into a time when human languages may well be lost, perhaps all that is left is apprehension of a dangerous presence. Affirmative speculation passes on this sense in oral speculative media: in legend, lore, and story. Like Miyazaki, Madsen, addressing a younger "you," admonished future generations not to enter the void: "do not come here," he repeats in desperation to the abyss, "there is nothing for you here." Perhaps common knowledge passed from generation to generation, like the knowledge passed from Uncle Pomme to Sheeta, is the only means of protection, Madsen might argue—in other words, an atomic priesthood. In this way, the speculative documentary becomes a vernacular archive not found in the annals of history. It enriches our sense of darkness, so that we come to know the costs of light.

Figure 15. *Into Eternity*. Directed by Michael Madsen, 2010.

Speculation Virtualizes

> A life contains only virtuals. It is made of virtualities, events, singularities. What we call virtual is not something that lacks reality but something that is engaged in a process of actualization following the plane that gives it its particular reality. The immanent event is actualized in the state of things and of the lived that make it happy.
> —Gilles Deleuze, "Immanence: A Life"

At the end of his own life, Gilles Deleuze writes of a remarkable character in Charles Dickens's *Our Mutual Friend*, a most disagreeable man on his dying bed. Everyone who has hated the man feels sympathy and concern toward him, fleetingly. Achieving "beatitude," he too experiences sweetness. At this moment in between life and death, he is neither external nor internal, neither object nor subject, Deleuze explains; he is purely "life" experienced in its raw,

untranslatable singularity. As he returns from the brink of death, the people who had hated him again grow cold; he is that man again, the object. He too withdraws into himself, as hard as ever, once more a subject actualized as an individual, once more the usurer, the charlatan. The parable forwards Deleuze's rumination on life, every life with its own immanence. For Deleuze, a life is made of events in the process of actualization, always a becoming.[19] It materializes along a surface, a "plane of immanence" encountered, occasionally, through the senses: "virtualities, events, singularities" always in the process of becoming, vitalities that have not been used up, potentialities that have not yet been exploited.[20] To find such a life, it is necessary to look for those in-between moments.

We have been arguing for the touch of the unknown, the touch of events still coming. This portrait of the virtual, of its always unfinished communication, forwards our thesis regarding media. Speculation depends on mediation, as we have seen with risk media. A singular life is firmly directed toward probable states, generalized, estimated, measured, and constrained. But perhaps affirmative speculation opens to these singularities, these virtualities, its practices "hitting" the body in affect and percept and countering the entire history of speculation in its prioritizing of vision and the visual at the expense of other sensorial experiences.

Artworks, for instance, synthesize the sensible.[21] Rafael Lozano-Hemmer's 2010 *Recorders* exhibit at the Manchester Art Gallery performed the work of sensory intensification by staging an encounter between the continuous scanning of our bodily experiences and movements on the one hand (CCTV, biometrics, biomedical imaging) and the impossibility of a totalizing capture on the other. *Recorders* brought together a set of his recent installations that rely upon the tropes and techniques of surveillance—"recorders" that appropriate the vital signs and pocket contents of the gallery visitors as media.[22] These installations involve literal crowdsourcing, the blinking heart-rate sensors, motion detectors, scanners, microphones, and face recognition software recording personal data that is amalgamated for each respective installation—for example, a collage of fingerprints or video images of previous visitors lingering as ghostly traces behind the shadows of those experiencing the work in the present. *Pulse Room* features hanging light bulbs attached to heart-rate sensors that twinkle as the public walks, stands around, dances, or sits, while *Tape Recorders* features motorized measuring tapes, regulated by motion sensors, that unspool to mark the duration of an individual visit, the length of time a body is physically present in the present. Rather than foregrounding calculation, and thereby the management of bodies, security and medical technologies interact with the crowd's movements and stillness, desires and discomforts, and the intensities and flows of the visitors who move through the art space.

These thrills and sensations harness the "play drive," that primordial life instinct that is organized as culture: dance becomes choreography or specific dance styles, and improvisatory beats become harmony, as Johan Huizinga explains in his groundbreaking *Homo Ludens* (1938). Play precedes normalization, the establishing of rules, and the firming of actions into contest. A speculative, otherworldly activity, play is uninterested in permanence and teleological structure; it is its own purpose. Modernity degrades play, and yet it persists, for civilization "arises *in* and *as* play, and never leaves it."[23] Jacques Derrida revises Huizinga's melancholic observations, which were written as Europe hovered at the brink of war, into a "freeplay" that underwrites and constantly undoes logos, a law-bound presence.[24] Free

playing thus necessarily inhabits the most structured and scripted of game environments. As Huizinga suggests, echoing Georges Bataille's theorization of unproductive expenditures, both the contest (a structure with iterable formulae) and play (the free play of elements, singularities, within it) exist together within the space of the game.[25] There is no firmative horizon in these speculations of a world to come, in these lifeworlds rendered sensible, for example, in massively multiplayer games or alternate reality games that depend on the contingencies of play. Risk and venture, after all, share their connotative field with that of adventure and play, just as piracy shares its claims with crime and the breaking of the law.

The virtual may be understood as a rigorous free play against binding structures, acts of sabotage that constitute participatory networks. In this light the iconic moment of the demonstrations at the University of California, Davis, in November 2011 was not the image of students facing the pepper spray attack by campus police, remarkable as it was to see such a powerful expression of a generation's willingness to put bodies on the line and directly confront militarized authority. True, this happening had all the markers of an event: it occupied the singular space and time of the spectacle, its incalculability (in spite of the surplus of recordings) lending itself to mystification and spiritualization. But what instead became iconic was not so precisely situated: the pepper spray cop meme that exploded in the wake of the event, parodying familiar scenes from cultural history and classical artworks alike, some just for fun (figure 16), but some harnessing a longer political history of free play that changed the world (figure 17).

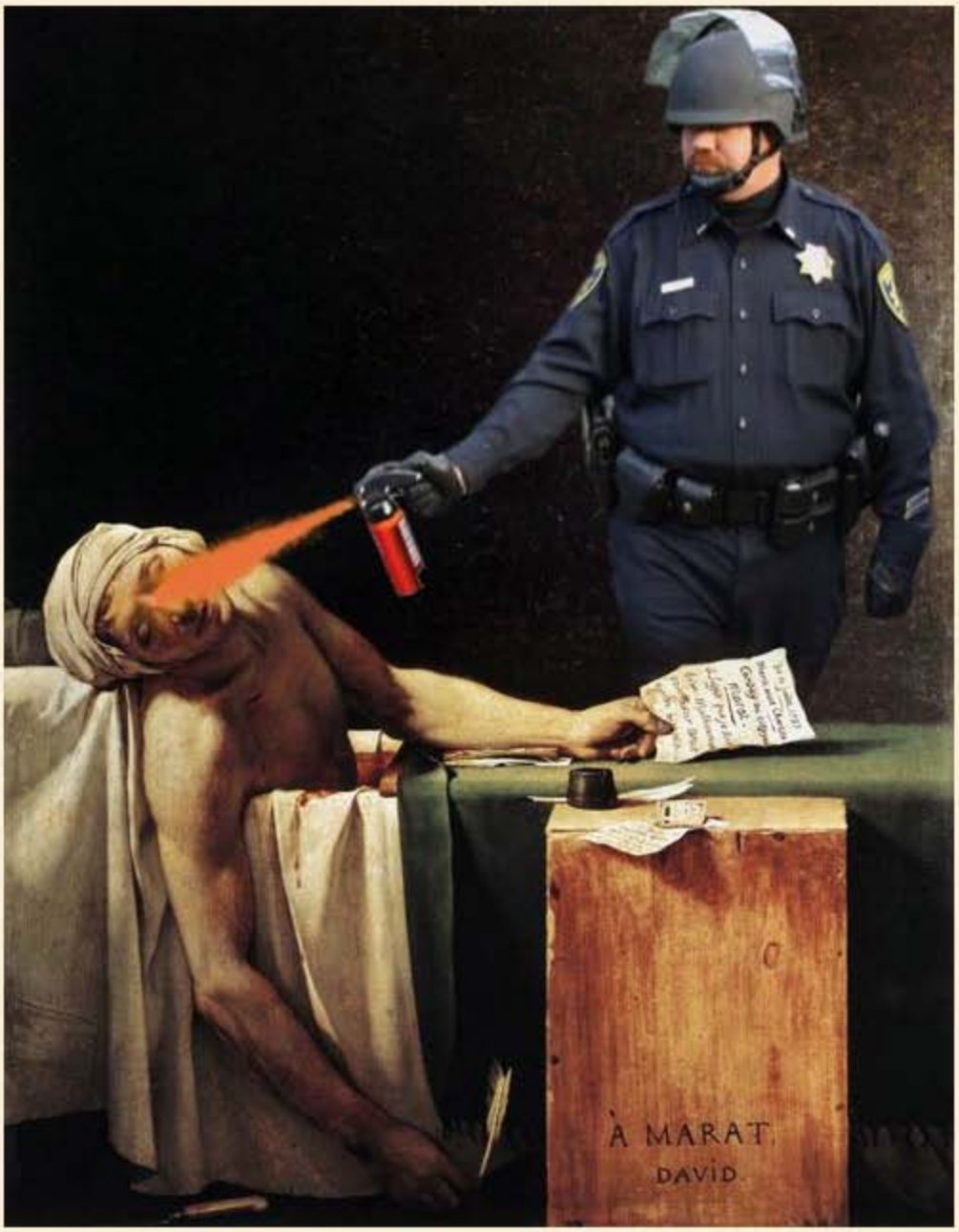

Figure 16. University of California, Davis, pepper spray cop meme. Parody of Jacques Louis David's *The Death of Marat* (1793).

Figure 17. University of California, Davis, pepper spray cop meme. Parody of John Paul Filo's Pulitzer-winning photograph of Mary Ann Vecchio in the aftermath of the Kent State Massacre (1970).

The pepper spray cop meme is an illustrative instance of the use of free play to unsettle the firmative, providing the grounds for improvisation and invention. Play need not necessarily be humorous (witness what Jimi Hendrix does to "The Star-Spangled Banner": feedback, distortion, dissonance). Rather it produces affirmative futures because it does not foreclose the expansive range of potential latent within the system.

And here we return to Anonymous, which after all was instrumental in the uncovering of the name of the police officer directly responsible for the pepper spray attack.[26] On January 21, 2008, Operation Chanology began with a "declaration of war" against the Church of Scientology, and the Anonymous movement launched as a movement out of the merry pranking of 4chan. On February 10, Anonymous members emerged in public with Guy Fawkes masks for the first time and started to realize the magnitude of the international community that had formed. As one member describes the day:

> I remember thinking, am I going to be the only one in the park? Am I going to walk to Scientology with fucking six or seven people, which totally defeats the entire purpose of this because now they can single me out? Then I get up and I start walking around and I see there is a lot of green balloons over there for some reason, on the other side of the park. There was like fucking 200 people. There were Guy Fawkes masks everywhere and I'm like, holy shit, this is huge. . . . I had no idea how many Anons there were until we started moving.[27]

The potential of Anonymous as a collective is precisely this uncertain aspect: it can be anything and everything. Thus its ironic logo mimics that of the UN, extending a promise of future solidarity premised upon the actions of the faceless protestor whose touch would reorient the "state of things" (figure 18). Its predominant technique is still the distributed denial-of-service

(DDoS) attack, which it has used in various operations, including against the Australian government and the Motion Picture Association of America in relation to censorship and piracy issues, as well as in operations against financial companies that have refused payments to Wikileaks (Visa, MasterCard, PayPal). But the political project the movement has claimed for itself is the identification of the *exploit*, the Achilles' heel of any given network, with a particular investment in cracking systems that themselves exploit, as well as capitalize upon and control.[28] In their pranks and DDoS attacks alike, they refuse state and corporate information monopolies and work to sabotage all attempts to foreclose the multiplicities of the singular event. In an age when information is the dearest good, the mythologized figure of the hacker emerges as a heroic protagonist engaged in creative destruction, in "producing the new out of the old."[29]

Figure 18. Anonymous logo.

Hackers may exploit the possibility of spaces but they are not inherently or necessarily utopian. [30] We know of malevolent worms that monitor, spy, or steal in illicit economies of data mining and data commerce. And then there is hacking that simply aims to destroy—no occupation intended, no identifiable security breach for economic or political gain. As early as 1971, Bob Thomas's Creeper worm copied itself into the remote system of the Advanced Research Projects Agency Network (ARPANET) with the message, "I'm the creeper, catch me if you can." Similarly, with the dawn of the new millennium came the Love Bug, also known as the ILOVEYOU worm, written by Onel de Guzman, a computer science student, for his thesis. These too are free play. The touch of the worm across its plane of immanence is felt as it *becomes*. An affirmative speculation that parleys in the new, a setting in motion, is not attached to social values, to good or great things. Nevertheless, a *virtual* community, open in form, appears in the linkages between workers, with no or minimal net access, and an indeterminate number of hackers united in illegality—a distributed common, but not one demarcated by protocols that determine membership.

There are age-old forms of sabotage known to revolutions, age-old technologies such as word of mouth. Open speculation—rumor as a form of doing or making happen—has long gathered a possible *communitas*. Recall Ranajit Guha's analytic of the rumor as the trigger of peasant insurgency. Fleeting, anonymous in its source, intersubjective, and fueled by an uncontrollable impulse to pass on, rumors were codes for political thinking that put to rest any notion of peasant irrationality. Their transmission exposed the multiplicities of decolonization obscured by the Gandhian shadow. The rumor potentiates a possible social to come, as yet virtual, an event, or the potential for an event that has not yet been actualized. A more chilling corporeal sense, this time of bare life where one does not even own one's organs, is produced by the rumors from the poorest sections of Brazil's population: rumors of blue-and-white taxis kidnapping the children of the poor; rumors of the children's bodies found on garbage heaps the next morning, sans livers and kidneys.[31] Rumor is received as real and expands what is known, thereby opening up sites for critical reflection, in this context a virtuality that senses the structural violence of disposability.

A dissolving, a making new, is at hand in the demands for new linkages, new concatenations with transformative power. People meet in the streets; sudden crowds united in social relation before (or to create) public spectacles, sensibly unified by touch, sight, or sound. These concatenations virtualize speculative globalities, unformed and becoming, open to unfolding vicissitudes, open before history.

Speculation Concatenates

> One day this kid will get larger. One day this kid will come to know something that causes a sensation equivalent to the separation of the earth from its axis. . . . This kid will be faced with electro-shock, drugs, and conditioning therapies in laboratories. He will be subject to loss of home, civil rights, jobs, and all conceivable freedoms. All this will begin to happen in one or two years when he discovers he desires to place his naked body on the naked body of another boy.
> —Text from David Wojnarowicz, *Untitled* (1990)

The incantatory text surrounds a black-and-white image of the artist as a young boy, groomed, in a white checkered shirt and suspenders. Short hair, cute overbite. The prophetic subjunctive, the "will be," conveys the irrevocable violence of the social segregation the smiling boy will experience as a cosmic shift. And he will resist it with all his vitality in this memorable expression of *biopotenza* (politics *of* life) constrained by *biopotere* (politics *over* life).[32] There have always been controls over biological existence, a politics over life; but then there has always been the politics of life, vital surges against controls, ungovernable emergences. Here it erupts in this all-American boy. Here, a memory of biopotenza in the sumptuous productions of David Wojnarowicz (1954–1992), painter, photographer, writer, filmmaker, performance artist, and activist, prominent in the New York art world of the 1980s.

The image from 1990 of the *probable* life ("one day") of the paradigmatic white American queer boy serves as a fitting answer to Ronald Reagan's refusal to speak of the "unclean" virus until the death of Ryan White (a nine-year-old child who contracted HIV from a blood transfusion). The piece also mourns the "queer" as nonnormative sexual practices, lifestyles, and epistemologies. Eschewing the fixing of identity, by the early 1980s *queer* had stabilized as the ground of unbounded possibilities. But in Wojnarowicz, those are foreclosed with violence: the child with only one future, invisible to national projects of social reproduction. It

represents a different time. Yet notably, the figure of the kid living the subjunctive has also featured prominently in the national conversation on bullying that followed the sensational suicide of Tyler Clementi in 2010.[33]

Against genocidal silence, the visceral implosion of boundaries—body, social world, religious affiliation, city space—in Wojnarowicz's writings, paintings, videos, and performance art invited opprobrium and censure. His video *Fire in My Belly*, featuring the operatic performer Diamanda Galas, with its sequence of ants crawling over a crucifix, so offended the Catholic League and the U.S. Congress that a predictable controversy over public funding of art erupted (figure 19). (In an uncanny replay of the controversies over Andres Serrano and Robert Mapplethorpe, House GOP leaders John Boehner and Eric Cantor were instrumental in overseeing the expulsion of the work from the Smithsonian.)

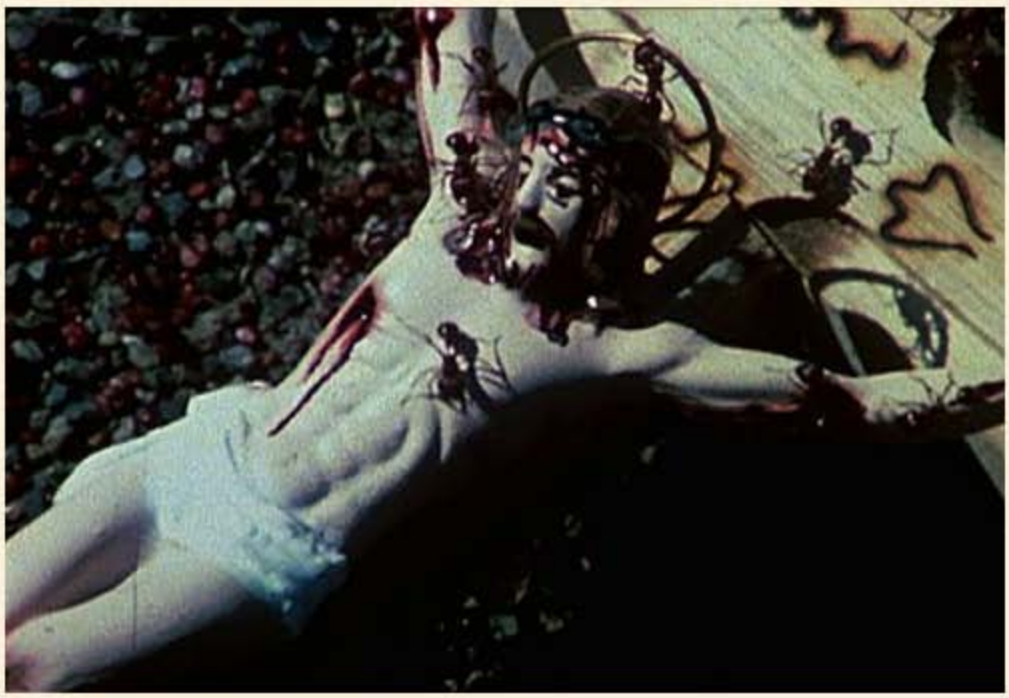

Figure 19. *A Fire in My Belly*. Directed by David Wojnarowicz, 1986–1987.

The screeching soundtrack, with Galas wailing "unclean" a thousand times, made the replication and spread of the virus palpable—the screams, the crawl, the needle in flesh, a sensorial cavalcade against the presidential silence on the new plague. In retrospect this piece from 1987 appears prophetic in its performance of embodied connection to bodies at risk, linking the spectator with the spreading sonic reverberations of the avant-garde aria and stitching, stapling, cutting, burning the body to disperse it into the *communitas*. The film came out the same year Surgeon General Everett Koop sent out an eight-page advisory with details about safe and unsafe sexual practices to 107 million households across the United States, offending both conservatives (including his boss) and gay activists (for the stereotyping). Two signals, artwork and memo, both speculations on concatenation and unassailable connectivity: the memo evoking prohibitions on bodily contact, and the film opening into hitherto unknown bodies, as no immunizing regime could contain HIV, as was imagined, to the East Village or the

bathhouses of San Francisco.

Much has been said of HIV/AIDS activism of this period; much has been criticized and mourned. It is not as if activists would not call for security against the virus; indeed, the fight for funding AIDS research was long and bitter. It is still ongoing, now particularly against the patenting of drugs. But there is an affirmative speculation in the insistence on love, bodily pain, and pleasure against prohibitions and abstinence: biopotenza against biopotere, a living-in-common marked by the possibility of loss. The present debate of the common as a mutuality of interests has been fierce and expansive. There is the common of well-demarcated coteries (of humans, of species, of all living organisms) who are believed to share essential traits, goals, or interests, a closed circuit of actors, and then the common of "those who have nothing in common," a sense of ontological connectivity with others, virtualities not yet here, or instead, here and not yet recognizable, representable.[34] Those others place demands on what appears as *mine*: my liberty, my property, my security, my protections. Modern social contracts turn us away from this perception, confirming individual rights protected against loss. They immunize against that loss, against "others" who might take what "I" have, and therefore against community. Those others might be vulnerable populations whose precarity threatens, or it may be other living organisms, microbial life, viruses, pathogens, struggling to survive just as humans do; the touch of the other feels uncanny, an *uncommon* sense of the common.[35] As we have seen, the socializing force of firmative speculation secures against the common, turning the other into the enemy. There are quarantines, camps, security zones, guarded ports, and borders; they register a weird sense of connectivity, even while immunizing against a more radical sociality.

There is a word for such sociality: *concatenation*, the ontological connectivity of all things. Speaking of memory, in part one of *Ethics*, Spinoza notes: "If the human body has once been affected by two or more bodies at the same time, when the mind afterward imagines any of them, it will straightway remember the others also."[36] Concatenation, he suggests, is embodied connection, and to sense such connection is a kind of love. This concatenation is also God, simultaneously its own cause as well as the cause and the essence of all things. To sense one's singularity or potentiality in this schema is also to sense what inheres in all things, that which binds them together—in short, to sense their concatenations. Another way of putting it: to sense the concatenation of all things, including all human bodies, is to *love*. In religious thought, as in ethics and philosophy, such *reason* informs human empathy and motivates community. That reason persists, if in different guise, in secular humanism and later in posthumanism: that sense of noncausal, associative relations that can be explained not as the touch of divine essence but either as the founding logic of the communitas or as an eco-logic of living in a networked system.

On these logics, we, the uncertain commons, are also not in agreement. There are those among us who remain committed to the human as the subject of politics and therefore to concatenations that speculatively open us to a greater social, a multitude whose horizons cannot be foreclosed as a village, nation, world, or community.[37] And there are those for whom distributed subjectivity, a network of living organisms, of cybernetic and human assemblages or of organic and inorganic matter, are the forms of the collective. But we are all agreed that we live in a distributed mode. We live "in common," shaped less by a shared trait,

goal, or project than by networks, human and/or nonhuman.

Affirmative speculation is not speculative science that seeks methods, procedures, or norms for all seasons; rather, it is a type of contingent knowledge found in practices of speculative living. Memories that smell like gasoline, as Wojnarowicz evocatively noted, provide one example of living concatenated, living distributed in a common marked by the loss of individuation, during the (by now well-documented) HIV/AIDS epidemic of the precocktail era. Activists, writers, and art practitioners privileged informal networks of information and care against institutions ready to "let die" disposable populations. The major push for social change, as the history of AIDS Coalition to Unleash Power (ACT UP) reveals, targeted public policy, the funding of HIV/AIDS research, as well as preventive (clean needles, condoms, advertising) and care (counseling, hospices, alternative medicine) technologies.[38] Scholars reflected on the macabre biopolitics of "letting die," following Michel Foucault's provocations, even as artists speculated on living with radical loss, not immunized, not protected, but among the seropositive, the bereaved, and those made destitute by the virus.[39] The radical concatenations explosive in their works are too many to explore; Wojnarowicz will have to suffice. These works, expressive experiments with concatenation, coexist with far more mundane efforts of the period, such as the harvesting of "care networks" and harm-reduction programs. Not the packaged care of the wellness industry, these were communally funded efforts that facilitated the flow of goods (needles, food, hospice spaces) and information. Starting in the mid-1980s, programs like Clean Needles Now moved quickly from being underground mobilizations to vital health services by the early 1990s. Their presence foregrounds the inevitable connectivity of drugs, bodies, or viruses, those vital circulations that modern societies take as their primary target—to be regulated, reconfigured, and controlled. Public health services, state run or activist, calculate and intervene in these vital circulations, trying to secure them for collective futures but unable to eliminate those social behaviors on which human societies depend. The key question circles the constitution of the collective: Whose future is at stake?

Concatenation is not only a "linking together" or the "state of being joined," as its etymology tells us (from the Latin *concatenare*), but also an ensemble of actions we might characterize as "circulation" or "communication" that facilitates flows—goods, people, information, energies. Working against the forces of regulation, affirmative speculation engages the ungovernable capillaries and networks of a circulatory system. Biomedical and social control mechanisms seek the obliteration of viral emergence, while the vaunted freedoms of the Internet face daily attempts at curtailment. And so the return of biopotenza as creative sabotage. Open collectives such as Anonymous invite all hackers to mobilize their expertise against acts of censorship, security initiatives, and punitive measures, tracing lines of flight that hope to evade state or corporate controls. They crisscross, move over, under, across, or parallel to the legal, the institutional, and commercial pathways; they appear and disappear, lie fallow or erupt unexpectedly. They emerge as the unhomely within.

The ubiquitous sharing of pirated media offers another instance of concatenation. The anarchic, lawless pirate, *hostis humani generis* ("enemy of the human race") of first-century BC Roman law, is ever an ambivalent figure, at once a verminlike and visionary hero who maintains parallel sovereignties threatening to monarchies, empires, and nations. Pirates surf

the open waters of ambiguous jurisdiction and occupy places they do not own; they circulate goods, people, and information across borders and boundaries.[40] They concatenate. At once threatening and fascinating, pirates challenge consensus on what counts as legitimate or as the collective. Sir Francis Drake looted the Spanish Armada for his queen and was knighted for his pains. Pirates were often mobilized as proxy armies for wars between European empires, from the Mediterranean to the Caribbean waters. Operating outside normative social structures, pirate communities were known for their camaraderie, horizontal organization, and profligate sexualities. In most accounts—historical, folklore, or literary—pirates are linked to exploration, adventure, and enterprise. No wonder writers have waxed lyrical about piratical formations as the underside of capitalist modernity. These pirates of yore still inhabit the waters; they still make the news. But in our times, the pirate has a dominant avatar: the media pirate who trespasses on intellectual property.

The problem is not new: in the wake of the wide dissemination of the Gutenberg printing press, the first attempt to codify copyright was the Statute of Anne (1710), which prompted a series of legal battles all through the eighteenth century to determine its applicability.[41] In the nineteenth century, the New World was the site of the most egregious copyright infringements. When Charles Dickens visited America in the 1840s, pleading for the enforcement of stricter copyright regulations against the illegal distribution of his books, his protestations fell on deaf ears. Fast forward to the end of the twentieth century: the United States, along with a handful of Western nation-states, finds itself at the head of the global war on media piracy, pitted against countries such as Brazil, China, India, and Indonesia.

With new technologies of reproduction and distribution, new emergences, new concatenations, we have new protocols such as TRIPS, in the aftermath of which there is a good deal of debate over whether or not media piracy, and specifically cheaply reproduced DVD markets, actually constitute revenue loss for Hollywood and other commercial culture industries, including those centered in Hong Kong and Mumbai. Some point out that the expensive multiplexes in India make it impossible for the lower middle and working classes to attend film screenings: an auto driver who rents his three-wheeler for 500 rupees a day is hardly likely to pay 150 or 200 rupees for a single admission. It is therefore not surprising that he would rather purchase a pirated DVD with as many as five or six feature films on it for 30 rupees (or rent it for 10 rupees) and enjoy the films with his entire family (and neighbors, most likely) for several days. If this option were not available, he would probably skip the screenings altogether. So there is in fact no revenue to be had from this segment of the market. Rather, piracy appears as a distribution system that maintains the flow of images, stories, and entertainment across multiple lifeworlds: it concatenates. Cheap pirated DVDs are sold alongside regular market fare —snacks, cosmetics, dried fish, clothing—in local bazaars, markets, and malls all over the world (figure 20).

Figure 20. Pirated DVDs sold at local markets, Imphal, India.

The documentary filmmaker Paromita Vohra's recent work *Partners in Crime* (2011) tracks the nexus of media pirates, consumers, producers, distributors, and sellers. Among her many interviewees is an eloquent, young DVD seller who regales us with hilarious accounts of his negotiations with consumers, film distributors, and the police. Not blinded by any reductive economic determinism, his explanation for the flourishing underground markets is, first and foremost, pleasure: "Everybody loves piracy!" With remarkable perspicacity, he notes society's deep imbrication in the networks of piracy: "we are all in this together." The camera pans to the full moon benignly looking upon these "gray" circulations, quotidian fare for the poor of the Global South. From the other end of the social spectrum, scholars remind us that piracy can be archival practice for media connoisseurs searching for out-of-distribution movies or live concert recordings: another manifestation of love for the movies or music, another market, another romance.[42] In these accounts piracy appears as efficacious sabotage that *creates* expanded markets, illicit archives, and sensual worlds.

Working at the interstices of social sanction, legal regulation, and institutional protocols, piracy as affirmative speculation tunes one to vectors, circuits, and flows that are often illicit. Buying and selling remain lively business as media commodities are copied, recycled, and exchanged in mobile transactions. Elsewhere there are subversive worlds of physical momentum: the movement of bodies across segregated spaces, across proliferating security zones and gated communities. In this regard the urban practice of parkour elaborates concatenation as embodied technique. Initially developed as a part of military education, parkour is an energetics (vaulting, rolling, running, climbing) that enables its practitioners, traceurs, to navigate natural or urban environments with incredible speed and efficiency.

Popularized by David Belle in France (figure 21), and globally in his star turn in Pierre Morel's hyperkinetic film *District B13* (2004), parkour is the physical prowess to scale, navigate, and cross the borders that separate urban centers from poorer suburbs (the Paris *banlieues*).

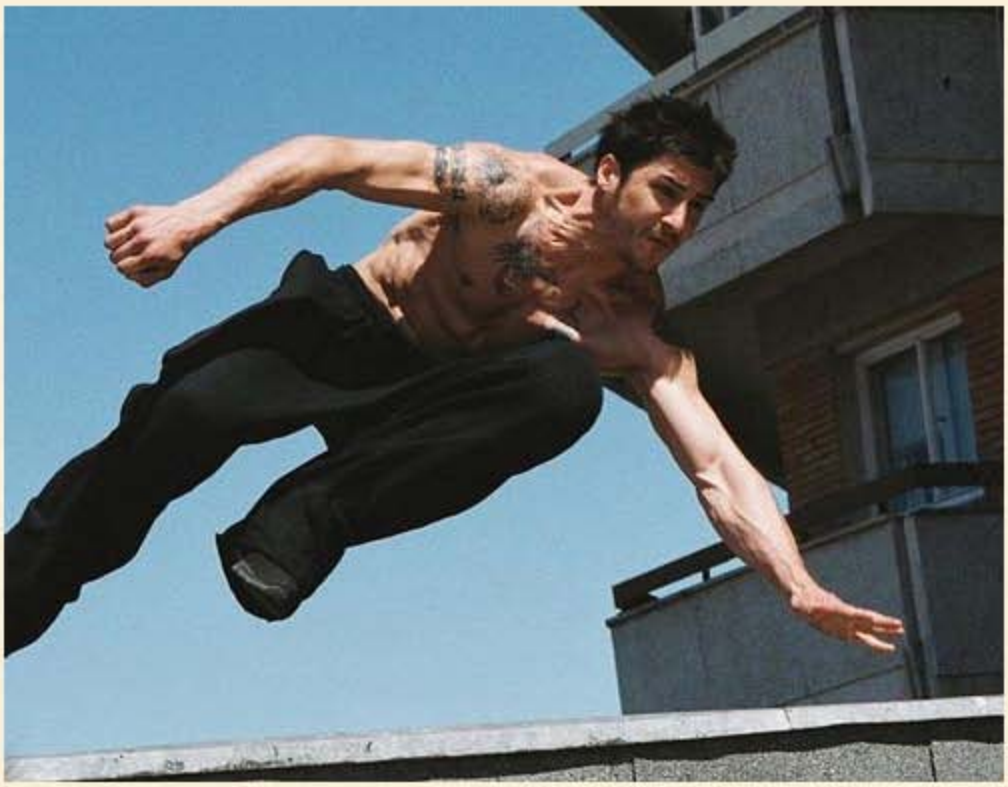

Figure 21. David Belle in action, *District B-13*. Directed by Pierre Morel, 2004.

The skilled, muscled, lightweight, swift body of the young dissident who refuses containment and vaults over concrete, steel, and glass in search of a dexterous freedom concatenates urban spaces. The thrill-seekers who practice this art form embody a cool urbanity at once elegant, tough, and resourceful. Now the subversive use of localized space in Paris has become a global dynamic cultural form (not unlike hip-hop) practiced on the street, featured in films and theatrical productions, and discussed among online communities. Origin myths, adventures, techniques, and philosophies are exchanged across far-flung locales, war wounds and triumphs compared. There is a spreading, uncontained: volatile bodies suspended in midair, without absolute moorings or affiliations, a sense of raw and dynamic potential driving urban youth, countering their disenfranchisement.

Outlaws, pirates, and urban youth: these figures are sometimes utopian; at other moments they loom as the fearsome multitudes that threaten *my* liberty, *my* property, the sovereignty of *my* state. One looks for cover, for security, craving immunization against a *communitas* where nothing is *mine*.

The energetic movements of parkour open a vein into risk socialities, high dangers and still higher thrills. At the same time, it would be a mistake to equate spectacular high-risk "feats" with only the subterranean worlds of urban sabotage. Risk socialities or risk-taking cultures are

not always open to all.[43] Quite the contrary: membership into a social group capable of high-risk ventures is often policed, regulated, controlled. Stockbrokers fiercely guard entry and exit to their proverbial "boiler rooms"; subcultures of inveterate surfers and other extreme sport coteries protect their turfs (and parkour is no exception). Consumers of media spectacles—from action films to daredevil stunts to visceral magic—are enthralled with high-risk skills, an incredulous chasm yawning between the common "us" and the extraordinary "them." And so the slack-jawed spectator celebrates Tom Cruise, in his waning forties, scaling Dubai's epic Burj Khalifa, the tallest building in the world in *Mission Impossible IV: Ghost Protocol*. His giant shadow eclipses those anonymous construction workers who skillfully negotiate the high scaffolds of Dubai, braving hostile desert winds and a scorching sun—workers living the daily possibility of death without the meticulous safety measures that secure celebrity stunts (Human Rights Watch calculates thirty-four on-site deaths per year).[44] These discontinuous worlds pass each other without contact. When they touch, inadvertently, coincidentally, they shiver at the concatenation. That too is affirmative speculation, that sense of precarious life, of radical occupation by the other—the discomfort of unwarranted propinquity, of living-in-common.

Speculation Worlds

> In a sense, the real challenge today is not finding a new or improved version of the world-for-us, and it is not relentlessly pursuing the phantom objectivity of the world-in-itself. The real challenge is confronting this enigmatic concept of the world-without-us, and understanding why this world-without-us continues to persist in the shadows of the world-for-us and the world-in-itself.
> —Eugene Thacker, *In the Dust of This Planet*

There is mounting evidence of radical uncertainty, of a world where disasters, accidents, or catastrophes recur at unprecedented scales. Scientists describe its mechanisms, a world-in-itself of energies, movements, and flows. We have characterized this world as nonhuman; for Eugene Thacker it is "Earth." There is also the world we have made, the world-for-us.[45] This too cannot be comprehended in all its totalities, despite all dissembling cognitive maps; this is the "World" in Thacker's formulation. If life today is lived at the interface, speculatively encountering the "Earth" from the edge of the "World," that unsettling place is the "Cosmos," Thacker maintains, a strange experience of the world-without-us materializing across domains of knowledge. Not so far from Martin Heidegger's "surrounding world" that discloses itself as subjects move about in a "common world," trying to manage that ambient encounter by distinguishing the world as external to humans.[46] Both thinkers provoke us to think the world as an ensemble of actions and interactions, a constant becoming that is always sensed as both mutual (relay, feedback) and mutable (contingent, changeful). A time-honored philosophical perception, one might say. But newly resonant, we might add, amid this speculative turn where the unknown presses upon us across domains of knowledge and practice, from the ecological to the cybernetic, the biological and the social.[47] Where a firmative speculation, aggrandizing all possibilities in the name of the human again, remains resolutely in the world-for-us, an affirmative speculation ventures out on the ledge, looking into and touching the abyss that unsettles in full realization of our insufficiency of knowledge. More daring are those ventures that speculate on potentialities, vivifying them in speculative practices. These acts open worlds, something not known but to come, contingent and ephemeral. We write of these worlds in the spirit of speculative living.

But before the excursion, you will notice we persist with "the world," despite its historical articulation as irrevocably *human*, constituted by a mutuality of human interests. This, too, is a sign of differing views within the uncertain commons. For some the most urgent task at hand is to attend to what the sciences tell us, what technologies can achieve without the human; for others, the incommensurable human worlds that "we," the subject at any given location, encounter as shadowy, ungraspable, are the world-without-us, a subtraction, a differential. We agree that our sense of ontological connectivity to the nonhuman or the human other *unsettles* and therefore locates us in an ambience, a surrounding. We agree that there have been many attempts to manifest, describe, and vivify this shadow world; we agree that it mandates a constant becoming, a sense of unfolding; and we agree that the world is not an object but an ensemble of actions. But this theoretical feeling toward a common task makes this book a speculative exercise, written in solidarity with the forms we collect below.

It is best to begin with affirmative speculation in social worlds. We have dallied in them already, pausing on stalled projects in Damascus or the energetics of parkour amid new urban segregations. If parkour sabotages constraining exits and entries to metropolitan centers, the speculative historiographies of the "city yet to come"—to echo Abdou-Maliq Simone's evocative phrase—bring news of possible worlds that the urban denizens sense but cannot fully articulate.[48] The speculative capital of urban development (malls, parks, housing, highways, monuments) meets another speculation, affirmative speculation, in the actions of city residents who seek to make architectures and infrastructures anew.[49] They hedge their bets, deploying contingent vivifications of the city that they "live" virtually, a city that is navigable, hospitable, and woven around existing communities. There are stories of many cities in Simone's account of popular participatory speculative living, not the least of which is an imaginative occupation of urban spaces. Such occupation is motivated by the collective perceptions of shadowy forces, regional and multinational corporate collaborations, surreptitiously at work. An evocative testimony to popular spatial agency lies in a story Simone tells about the huge sculpture *La Nouvelle Liberté* hoisted at the center of planned modern downtown Doula, a city of 3.5 million. It remained unfinished for a lengthy period, in light of massive, heterogeneous protests about intentions, aesthetics, inconvenience, and a number of other criticisms. There was no one point of opposition to be found, but a concatenated mutuality of interests that sabotaged the statue's completion—an uncertain common born of contingency. In such stalling, in incompletion, there is evidence of incommensurable worlds, temporally distinct, the one racing to play catch up to shining megacities and the other struggling to mold concrete and tar to everyday habit.

Unmaking, in this African story, is imaginative work, as creative as graffiti, perhaps the most cited form of expressive sabotage. In the Kreuzberg and Neukölln neighborhoods of contemporary Berlin, graffiti memorials for the victims of neo-Nazi hate crimes habitually repudiate the official record of acts cataloged as "politically motivated crimes" (figure 22). Activists cite as many as three thousand dead since the reunification of Germany, while only two hundred are found in police files. In a city of resplendent memorials—of which the Holocaust Memorial, the Memorial to Homosexuals Persecuted under Nazism, and the Soviet War Memorial are the most famous—there is a striking absence of official effort to acknowledge the hate crimes of the last two decades. The graffiti are constantly painted over;

yet they keep reappearing, potentiating a defiant politics of memorialization. An open invitation for endlessly proliferating these acts of remembering for future participants, the graffiti situate these hate crimes in relation to the long history of atrocities. At the same time, the curious but uninformed Berliner or the tourist is reoriented to urban forces that pulse beneath the surfaces and façades of the city. Mobilizing a network of social relationships around mourning—concatenating, in other words—these artistic engagements push for a more hospitable urban space. Such accounts of urban speculative living disclose an occulted world, the touch of the other that we find across artistic articulations of fast-changing urban environments.

Figure 22. Commemorative graffiti in Kreuzberg, Berlin, 2012.

And then there are technologically sophisticated media platforms that allow for creative speculative praxis, a playing with worlds that are resonant with the imaginative urbanism featured in tales from contemporary cities. If artists once had hands, Play-Doh, and the imagination, digital tools now facilitate world making in an array of online platforms, making sensible an alternative concatenation of embodied knowledge and social relations.[50] The artist Cao Fei's installation of RMB City in the online world of Second Life is an exemplary instance of materializing speculative living through virtual environments (see figure 23).[51] A critical engagement with rapid urbanization launched in 2008, RMB City incarnates contemporary Chinese megalopolises. Informed by Cao's immersion in electronic entertainments, pop culture, and advertising, those who visit RMB City as avatars with magical powers can live urban fictions they cannot live in their actual environments (for example, Cao visits the city as China Tracy). A baroque, recognizably Chinese but insistently artificial urban landscape greets those avatars who visit: a Ferris wheel rotates atop the Monument to the

People's Heroes, water from the Three Gorges reservoir gushes out of the Tiananmen rostrum, and aerial supermalls and floating statues of Mao Zedong materialize on the horizon in this parallel world. Their immersion, an embodied intimacy with the space, becomes a reality that unfolds as creative experimentation.

Figure 23. *RMB City*. Cao Fei, Second Life, 2008.

Like "play," the literature on creativity as a life force is vast. But this manifesto has cast its lot with certain thinkers, especially to elaborate affirmative speculation—which is so much more difficult to do than just critique predatory speculation! In this regard we might foreground Henri Bergson's theories of the élan vital, the original, common impulse to change that inheres in all living organisms. Humans experience this life instinct temporally as duration, Bergson explains, even as we analyze, comprehend, and spatialize that flux as discrete units of time dictated by practical necessities. Intuition once more recuperates the tendency to change: we sense an unfolding even as our potentiality for change is measured, assessed, harnessed—altogether foreclosed—as we have argued, in the practical organization of the world. A pragmatic intelligence that speculates quantitative multiplicities (the planned uses of parks and malls, for example) precludes the touch of qualitative life, an instinct. Between intelligence and instinct lies that third knowledge, intuition, so critical to "creative evolution," to the constant breaking into the new.[52] In the cities we have touched upon, the blueprint diagrams the global city as managed space, precisely manifesting such a will to analyze and organize, while speculative occupation opens into other possibilities for living the urban. An affirmative speculation that senses potentiality lives it, virtually, and creatively materializes worlds yet to come.

Following Bergson, if the worlds we make, partially actual and partially virtual, are necessarily plastic, malleable, and mutable, they often materialize in the experimental form. The new media artist Marcos Novak, for example, works with 4-D algorithmic architectural forms that are "liquid" in their temporal mutations. For a traveling exhibit, *Turbulent Topologies*, Novak created a loop between actual urban life and a digital simulation to capture "turbulence," both the condition and the formal principle of life in the global metropolis. One of the pieces in the

are "liquid" in their temporal mutations. For a traveling exhibit, *Turbulent Topologies*, Novak created a loop between actual urban life and a digital simulation to capture "turbulence," both the condition and the formal principle of life in the global metropolis. One of the pieces in the exhibit that traveled to several cities, including the Eleventh Venice Architecture Biennale, consisted of a 4m cube containing an "invisible sculpture/invisible architecture" fashioned by motion-capture cameras.[53] When visitors enter the installation space with a sensor and "touch" the invisible shapes, they trigger a sound field and initiate behavioral changes in the projected display. With this piece Novak sought to indicate the hidden currents, sudden, unexpected connections, unseen networks, and spontaneous associations that constitute lived urban space. The resultant "strange geometries" were formed by the visitor's effort, imagination (what the visitor "saw"), and action (how the visitor "traversed" the cube), as much as artistic and technological craft.[54]

But urban spaces are not the only gatherings that attract speculative practice, far from it. Speculative worlds are found at the planetary scale: there are resplendent computational models of climate change, not just for Earth but also for Mars (for example, the NASA Ames Mars Climate Change Modeling Group); the UN hosts an Office of Outer Space Affairs (OOSA), whose mission is to prepare for the possibility of an "alien" visit, to speculate on what earthly responses would be instantly mobilized. In these ventures, speculation worlds on a planetary scale; the imagination is ecological, straining beyond the great outdoors. And of course, there is space prospecting and space tourism, the affluent anticipating the new frontiers of land speculation and "safe" leisure spaces far from the hostile multitudes. Such enterprises metastasize the present, repeating patterns of privilege in outer space (anything from $95,000 to $150 million).[55] As we have been arguing, these are evolving forms of firmative speculation. But we have also insisted that the story does not end here. There are planetary worlds lived as affirmative speculation, when continuities between land, water, animals, plants, soil, and pathogens become expressive in the ecological popular. That popular is manifest in the direct action of popular struggles across the globe. One may remember the primal scene of the Chipko movement against deforestation in South Asia in the 1970s, where sixty men contracted to cut trees floundered in the face of the original tree huggers (*chipko* literally means to squeeze tightly), assemblages of twenty-seven women and trees. Led by the legendary Gaura Devi, the Reni forest encounter in 1974 became a part of oral lore, speculative media first sung by the admiring head contractor.[56] On the other side of the world, the Earth Liberation Front (ELF), a transnational leaderless movement, whose members are popularly known as Elves, would wreak phantom destruction on those who attack the earth. A haunting image featured on the ELF website—the blue planet locked under a rusting industrial grid, secured by firmative speculation (figure 24)—signals their targets of critique: all institutions engaged in resource extraction and environmental degradation. Their agitprop actions, labeled as "terrorist acts" by the FBI and "ecotage" or creative "monkey-wrenching" (after Edward Abbey's *The Monkey Wrench Gang*, 1975) by sympathizers, express solidarity with all things living: animals, plants, soils, and waters. These resonant histories of creative sabotage affirm planetary continuities, new collectives of the human and nonhuman concatenated against globalizing schemes.[57] Such loosely chain-linked efforts are "frictions" along the well-charted pathways of globalization, transformative processes that intervene against foreclosures.[58]

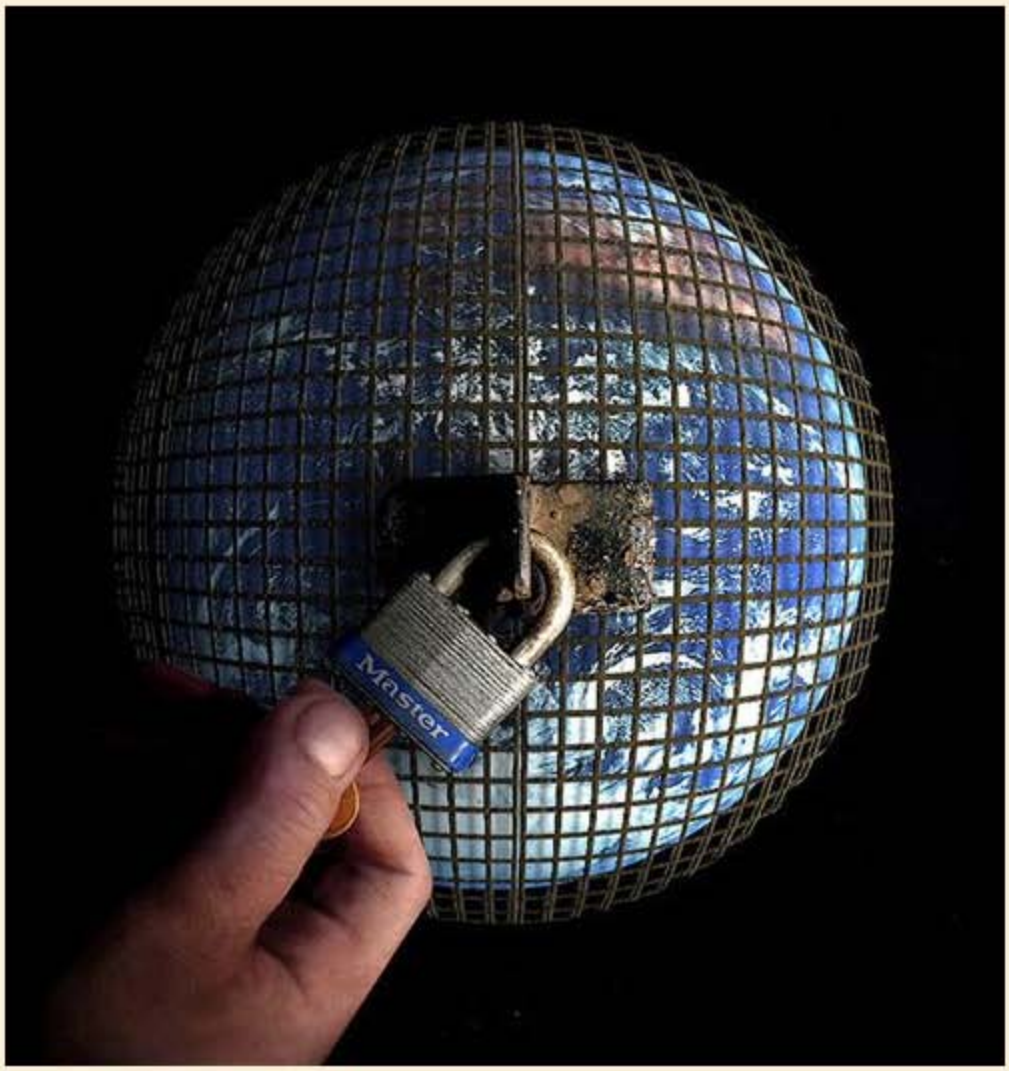

Figure 24. *Prison Planet*. AZRainman (Mark Rain). Reproduced under Creative Commons Attribution 3.0.

The question is that of framing a world adequate to these praxes. In search of another mode of world making, Jean-Luc Nancy turns to mondialisation, a term drawn from the French Resistance, as a bulwark against realpolitik: a space of possibility, of becoming.[59] Such a world is no longer grasped as representation, and no worldview can represent it. Mondialisation begins with the negation of the finite: as the world unfolds to our senses, we move away from the world as object and experience it as coming into existence. In the contingent occupations we have explored, these acts of creative sabotage, the sense of lived planetary continuities, we witness such creative mondialisation. Unlike Chipko, contemporary ecological mobilizations are often transnational and fueled by new media technologies (ELF has no fixed membership but undertakes actions under the moniker in seventeen different countries). Like the Occupy movement, such contemporary ecological actions are strange hybrid assemblages of direct action (gesture, voice, bodies flooding space) and social media. They are "open" not only in their mutable goals, agendas, or demands but also in their form as emergent, fluid networks, often anonymous, certainly invisible, festering, unsettling. In short,

they *make worlds*.[60]

The desire to make worlds, of course, is an ancient one. We are not so presumptuous as to imagine that we are the first (or the last) to burn with such a desire. World-making aspirations and vocations, for example, drive all discourses and practices of utopia: from Thomas More to Ernst Bloch to Octavia Butler and beyond, there extends a network of visionary utopians, whose alternate worlds, parallel universes, and virtual realities are always rooted in the actual materialities of the here and now. Or as Samuel Butler put it: Erewhon, that is, no-where but also now-here. (Even thinkers as vehemently anti-utopian as Gilles Deleuze and Félix Guattari acknowledged and paid homage to the materialist vitality and revolutionary impulse of the utopian tradition.)[61]

Such world-making practices scale. Whether community gardens or transnational ecological movements, acts of speculative living affirm our being in common. They are commonist in the sense of affirming social relations not mediated by markets, collectives within which the production of goods and knowledge is organized.[62] Peer-to-peer networks and participatory scholarship is not far behind, with conglomerates of critical thinkers sharing and writing together in collaborations, collectives, and loose cultural formations. We have already expressed solidarity with particular formations. And equally, we have expressed dissensus. In the subsequent collision of objects, histories, and scales, our intent is not to agree upon a language or description for how newness, the radically unknown and unforeseeable, appears in the world but to develop the epistemological conditions of possibility for that emergence. The modes of affirmative speculation offer a schematic for what it is we *do* when we see or touch the edge. At the very least, we hope these propositions will occupy your imagination.

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1. The Hypothetical Development Organization, *Implausible Futures for Unpopular Places* (San Francisco: Blurb, 2011). On prototypes and design fictions, see Julian Bleecker and Nicolas Nova, *A Synchronicity: Design Fictions for Asynchronous Urban Computing* (New York: Architectural League of New York, 2009); Johanna Drucker, *SpecLab: Digital Aesthetics and Projects in Speculative Computing* (Chicago: University of Chicago Press, 2009); and Anne Balsamo, *Designing Culture: The Technological Imagination at Work* (Durham, NC: Duke University Press, 2011).↵
2. Darko Suvin, *Metamorphoses of Science Fiction: On the Poetics and History of a Literary Genre* (New Haven, CT: Yale University Press, 1979); Samuel R. Delany, *Starboard Wine: More Notes on the Language of Science Fiction*, 2nd ed. (Middletown, CT: Wesleyan University Press, 2012); Carl Freedman, *Science Fiction and Critical Theory* (Middletown, CT: Wesleyan University Press, 2000); Fredric Jameson, *Archaeologies of the Future: The Desire Called Utopia and Other Science Fictions* (New York: Verso, 2005); Brooks Landon, *Science Fiction after 1900: From the Steam Man to the Stars* (New York: Routledge, 1995); and Istvan Csicsery-Ronay Jr., *The Seven Beauties of Science Fiction* (Middletown, CT: Wesleyan University Press, 2008).↵
3. Giorgio Agamben, *Potentialities: Collected Essays in Philosophy*, ed. and trans. Daniel Heller-Roazen (Palo Alto, CA: Stanford University Press, 1999), 179. See also Enrique Dussell, *Twenty Theses on Politics*, trans. George Ciccariello-Maher (Durham, NC: Duke University Press, 2008).↵
4. See Lily E. Kay, *The Molecular Vision of Life: Caltech, the Rockefeller Foundation, and*

the Rise of the New Biology (New York: Oxford University Press, 1993); Richard Doyle, *Wetwares: Experiments in Postvital Living* (Minneapolis: University of Minnesota Press, 2003); Hannah Landecker, *Culturing Life: How Cells Became Technologies* (Cambridge, MA: Harvard University Press, 2007); Sarah Franklin, *Dolly Mixtures: The Remaking of Genealogy* (Durham, NC: Duke University Press, 2007); Luis Campos, "That Was the Synthetic Biology That Was," in *Synthetic Biology: The Technoscience and Its Societal Consequences*, ed. Markus Schmidt et al. (Dordrecht, Netherlands: Springer, 2009), 5–21; and Robert Mitchell, *Bioart and the Vitality of Media* (Seattle: University of Washington Press, 2010).↵

5. Hans-Jörg Rheinberger, *An Epistemology of the Concrete: Twentieth-Century Histories of Life* (Durham, NC: Duke University Press, 2010). See also Evelyn Fox Keller, *The Century of the Gene* (Cambridge, MA: Harvard University Press, 2000); Judith Roof, *The Poetics of DNA* (Minneapolis: University of Minnesota Press, 2007); and Jackie Stacey, *The Cinematic Life of the Gene* (Durham, NC: Duke University Press, 2010).↵
6. Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham, NC: Duke University Press, 2010).↵
7. Matthew Van Dusen, "Living Architecture: Rachel Armstrong Wants to Replace 'Dead Habitats' With Protocells,"*Txchnologist*, February 8, 2012, http://web.archive.org/web/20120211043650/http:/www.txchnologist.com/2012/living-architecture-rachel-armstrong-wants-to-replace-dead-habitats-with-protocells.↵
8. Almont Lindsay, *The Pullman Strike* (Chicago: University of Chicago Press, 1943), 123.↵
9. Gavin Browne and Robert Haldane, *Days of Violence: The 1923 Police Strike in Melbourne* (Victoria, Australia: Hybrid Publishers, 1998).↵
10. Ranajit Guha, *Elementary Aspects of Peasant Insurgency in Colonial India* (Delhi: Oxford, 1983).↵
11. Selected translated pages of "How to Protest Intelligently," including the "demands of the Egyptian people," are available from San Francisco Bay Area Indymedia, https://www.indybay.org/newsitems/2011/01/29/18670645.php.↵
12. The Invisible Committee, *The Coming Insurrection* (Los Angeles: Semiotext(e), 2009), 108.↵
13. Carlo Ginzburg, "Morelli, Freud, and Sherlock Holmes: Clues and Scientific Method," trans. Anna Davin, *History Workshop* 9 (1980): 5–36.↵
14. David Harvey, *Rebel Cities: From the Right to the City to the Urban Revolution* (New York: Verso, 2012).↵
15. Julia Meltzer and David Thorne, *The Speculative Archive*, New York Foundation for the Arts, 2006, http://www.nyfa.org/level3.asp?id=516&fid=6&sid=17.↵
16. Benedictus de Spinoza, *Ethics*, ed. and trans. G. H. R. Parkinson (New York: Oxford University Press, 2000).↵
17. Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory* (Oxford: Oxford University Press, 2005).↵
18. Mark Bendeich, "Elephants Saved Tourists From Tsunami,"*Reuters*, January 4, 2005, http://www.planetark.com/dailynewsstory.cfm/newsid/28783/story.htm.↵
19. Gilles Deleuze, *Pure Immanence: Essays on a Life*, trans. Anne Boyman (New York: Zone Books, 2001).↵
20. Steven Shaviro, *Without Criteria: Kant, Whitehead, Deleuze, and Aesthetics* (Cambridge: MIT Press, 2009).↵
21. Elizabeth Grosz, *Chaos, Territory, Art: Deleuze and the Framing of the Earth* (New

York: Columbia University Press, 2008).↵

22. "*Recorders*: Rafael Lozano-Hemmer," Manchester Art Gallery, September 2010–January 2011, http://www.manchestergalleries.org/whats-on/exhibitions/index.php?itemID=73. On the speculative politics of Lozano-Hemmer's surveillance work, see Kriss Ravetto-Biagioli, "Shadowed by Images: Rafael Lozano-Hemmer and the Art of Surveillance," *Representations* 111 (2010): 121–43.↵
23. Johan Huizinga, *Homo Ludens: A Study of the Play-Element in Culture* (London: Routledge and Kegan Paul, 1949), 173.↵
24. Jacques Derrida, "Structure, Sign, and Play in the Human Sciences," *Writing and Difference*, trans. Alan Bass (New York: Routledge, 1978), 278–94.↵
25. Georges Bataille, *The Accursed Share: An Essay on General Economy* (New York: Zone Books, 1991).↵
26. Anonymous Operations, "DOX: UC Davis Pepper Spraying officer, Lt. John Pike," November 20, 2011, http://anoncentral.tumblr.com/post/13023795840/dox-uc-davis-pepper-spraying-officer-lt-john-pike.↵
27. Brian Knappenberger, dir., *We Are Legion: The Story of the Hacktivists* (Venice, CA: Luminant Media, 2012).↵
28. Alexander R. Galloway and Eugene Thacker, *The Exploit: A Theory of Networks* (Minneapolis: University of Minnesota Press, 2007).↵
29. McKenzie Wark, *A Hacker Manifesto* (Cambridge, MA: Harvard University Press, 2004), 4.↵
30. Alexander R. Galloway, *Protocol: How Control Exists After Decentralization* (Cambridge, MA: MIT Press, 2004).↵
31. Nancy Scheper-Hughes, "The Global Traffic in Human Organs," *Current Anthropology* 41, no. 2 (April 2000): 1–59; and "Parts Unknown: Undercover Ethnography of the Organs-Trafficking Underworld," *Ethnography* 5, no. 1 (2004): 29–73.↵
32. Cesare Casarino and Antonio Negri, *In Praise of the Common: A Conversation on Philosophy and Politics* (Minneapolis: University of Minnesota Press, 2008).↵
33. Now Wojnarowicz's *Untitled* is brought out from museum archives and displayed once again; see Tyler Green, "Wojnarowicz 'One day this kid . . .' to Come Out,"*Modern Art Notes* (blog), *Blouin Artinfo*, November 10, 2010, http://blogs.artinfo.com/modernartnotes/2010/11/wojnarowiczs-one-day-this-kid-to-come-out.↵
34. Alphonso Lingis, *The Community of Those Who Have Nothing in Common* (Bloomington: Indiana University Press, 1994). For the discourse on postcommunity, also see Jean-Luc Nancy, *The Inoperative Community*, trans. Peter Connor (Minneapolis: University of Minnesota Press, 1991); Giorgio Agamben, *The Coming Community*, trans. Michael Hardt (Minneapolis: University of Minnesota Press, 1993); and Jacques Derrida, *Of Hospitality: Anne Dufourmantelle Invites Jacques Derrida to Respond*, trans. Rachel Bowlby (Palo Alto, CA: Stanford University Press, 2000).↵
35. Judith Butler, *Precarious Life: The Powers of Mourning and Violence* (New York: Verso, 2004).↵
36. Spinoza, *Ethics*, 97.↵
37. Michael Hardt and Antonio Negri, *Empire* (Cambridge, MA: Harvard University Press, 2000); and Paolo Virno, *The Grammar of the Multitude*, trans. Isabella Bertoletti et al. (New York: Semiotext(e), 2004).↵
38. See essays in Leo Bersani and Douglas Crimp, *AIDS: Cultural Analysis, Cultural*

Activism (Cambridge, MA: MIT Press, 1988); Paula A. Treichler, *How to Have Theory in an Epidemic: Cultural Chronicles of AIDS* (Durham NC: Duke University Press, 1999).↵

39. On the (im)possibility of gay subjectivity in that era, see Michael Warner, "Unsafe: Why Gay Men Are Having Risky Sex," *The Village Voice*, January 31, 1995.↵
40. On piracy and community structures, see Daniel Heller-Roazen, *The Enemy of All: Piracy and the Law of Nations* (New York: Zone Books, 2009); Marcus Rediker, *Between the Devil and the Deep Blue Sea: Merchant Seamen, Pirates, and the Anglo-American Maritime World, 1700–1750* (Cambridge: Cambridge University Press, 1989); and Sebastian R. Prange, "A Trade of No Dishonor: Piracy, Commerce, and Community in the Western Indian Ocean, Twelfth to Sixteenth Century," *American Historical Review* 116 (2011): 1269–93.↵
41. Adrian Johns, *Piracy: The Intellectual Property Wars from Gutenberg to Gates* (Chicago: University of Chicago Press, 2010).↵
42. On the potentialities of media piracy for the Global South, see Ravi Sundaram, *Pirate Modernity: Delhi's Media Urbanism* (New York: Routledge, 2010); and Lawrence Liang, "Porous Legalities and Avenues of Participation," *Sarai Reader* 5 (New Delhi: Sarai Media Lab, 2005): 6–17. On the politics of copied media, Laikwan Pang, *Cultural Control and Globalization in Asia: Copyright, Piracy, and Cinema* (New York: Routledge, 2006); and Ramon Lobato, *Shadow Economies of Cinema: Mapping Informal Film Distribution* (London: British Film Institute, 2012). On bootlegging and archival practices in North America, see Lucas Hilderbrand, *Inherent Vice: Bootleg Histories of Videotape and Copyright* (Durham, NC: Duke University Press, 2009).↵
43. Randy Martin, *The Financialization of Daily Life* (Philadelphia: Temple University Press, 2002).↵
44. "Building Towers, Cheating Workers,"*Human Rights Watch*, November 12, 2006, http://www.hrw.org/node/11123/section/6.↵
45. Eugene Thacker, *In the Dust of This Planet: Horror of Philosophy, Vol. I* (Alresford, UK: Zero Books, 2011), 6.↵
46. Martin Heidegger, *Being and Time*, trans. Joan Stambaugh (Albany: SUNY Press, 2010).↵
47. Levi Bryant, Nick Srnicek and Graham Harman, eds. *The Speculative Turn: Continental Materialism and Realism* (Melbourne, Australia: re.press, 2011).↵
48. Abdou-Maliq Simone, *For the City Yet to Come: Changing African Life in Four Cities* (Durham, NC: Duke University Press, 2004).↵
49. See Swati Chattopadhyay, *Unlearning the City: Infrastructure in a New Optical Field* (Minneapolis: University of Minnesota Press, 2012). ↵
50. On the imagination as the terrain on which revolutionary insurrections are to be waged, see David Hugill and Elise Thorburn, "Reactivating the Social Body in Insurrectionary Times: A Dialogue with Franco 'Bifo' Berardi," *Berkeley Planning Journal* 25 (2012): 210–20.↵
51. Cerem Erdem, "RMB City: Spectatorship on the Boundaries of the Virtual and the Real,"*Interventions*, January 26, 2012, http://interventionsjournal.net/2012/01/26/rmb-city-spectatorship-on-the-boundaries-of-the-virtual-and-the-real.↵
52. Henri Bergson, *Creative Evolution*, 1907 (Westport, CT: Greenwood Press, 1975).↵
53. Marcos Novak, *Turbulent Topologies*, Media Arts and Technology Graduate Program, UC Santa Barbara (2008), http://www.mat.ucsb.edu/res_proj5.php↵

54. Koh Won-Seok, "Interview with Marcos Novak (Monthly SPACE, Art Talk)," (September 2009), http://curatorkoh.tistory.com/26.↵
55. The price tag depends on the company and its anticipated amenities; see Jesse McKinley, "Space Tourism Is Here! Wealthy Adventurers Wanted,"*New York Times*, September 7, 2012, http://www.nytimes.com/2012/09/09/travel/space-tourism-is-here-wealthy-adventurers-wanted.html.↵
56. Vandana Shiva and Jayanto Bandyopadhyay, *Chipko: India's Civilisational Response to the Forest Crisis* (New Delhi: Indian National Trust for Art and Cultural Heritage, 1986).↵
57. For visionary ecotopias, see Kim Stanley Robinson, ed., *Future Primitive: The New Ecotopias* (New York: Tor, 1994); Alex Steffen, ed. *Worldchanging: A User's Guide for the 21st Century* (New York: Abrams, 2011); Bruce Sterling, "The Manifesto of January 3, 2000," *Whole Earth* 97 (summer 1999): 4–9; Stewart Brand, *Whole Earth Discipline: An Ecopragmatist Manifesto* (New York: Viking, 2009); Terreform1 (http://www.terreform.org); Mitchell Joachim, "Envisioning Ecological Cities," in *Ecological Urbanism*, ed. Mohsen Mostafavi and Gareth Doherty (Baden, Germany: Lars Muller Publishers, 2010), 224–29; Ramachandra Guha, *The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya*, 2nd ed. (Berkeley: University of California Press, 2000); Nik Gaffney and Maja Kuzmanovic, "Luminous Green," in *Transdiscourse 1: Mediated Environments*, ed. Andrea Gleiniger, Angelika Hilbeck, and Jill Scott (New York: Springer Wien, 2011), 131–43.↵
58. Anna Lowenhaupt Tsing, *Friction: An Ethnography of Global Connection* (Princeton, NJ: Princeton University Press, 2005).↵
59. Jean-Luc Nancy, *The Creation of the World, or, Globalization* (Albany: SUNY Press, 2007).↵
60. Maurizio Lazzarato, "From Capital-Labour to Capital-Life," *ephmera* 4, no. 3 (2004): 187–208; and J. K. Gibson-Graham, "Diverse Economies: Performative Practices for 'Other Worlds,'" *Progress in Human Geography* 32, no. 5 (October 2008): 613–32. See also the Creating Worlds Project from the European Institute of Progressive Cultural Politics, which works toward the "political imagination and invention of new lines of flight, new struggles, new worlds" (European Institute of Progressive Cultural Politics, "Projects: Creating Worlds," http://eipcp.net/projects/creatingworlds/files/about).↵
61. Gilles Deleuze and Félix Guattari, *What Is Philosophy?*, trans. Hugh Tomlinson and Graham Burchell (New York: Columbia University Press, 1996).↵
62. Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (New Haven, CT: Yale University Press, 2006).↵

Epilogue: Venture

Predictions, premeditations, precautions, preparedness. These are all signposts of a speculative science slouching toward the future. But what does it mean to speculate *otherwise*?

We recall an old parable of two types of knowledge: a life-affirming "gay science" and the "dismal science" of scarcities. The first refers to the philosopher Friedrich Nietzsche's famous theories about life-enhancing knowledge, as opposed to knowledge wedded to the production of objective truth.[1] In the playfulness of artists (poets, songwriters), Nietzsche finds the kind of sensuous knowledge that is life affirming and that produces a profusion of effects. This is one way of thinking of an open-ended, creative, generative speculation that parleys in infinite possibilities. What it assumes is a human (and later, other organic and inorganic matter) bound by consciousness (the Cartesian subject) as well as sheer life potential in a world of abundance. When constrained or foreclosed, this abundance registers as scarcity: choices made about resource use (water, top soil, fossil fuels) lock societies into specific path dependencies, eliding options that were once available. The investment in these specific pathways not only depletes particular resources but also diminishes the political capacity to innovate more sustainable technologies and social practices (bright green, permaculture, frontier green innovation). As soon as capacity becomes the measure of potentiality, we have already harnessed vital, self-renewing forces; we hold them standing in reserve.

The gay science, a flirtation with life potentials, is necessary to counter the hegemony of the dismal science in defining controlled speculative activity. The latter is Thomas Carlyle's nickname for economics as he saw it in relation to Thomas Malthus's *Essay on the Principle of Population* (1798), with its grim predictions of food scarcity in the face of population growth. "Not a 'gay science,' I should say, like some we have heard of," notes Carlyle in a tract of 1849 that argued for the reintroduction of slavery in the West Indies, "no, a dreary, desolate and, indeed, quite abject and distressing one; what we might call, by way of eminence, the *dismal science*."[2] Here Carlyle mobilizes the language of infinite abundance—vital life forces harnessed as labor power under slavery—for the production of capital, a supposedly cynical instrumentalization of potentialities in order to refute the Malthusian "dismal theorem" that bemoaned a world of depleted resources. ("Supposedly," since *Occasional Discourse* is often considered a satiric tract written to mock the "pure" motives of the abolitionists, rather than a real call for the reintroduction of slavery.) A few decades after Carlyle's passing evocation of "a gay science," Friedrich Nietzsche would elaborate the idea in a very different direction. In *Die Fröhliche Wissenschaft* (1882), Nietzsche invokes "*gai saber*," a Provençal phrase referring to the poetic skills of thirteenth-century troubadours, in order to make his case for a type of knowledge that attends to physiological drives and expands on the profuse energies of human and nonhuman matter. The life-affirming force, Nietzsche's famous "will to power," is inherent to the dynamic biological organism that strives for self-regeneration (*Machtgelust*); it finds

expression not only in rational cognition that abstracts, reflects, and analyzes but also in the senses (pain and pleasure). Such invocations of sensuous knowledge take us back to Baruch Spinoza—who Nietzsche himself considered his "precusor" in many respects—and in particular to Spinoza's argument for *intuition* as a "third type of knowledge," in direct contravention of the Cartesian reflective subject. To this genealogy we might add Georges Bataille, who would elaborate the general economy of the universe, those great, unproductive expenditures of energy that are controlled and accumulated in a restricted economy. We would also add Jacques Derrida, who considered play as undoing those sciences that reduce or constrain. If we follow this line of thought, we can begin to track an intellectual history of affirmative speculation. Ours is not a genealogical project but rather an effort to bring heterogeneous thinkers conventionally *not* considered together into the same conversation: for instance, one hardly thinks of Frank Knight, the darling of the Chicago School, who held on to the concept of radical uncertainty, in the same breath as Nietzsche, philosophical swashbuckler, who insisted on irreducible potentialities. But both thinkers, we propose, push us toward elaborating an affirmative speculation.

The uncertain commons practices the gay science of affirmative speculation: we think and act in the vicinity of something that is not actually there and yet is always latent and incorporated in real bodies and real situations. This means we periodically and insistently touch radical uncertainty, a vertigo-inducing abyss. To think and act in the vicinity of such an abyss means to be open to it, that is, to let oneself be troubled and undone by it. To affirm potentiality is to take real risks, namely, to experiment. This manifesto, this writing in common, has itself been an experiment—an exercise in mutuality. Yet the conditions of writing in common are not easily won. There were some invaluable opportunities, institutional support, and public spaces available to us to work in research clusters. That was how it all started, the assembling to explore the possibilities of common thought. Obviously we had strong advocates: some patiently funded all the meetings necessary for writing in common; others joined us in conversation; still others steered us toward actualization in the manifesto form. We cannot name them, but they know who they are. We thank them all; they have gambled and speculated with us.

Our uncertain commons emerged through the giving of time, labor, even love, over many lively if exhausting sessions of reading, arguing, and writing, as well as many evenings of repose, hanging out. We disagreed, often vociferously. You will find those traces all over the manifesto. We struggled with interdisciplinary thinking, the movement across scales and domains of existing knowledge. An intense living in common, with friends and lovers, transpired in those initial memorable weeks. Now our collective thinking has spread to other projects, other collaborators—students, colleagues, coconspirators. They too cannot be named, but we thank them for their engagements, their rigor, their creativity, their enthusiasm for the venture.

We invite you to join these speculations. All of you can take these thoughts, if you so desire, for your own purposes. This book is open source. We will not blink if you claim it as your own. If you tweak, revise, extend, regurgitate, plagiarize the writing, we would be delighted. If you are the uncertain commons, who is to say you are not?

1. Friedrich Nietzsche, *The Gay Science: With a Prelude in German Rhymes and an Appendix of Songs*, ed. Bernard Williams, trans. Josefine Nauckhoff, poems trans. Adrian Del Caro (New York: Cambridge University Press, 2001).↵
2. Thomas Carlyle, *Occasional Discourse on the Negro Question*, first published in *Fraser's Magazine for Town and Country* Vol. XL (December 1849): 670–79.↵

Acknowledgments

We would like to reiterate that an "uncertain commons" is not a collective but a differentiated common: it does not agree on all issues and can in practice be extended. It started in 2009 with a core group, but in the three years that followed, a whole host of coconspirators and a range of venues helped shape the manuscript. We cannot hope to be comprehensive, but we do wish to express our heartfelt appreciation for those who have both knowingly and unknowingly helped us with our work and play.

Thanks to Susan Albury, Ben Anderson, Claudia Aradau, Willa Armstrong, Paulina Aroch-Fugellie, Anjali Arondekar, Tom Augst, Aimee Bahng, Allison Belan, Bill Bahng Boyer, Karen Beckman, Courtney Berger, Mario Biagioli, Zach Blas, Amy Ruth Buchanan, Lucy Burns, Julie Carlson, Amy Sara Carroll, Cesare Casarino, Seeta Chaganti, Christine Choi, Rey Chow, Jason Christenson, Anne Cong-Huyen, Melinda Cooper, Katie Courtland, Jordan Crandall, Mark Z. Danielewski, Ingrid Diran, Ricardo Dominguez, Brian Donnelly, Joe Dumit, Lorenzo Fabbri, Lisa Gitelman, Marieke de Goede, Bishnupriya Ghosh, Joyce Goggin, David Theo Goldberg, Richard Grusin, Deborah Guterman, Barbara Herr Harthorn, Vinzenz Hediger, Lucas Hilderbrand, Peter Holman, Stefka Hristova, Adrienne Jenik, Mark Jerng, Deborah Johnson, Alex Juhasz, Mili Kalia, Eleanor Kaufmann, Kelly Kawar, James Kearney, Kevin Kearney, Katie Kelp-Stebbins, Wolf Kittler, Steven Kossak, Andrew Lakoff, Nima Lamu, Stephanie Lemenager, Regina Longo, Michael Madsen, Randy Martin, Bill Maurer, Anne McClanahan, Anil Menon, Colin Milburn, Robert Mitchell, Rahul Mukherjee, Tim Murray, Joshua Neves, Helen Nissenbaum, Rob Nixon, Geeta Patel, Cindy Patton, Constance Penley, Kavita Philip, Mark Poster, Kaushik Sunder Rajan, Rita Raley, Pooja Rangan, Kriss Ravetto, Arielle Read, Annelise Riles, Anindyo Roy, Russell Samolsky, Bhaskar Sarkar, Laura Sell, Sudipta Sen, Greg Siegel, Marc Siegel, Dana Solomon, Thomas Streeter, Lindsay Thomas, James Tobias, Rens van Munster, Peter van Wyck, Cristina Venegas, Giovanni Vigna, Amy Villarejo, Priscilla Wald, Janet Walker, Michael Warner, Marina Welker, Kath Weston, Ken Wissoker, Charles Wolfe, Kathleen Woodward, and others still unnamed.

About the Author

The uncertain commons is a group of scholars, mediaphiles, and activists who explore the possibilities of collaborative intellectual labor. They remain anonymous as a challenge to the current norms of evaluating, commodifying, and institutionalizing intellectual labor. Members of the group represent a diverse set of nationalities, backgrounds, and institutional affiliations, and they participate in a range of disciplines, including cultural studies, English, media studies, philosophy, Middle Eastern studies, and South Asian studies.

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