



COLLOQUIUM

## From Latour to late industrialism

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I situate Latour's latest project—An Inquiry into Modes of Existence (AIME)—in the context of late industrialism and query both its conceptual underpinnings and the design of its digital platform. I argue that Latour's semiotics (and associated conceptions of both networks and ontologies) are functionalist in a way that mimics industrial logic, discounting both the production of hierarchical differentiation within a given system, and the system's externalizations. The approach thus underestimates the toxicity of its vitalism.

Keywords: disaster, environment, feminist theory, postcolonial theory, science, semiotics

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### Soiled grounds

I've titled my remarks "From Latour to late industrialism," to put Latour in history, and raise questions about the promise of his approach in a world still gripped by industrial order yet also beyond it, technically, ecologically, conceptually.<sup>1</sup>

In Latour's terms, industrial order has been fueled by a Modern ontology that splits Nature from Culture, Object from Subject, and Knowledge from Value, mobilizing an intensive interagentivity that has produced industrial society. Modern ontology (conceived in this way) works by maintaining binaries and boundaries: humans and nature are conceived as distinct, the sludge is supposed to stay in the sludge pond, out of the rivers, air, and human bodies.

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1. Many thanks to a number of readers who helped me pull these remarks together. Both reviewers for *HAU* were very helpful, coming from very different angles. Pedro de la Torre, Aalok Khandekar, and Luis Felipe Murillo all provided important feedback. Mike Fortun helped me with the analysis, the writing, and the "mode of existence" needed to see it through.



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In what I call late industrialism, the levee has broken, retention walls have failed. The sludge runs over homes and lives, eventually hardening into a gray matter that will be “remediated” by moving it to another, more marginal place, out of sight and mind—such as a town called Perry, Alabama, where the population is 90 percent African-American, and over a third are below the poverty line. There, the sludge hardens, breaks up, and becomes a dust that coats the town, homes, lungs. I speak specifically here, of the coal sludge pond disaster in Kingston, Tennessee, in 2008, during which a billion gallons of toxic sludge moved off the site of a coal plant, over a town, and into the river as giant ashbergs (Walker 2013).<sup>2</sup> Coal ash is stored at over a thousand sites across the United States (Figure 1); over half lack liners to limit migration into drinking-water supplies. Coal ash water is not covered by US federal legislation.<sup>3</sup>

In late industrialism, as I’ve conceptualized it, disasters like the Kingston disaster are everywhere, eminent and normal—and normal not only in Charles Perrow’s sense, emergent from tightly coupled industrial systems like nuclear power plants (Perrow 1984), but emergent from tight coupling between natural, technical, political-economic, social, and discursive systems, all of which are aging, often overwrought, ossified, and politicized. Deteriorating industrial infrastructure, landscapes dotted with toxic waste ponds, climate instability, incredible imbrication of commercial interest in knowledge production, in legal decisions, in governance at all scales—this is late industrialism. The threat of terrorism legitimates suspensions of law, and pervasive surveillance. But not everything is on the radar. Industrial operations, water quality, toxic chemicals—surveillance of these is minimal at best; they are almost completely undisciplined, often under the cover of law.<sup>4</sup> Industrial order, then, in some of its dimensions, has indeed never been modern, mastered, subjected to law. Yet it is also modern with a concreteness that has had devastating environmental effects. It is these discontinuities that we must attend to.

2. Anthropologist Alison Kenner first introduced me to this case, and led me on a tour of the area. I’ve also learned from Susie Hatmaker’s dissertation research on the Kingston disaster at the University of Minnesota.
3. For details on the coal ash problem in the United States, see <http://earthjustice.org/features/the-coal-ash-problem>. Accessed June 1, 2014.
4. The way law can exempt particular people, organizations, and practices is overtly illustrated in the way the US Energy Policy Act of 2005 (often referred to as “Cheney’s Law”) exempted activities associated with the shale gas boom (including but not limited to hydraulic fracturing) from the the Safe Drinking Water Act, the Clean Water Act, and other federal regulations. For a sobering review, see Brady (n.d.). For a glimpse at the language games in play, see <http://energy.nationaljournal.com/2010/09/natural-gas-a-fracking-mess.php>. Accessed March 30, 2014.

The 1976 US Toxic Substances Control Act (TSCA) provides another, older example. TSCA is structured such that assessment of toxicity does not have to occur unless there is reason to believe that toxicity is a problem. So there is a funny looping. One does not have to inquire about problems unless one already knows there are problems. In the worst cases, often corporate, there can be an egregious will *not* to know, an imperative not to ask questions. Since TSCA was enacted over thirty years ago, only a handful of substances have been banned under its authority (Schierow 2007; US Environmental Protection Agency 2007), and there continues to be a remarkable lack of data and research on chemical toxicity, human exposure, and health outcomes.



Figure 1: Sierra Club map of coal ash ponds. Copyright 2014 Sierra Club. All rights reserved. Used with permission.

I began to think in terms of late industrialism in recognition of the limits of available critical constructs for explaining issues of particular concern within environmental politics: the complexity and current state of ecological systems; the complex relationship between ecosystem and human health, and between the health of humans, rats, mice, and other sentinel species; the *longue durée* in which environmental problems become manifest, and consequent governance challenges; the largely unregulated, much less maintained, aging of our industrial infrastructure; the emergence of new modes of high-risk industrial activity (deep-water drilling for oil, shale gas extraction through hydrofracking); the continuing productivity of industrial culture and desire, with high throughput of consumers who love and depend on toxic products; increasingly intricate interlacing of commercial interests in what counts as scientific knowledge; the sobering and funny role of language and language ideology in the making of the world.

I mark the beginning of late industrialism symbolically, in 1984, the year of the Bhopal disaster, with thousands killed by toxic gas used in the making of a pesticide produced to extend crop yields, but in a facility underdesigned for safety and, in 1984 year, already set for decommissioning. The market was saturated. Over half a million people were exposed; death figures remain contested, ranging from five thousand to more than twenty thousand. And the exposure continues. The Union Carbide factory in Bhopal hasn't operated since 1984, but the waste produced by it remains on site, underground, and in open ponds. Nearby water wells, still used by local communities, have high chemical as well as bacterial contamination.

The same year, 1984, also saw the San Juanico disaster just outside Mexico City, caused by a massive series of explosions at a liquid petroleum gas (LPG) tank farm. The explosions consumed 11,000 cubic meters of gas—one third of Mexico City's entire LPG supply. The explosions destroyed the facility and town, killing between five hundred and six hundred people, severely burning five thousand to seven thousand others (Arthurson 1987; Harris 2014). In 1984, industrial order seemed to be imploding.

But Ronald Reagan was reelected President of the United States in a landslide victory, winning forty-nine of fifty states, proclaiming it “morning again in America” (Samuels 2014). Meanwhile, debt crisis wrecked and rippled across developing worlds. Structural adjustment and trade harmonization were seen as solutions. Glasnost was emerging, contested, and repressed. The environmental disaster of the Soviet bloc became increasingly visible. It was a time of containment, and of structural failure.

Latour published steadily in this period. His writings circulated widely, with definitive impact: *Laboratory life* was published in English in 1979 (Latour with Woolgar 1979), then republished in 1986; *Science in action* in 1987; *The pasteurization of France* in 1988; *We have never been modern* in 1993. The time is late industrial. Latour's early work seems remarkably unscathed by this.

Since the mid-2000s, however, Latour has taken a noteworthy environmental turn (Latour 2004, 2010, 2011a, 2011b, 2011c, 2011d). He is clear that the Anthropocene is his context. Gaia is a constant (ideal) referent and horizon. Science, as an institution, he insists, must be upheld. I completely agree.

From one angle, then, it looks as though Latour, of late, may be on to late industrialism. But I have questions about his approach, concern that he will—concretely and theoretically—miss the forest for the trees.<sup>5</sup> I'll try here to lay out why.

Foundational for me—the soiled grounds—is the complicated fact that even if we have never really been modern, we still have a modernist mess on our hands, a concrete mess, produced (in part) by what could be called a industrial theory of meaning and value, an industrial language ideology.

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5. Inspired by Eduardo Kohn's description (2013) of “how forests think,” Latour points out that “forest scientists do not treat their ‘subject matter’ in the idealized way of ‘Westernized science’”—illustrating how Moderns are differentiated within. Latour (2013) says that understanding “how forests think” will be crucial to forest management in the future. I fully agree. Latour doesn't, however, attend to the limited authority of forest scientists in policy arenas (usually crosscut with commercial interests), or to the cultural hierarchies within the sciences that shape what research is funded, done, and circulated. Latour privileges practice, at times obscuring structure.



I think in terms of language ideology to account for habits of mind, language, building, and regulation in industrial order that privilege production, products, property, and boundaries—in a way that systematically discounts transboundary migration (of toxic chemicals across the fencelines of factories or out of products like carpets, plastic bottles, or electronics) and trespass (into human and other bodies, usually—in biomedicine, for example—also considered bounded and quite immune to environmental insult). It is an essentialist, functionalist logic that privileges what goes on inside bodies, products, and fencelines, orienting research, business, and law. It assumes that things are what they are intended to be—that they are their essence—and nothing more: Chemical plants produce chemical products for use (and sale), without polluting emissions. Pesticides kill insects, but pose no harm to other bodies and ecologies. Production is protected; pollution is externalized. The perspective is overwhelmingly positive. The focus is on what works.

Unproductive sites—waste ponds, industrial facilities shut down for maintenance or decommissioning—aren't considered meaningful. Things are considered in themselves rather than connected and enmeshed; direct, linear connection between separate things—the bullet as the source and cause of violent injury; germs as the source and cause of disease—can be recognized; distributed causality cannot. It is a capital-intensive logic, laced with commercial interests, with enduring material effects. Yet these effects don't register. Industrial logic can't make environmental sense. But it leaves a mess.

Latour is, of course, renowned for his critique of modernist logic, arguing, “we have never [really] been modern.” His latest turn, to the Anthropocene, through ontology, aspires to extend the work, providing a positive alternative, providing a middle ground for building a world. Otherwise, without the (scientific) Modern operating as a constant referent and gold standard. He is working out an “ethnography of the Moderns,” this time mapping different figurations of “the Modern” as instantiated not only in science, but also in law, politics, religion, and other “modes of existence.” The founding premise is that differentiating “the Modern”—drawing out different truth conditions in each of these modes of existence—will enable better coordination with still other modes of existence, enabling us to “compose a common world.”

Both Latour's book (2011d) and the supporting digital platform are titled “An Inquiry into Modes of Existence (AIME).” Can his approach, and the structure he is building for the digital platform, help us grapple with the mess? Where is Latour in late industrialism?

## The Latour effect

Before going there, however, I do want to acknowledge the extraordinary influence Latour has had in American anthropology and Science and Technology Studies,<sup>6</sup> but also to acknowledge that I personally came to STS through a different route,

6. See this excellent Latour bibliography put out by the Critical Theory Institute at the University of California Irvine: <http://www.lib.uci.edu/about/publications/wellek/docs/Wellek2012Latour.pdf>. Accessed May 1, 2014.



starting in postcolonial and feminist theory and their critiques of the Enlightenment project (de Lauretis 1987; Spivak 1987, 1993, 1999; Chatterjee 1993; Bhabha 1994, etc.), routed through industrial disaster in India, produced in the United States (Fortun 2001). So, the world has seemed pretty modern to me, even if disastrously so. I point to my own positioning as a way to acknowledge that my reading of Latour comes from a particular tradition of reading that comes at the world from a slightly different angle, from another twist in the kaleidoscope.

One advantage of this is that I've been able to observe what I think of as the Latour effect in American anthropology somewhat from a distance, ethnographically. And it has been remarkable. As an anthropology journal editor, for example, I observed the incredible work Latour was doing for authors, often standing in for all of STS.<sup>7</sup>

Science, through Latour, was made vernacular and thus accessible to ethnographic study. *Science in action* was indeed animating, and can still guide our work. And there is much work to be done. Too often, science in anthropological accounts remains monolithic. Reference to science often remains overdetermined, assuming that science and scientists are reductive and naïve about truth. Critical differences between and within the sciences are left unexplicated.

Nature, through Latour, was made cultural and agentive, and thus an ethnographic actor. Here, too, however, critical differences are still glossed. Love your entanglements, Latour seems to say to many, whether with other species or with toxics. I expect Latour himself would not approve of some of this.

Even more basic was Latour's insistence on "reassembling the social," letting things emerge as things relationally, granting both humans and nonhumans status as actants, focusing attention on always emergent and shifting networks. Many anthropologists have been able to run with this.

Most fun is the array of stories I've collected over the years about how people first read Latour, and what it meant to them. Many report that it "hit them over the head," in the best of ways. My favorite report, from a notably sharp and critical artist, is that Latour—and particularly *We have never been modern*—was one of three main influences on her work, alongside Adobe Flash and Buddhism.

Elaboration on these observations could be an essay in itself. I'll turn, instead, to a reading of Latour that takes us through his current project on "modes of existence," asking how it addresses late industrialism.

## Inquiries into Modes of Existence

In my reading, Latour offers us a semiotic theory not only of meaning, but of the world, which allows us to move, rather seamlessly, from facts and vaccines to the Anthropocene. And it is a powerful idea: the world—materiality—is not merely apprehended by cultural actors, it is also *made* by them, through material networks of

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7. I was coeditor of *Cultural Anthropology* from 2006 to 2010. See the journal's diverse set of short papers on "the politics of ontology" (edited by Morten Axel Pedersen and Martin Holbraad) here: <http://culanth.org/fieldsights/461-the-politics-of-ontology>. Accessed June 1, 2014.

mediators and habits. The world is not merely rendered meaningful, after the fact, it is produced as real *through* meaning. The notion of the Anthropocene draws this out with great force.<sup>8</sup>

But it is a functionalist semiotics, with little history, paradox, harsh conflicts of interest or possibilities for play. It brings particular chains of connection into visibility, but other kinds of connection—and disconnection—remain off screen, unaddressed. What can't be articulated isn't flagged. In the insistence on the meso—a sociology of association—cross-scale interactions and structural conditions seem to be written off. And there seems to be a presumption of adequacy—a presumption that the habits of mind, language, and politics present to us today can themselves produce a different future. So there continues to be confidence in what I must call gentlemen's engagement, coming together around controlled vocabulary meant to cut across difference. Communicative dissonance is managed rather than leveraged—with a remarkable degree of abstraction. Despite gesturing toward something other than Modern, there is little room for thinking through the concrete, for what often resists and disturbs abstraction. The latter is key in the kind of postcolonial analysis that I have learned to work with.

A quite basic problem is the minimalist (and always abstract) way of acknowledging that some connections, some interagentivity, has injurious effects—that vitalism can be toxic and disastrous. This minimalism is in part because of, and in turn produces, scales, systems, and legacies that are analytically ignored. The political-economic is largely absent, as is the discursive, for example. The way history weights the present and future, at all scales and in all systems, is discounted. All attention is on what can be composed anew.

A political-economic level of analysis points to the notable productivity—social and material—of dynamics like capitalism, which work by producing both difference within (proletarianization, hierarchies of wealth and authority) and *externalization* (both human and environmental). This is not (only or necessarily) Capitalism as an abstraction; it is capitalism in practice, producing social inequality, overconsumption, and illegible subalterns through daily practices and relations between human and nonhuman actants. Subalterns, as theorized by Gramsci and later by Spivak, Bhabha, and other postcolonial theorists, are people in structural positions produced by dominant systems, yet unacknowledged, even disavowed, by those systems. They are rendered inarticulate; they don't make sense within the system; they are ignored, while exploited. In late industrialism, subalterns are both human and nonhuman, found in the labor of informal economies, in genderings that still can't be recognized, in toxic chemicals—many of which are officially registered for use, but with insufficient data to make sense of their hazards. These externalities can't be acknowledged when there is methodological insistence that “everything is inside” the network (Latour 2005).

Thus, when Latour reaches for “our common world,” there is something missing. His approach to “an ethnography of Moderns” aspires to acknowledge difference, yet configures difference in way that underestimates the production of difference both

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8. Latour has provoked an impressive stream of critical commentary, which also points to his significance in cultural anthropology, STS, and beyond. I recognize that my comments here can't do full justice to the debates.

within and on the margins of different “modes of existence.” Externalities remain invisible, rather than considered a type of relation that needs to be accounted for.

Let’s look at how this works in the AIME project (<http://www.modesofexistence.org/>). The project aspires to provide a systematic way of accounting for various ontological templates used by those who have never been modern, opening up a middle ground for diplomatic negotiations that aren’t undermined in advance by the two hypotheses of universality and multiplicity. The hope is to “draw lines of agreement that are totally different than those predicated on a Nature–Culture frame,” working toward a genuine cosmopolitics (Latour 2013). This is ambitious and admirable. But I see few links to late industrialism. The problem is both conceptual and a matter of digital design.

AIME’s digital interface presents the user with four columns: column 1 on the left is T, Latour’s text; column 2 is V, Latour’s vocabulary; Column 3 is D, the documents undergirding the text; column 4 on the far right is C, where users can add their own comments and supporting documents.

The vocabulary that orders the AIME platform is rich and productive. A search for “ontology,” for example, returns many entries in Latour’s text, and in the vocabulary and documents. “Ontology” also invites many comments. But, like any controlled vocabulary, it is limiting.<sup>9</sup> That’s how controlled vocabularies work—very productively, but with externalities.<sup>10</sup>

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9. Latour’s project seems in step with the way information scientists have conceptualized controlled vocabularies (and ontology):

A **controlled vocabulary** is a list of terms that have been enumerated explicitly. This list is controlled by and is available from a controlled vocabulary registration authority. All terms in a controlled vocabulary should have an unambiguous, non-redundant definition. . . . This is a design goal that may not be true in practice. It depends on how strict the controlled vocabulary registration authority is regarding registration of terms into a controlled vocabulary. (<http://infogrid.org/trac/wiki/Reference/PidcockArticle>)

Contrast this conception of how vocabulary works with one articulated in an opening passage of Partha Chatterjee’s *Nationalist thought and the colonial world*:

[I]n an ideological world . . . words rarely have unambiguous meanings, where notions are inexact, and have political value precisely because they are inexact and hence capable of suggesting a range of possible interpretations. . . . [In this] inexact world . . . of dreams and illusions . . . , objectives are realized, rules established values asserted, revolutions accomplished and states founded. . . . The critical viewpoint reveals that [a political revolution] . . . at the same time, and in fundamental ways, is not a revolution. (Chatterjee 1993: vii)

10. Latour’s project seems to me a “centered structure,” of the sort Derrida explicated in “Structure, sign and play”:

The concept of centered structure is in fact the concept of a play based on a fundamental ground, a play constituted on the basis of a fundamental immobility and a reassuring certitude, which itself is beyond the reach



Given the prominent role accorded to vocabulary in the AIME platform, I searched for a number of terms to get a sense of the discursive field enabled by it. Little came up on phenomena at the center of my concern. Petrochemicals, for example, were present only as they offer a Modern contrast to the traditional. On one page, the camel is figure, a petrochemical factory ground, with a wry commentary on the clichéd contrast. Petrochemicals were not otherwise part of the vocabulary, documentation, or commentary.<sup>11</sup>

A search for something behind—and clearly connected to—petrochemicals, namely commercial corporations like “Schlumberger,” returns a bit more, but limited to a grainy photograph of two men consulting a scientific instrument, with an oil rig relegated to the background. There was no linkage to Schlumberger’s role in climate change, much less the global shale gas boom. The “toxics” that have proliferated within modernity appeared only as a way to characterize knowledge, figured in the text as a “composite and toxic product.” Actual toxics—toxics with material force—were an externality: produced by the system but not accounted for in its self-representation. And a search on “disaster,” a product of the Moderns that has continually demanded my attention, appeared only once in the documents, where the referent is not to the all too many industrial disasters that haunt me, but to a Tintin comic strip of a “military disaster.” “Pesticides,” the production of which was so deadly at the manufacturing plant in Bhopal, and which continue to saturate the soils and organisms of late industrialism, drew a blank.

“Asbestos” turned up at least one hit, but it was strangely inwardly focused, likening Baby Boomer critics of institutions (like science) to the manufacturers of asbestos, each supposedly unaware of how their “good” products would have disastrous long-term effects. This relies on what could be called an overly diplomatic reading of history, in which corporations like Johns Manville and W. R. Grace supposedly thought asbestos an unalloyed good, only to be surprised by suffering and deaths decades later. The harsh truth is that these companies were long aware of asbestos’s deadly potential, and simply covered it up or lied about it.<sup>12</sup>

No project can do everything, no lens can capture all. My point here is not that there is a failure of comprehensiveness. These elisions seem to me constitutional, a product of how Latour’s system works.<sup>13</sup> Conceptually and by digital design, the

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of play. And on the basis of this certitude anxiety can be mastered, for anxiety is invariably the result of a certain mode of being implicated in the game, of being caught by the game, of being as it were at stake in the game from the outset. (Derrida 1978: 352)

11. These searches were done in fall 2013. The content and design of the AIME platform has continued to evolve since then. In rendering this critique, I want to emphasize that I recognize the enormous challenge—and importance—of building digital infrastructure for scholarly work, particularly in the humanities. I thus greatly appreciate the AIME group’s effort.
12. See <http://asbestoslitigation.uslegal.com/asbestos-litigation-history/>. Accessed June 12, 2014.
13. Like many feminist and postcolonial analysts, Teresa de Lauretis emphasizes the need to understand both what systems say, and what they do not and cannot say.

project short-circuits attention to both its own externalities and those of the global system it seeks to mend. This, in turn, enables the project's investment in building something new, without a need to attend to what I have called soiled grounds. The project also undercuts its promise of the new through its own embedded language ideology. Controlled vocabularies support ontologies that have been mapped in advance. The promise of a future beyond what we can now imagine requires something different.

Despite the project being a critique of Moderns, the disavowals of Moderns aren't actively addressed. It doesn't taken on the problem—and possibility—of what Homi Bhabha called “Articulating the archaic,” of activating what is culturally unassimilable (to Moderns), what can't be translated, permitting what Bhabha called an “enunciative disturbance that throws the process of interpretation and identification into flux” (1994: 128).

The website, by design, controls for this, and doesn't leverage what I see as a critical paradox of digital, experimental ethnography—the paradox of hosting and hospitality. Derrida points to the aporia and paradox in how hospitality requires one to be the master of the house or nation, a controlling agent who sets the table and stage for encounters with foreigners and foreignness. To be hospitable, one has to have the power to host; one has to exercise control over the space. One must also, however, give up mastery, ownership, one's possessions, if the foreigner is really to come in, if hospitality is to be realized (Derrida 2000).

Latour's “Inquiry” project doesn't seem to me to allow for this. The foreigner—the commenter, in the web design—is confined to the fourth column, linked to but outside the main text, unable to change it or even modify or add to its vocabulary in column 2. A density of nodes and interconnections, the site is nonetheless as perfectly ordered as any Modern system. It operates more as a testing device than as an experimental system.<sup>14</sup>

## Toxic vitalism

Why does it matter? What are the conditions of late industrialism, and what do they ask of us?

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Understanding the gender effects of a social system, de Lauretis argues, demands “a movement back and forth between the representation of gender (in its male-centered frame of reference) and what that representation leaves out or, more pointedly, makes unrepresentable” (1987: 25). The analyst must find or invent a way to move “between the (represented) discursive space of the positions made available by hegemonic discourses and the space-off, the elsewhere, of those discourses: those other spaces both discursive and social that exist, since feminist practices have (re-)constructed them, in the margins (or ‘between the lines,’ or ‘against the grain’) of hegemonic discourses and the interstices of institutions, in counterpractices, and in new forms of community” (25).

14. I refer here to the difference between testing devices, which confirm what is already known, and experimental systems that produce unexpected results and questions, as described by historian of biology Hans-Jörg Rheinberger (1998).

Consider, for example, the monster that is the American Chemistry Council (ACC), a trade association for the chemical manufacturing sector, formally named the Chemical Manufacturers Association. The “American Chemistry Council” has a better ring, helping cement a sense that there continues to be, in late industrialism, “better living through chemistry.”<sup>15</sup> The ACC’s latest advertising campaign foregrounds the slogan “from chemistry to energy,” promising a strong, secure, and sustainable future with shale gas. The hazards and negative side-effects of the shale gas boom aren’t mentioned. Like the ACC’s previous advertising campaign—essential<sub>2</sub> life—the new campaign is offensive—dense with detail on chemistry’s contributions to jobs, safety, efficiency—with no mention of hazards or externalities.<sup>16</sup> All movement is forward, positive. But there are switchbacks. It is an era of covert combat.<sup>17</sup>

Evidence of harm to humans, ecosystems, and atmospheric systems caused by industrial chemicals has grown and solidified in recent decades. This can’t be denied, so it just isn’t addressed. The strategy is one of disavowal.

Disavowal (*Verleugnung*), as we have learned to think about it through Freud ([1927] 1961), involves rejecting the reality of a perception because of its potentially traumatic associations. It is not that the reality in question is not known or is erased; it is denied. Judgment is emphatically if not aggressively suspended. Things in reality connected are kept separate. Disavowal operates through disjunction, and refusal to connect—and is a key factor in psychosis and perversion. It is an essential part of the ACC’s public relations strategy—a key corporate tactic in late industrialism.<sup>18</sup>

The ACC also has other tactics. In the early 2000s, it increased funding for research on the toxic effects of industrial chemicals, aiming to address particular chemicals, but also the very means by which chemical toxicity would be

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15. “Better Living Through Chemistry” originated in a Dupont ad campaign from the 1930s, but then became widely associated with the chemical industry overall. Dupont’s heritage website described the evolution of Dupont’s public relations strategy: “In 1935 DuPont hired Batten, Barton, Durstine & Osborn (BBD&O) to change DuPont’s image from ‘the powder people’ to ‘peace time manufacturer.’ A corporate advertising campaign was launched promoting DuPont’s role in improving daily life with the slogan ‘Better things for better living . . . through chemistry.’ The tagline ‘through chemistry’ was removed from advertising in the 1980s. The slogan was replaced in 1999 with ‘the miracles of science,’ capitalizing on DuPont’s heritage and strength as a science company” ([http://heritage.dupont.com/touchpoints/tp\\_1939/overview.shtml](http://heritage.dupont.com/touchpoints/tp_1939/overview.shtml)). Accessed October 2008.
  16. See <http://www.americanchemistry.com/>. The essential<sub>2</sub>life advertising campaign was launched in the mid-2000s. I analyzed the essential<sub>2</sub>life campaign in 2008 (Fortun 2010), accessing the website in October 2008. Current web content accessed October 2013.
  17. The Center for Public Integrity reports that in late 2013, the ACC shifted focus from Washington DC to US state governments “as part of a vigorous campaign to smother toxics reform bills.” See “In new battleground over toxic reform, American Chemistry Council targets the states,” <http://www.publicintegrity.org/2013/09/09/13323/new-battleground-over-toxic-reform-american-chemistry-council-targets-states>. Accessed November 20, 2013.
  18. This turn in the analysis draws from the essay on the essential<sub>2</sub>life campaign I published in 2010, in a special issue of *Dialectical Anthropology* edited by Stuart Kirsch and Peter Benson.

evaluated. The ultimate goal is to establish the “science of interpretation” for chemical assessment,<sup>19</sup> and to move this into governing domains, including our schools.

Consider, for example, Baytown, Texas, home of one of the world’s largest oil refineries, on the Gulf of Mexico near Houston—where my father grew up and I spent childhood Sundays and summers. Without a hint of irony, Baytown promotes itself as the town “where oil and water really do mix.” In Baytown, Bayer Corporation proudly provides science curricula to public schools—striving to cement the science of interpretation of chemical toxicity at all levels. Social theory and our anthropological projects need to engage with this.<sup>20</sup>

Can AIME work in these conditions? Can diplomacy work out the differences and interests in play? I fear not.

To some extent, Latour and the AIME project replay the resolute positivity of the ACC, disavowing bad actors, conflicts of interest, and an array of externalities produced by the ontologies they work to characterize. The antagonism of the agora is discounted, as are its covert action and backroom deals. Much work to create and defend particular truths (about toxics, for example) is carried out not in the open assemblies Latour counts on, but in corporate labs and strategy rooms, which link all too easily to regulatory science panels, which end up licensing hazards.

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19. See the article in the *Journal of Exposure Science and Environmental Epidemiology* with authors from the American Chemistry Council, the European Chemical Council, ExxonMobil, Dow, and Bayer (Phillips et al. 2009).

20. See <http://www.baytown.org/>. reports that its Making Science Make Sense (MSMS) program is over forty years old, has won numerous awards, and is the basis of partnerships between the company and the US Department of Education, National Science Foundation, National Science Teachers Association, American Association for the Advancement of Science, and National Science Resources Center—“to change the way science is taught and learned in the classroom.” MSMS is one of one of three hundred corporate social responsibility programs Bayer supports globally, evidence of how, “[f] or more than a century, Bayer has been acting in the public interest, demonstrating a distinct kind of corporate citizenship that benefits humankind and society at large.” [http://www.bayerus.com/msms/msms\\_about/about.aspx](http://www.bayerus.com/msms/msms_about/about.aspx). Accessed June 28, 2014. CorpWatch complicates the story, drawing out how Bayer, an offshoot of I-G Farbin, dominates global herbicide and pesticide markets while claiming to support sustainable farming and farm worker health, using corporate social responsibility initiatives—and a partnership with the United Nations—to deflect attention from pesticide poisonings, antibiotic resistance, and other product liabilities. See “Bayer and the UN global compact: How and why a major pharmaceutical and chemical company ‘bluewashes’ its image” (2001), <http://www.corpwatch.org/article.php?id=3129>. Accessed November 20, 2013. For more recent reports, see the website maintained by the Coalition Against Bayer Dangers, <http://www.cbgnetwork.org/4.html>. Accessed November 20, 2013. My point here is not to simply side with and advocate alongside CorpWatch, but to highlight the kinds of connections and conflicts of interest that permeate the world in which anthropology operates, and needs to attend to. In April 2014, Bayer announced a new initiative in the Baytown area, which will provide all 116 sixth- through twelfth-grade science and math teachers “with high quality content-based training that strengthens their instruction.” <http://www.bayerus.com/News/NewsDetail.aspx?ID=3F601D1D-DD8E-E724-0ACA380A38B7AFC9>. Accessed June 15, 2014.



There's also another kind of elision. Latour repeatedly points out that actual practice can't be corralled into simple subject–object distinctions (despite rigorous attempts in the philosophy of science to make these distinctions hold). Modern, scientific selfdescriptions are cast as errors. But these selfdescriptions have been extraordinarily productive nonetheless. Latour has recognized the positive dimension of this—the way Modern ontological distinctions have produced “formidable discoveries” and material wealth. But the negative effects and externalities enabled by Modern binaries aren't addressed. Discursive (as well as political) risks are discounted.

The AIME project aspires to provide a “middle ground” for working through and with different ontologies, in the building of a common world. But the structure it has built for this rules out so many kinds of engagements that links to late industrialism are minimal at best. In part, this is because of a language ideology built into the project that mimics the language ideology that has sustained industrial order—working so well by not dealing with many things. AIME is a vital(ist) project, but cumulative effects and toxicity are underestimated.<sup>21</sup>

### New media, new pathways

But there are still another switchbacks, this time filled with promise. Enabled by informatics, for example, environmental health researchers and activists are inventing new ways of making toxics legible and meaningful.

One of my favorite examples is a US Environmental Protection initiative project (Figure 2) to advance chemical assessment through a project called ToxPi that graphically combines many different kinds of data—some of it noisy—to be able to weight the likely toxicity of chemicals, and prioritize responses. In the figure you see chemicals ordered for their endocrine-disrupting potential. This is a very different way of making claims than the one-chemical-at-a-time rat studies that have been at the center of US toxics assessment for years. It will require still more work to move this kind of science into regulatory arenas.

As scholars, we need to be part of this effort; we must, as Latour says, affirm the institution of science. More than translations will be required, however. There will be corporate pushback, as well as other difficulties. ToxPi and many other contemporary projects in the environmental sciences are queer, reaching for meaning through new modes of composition, drawing to the surface critical differences *within* the sciences—fundamental differences about the grounds and architecture of robust knowledge, differences that make such a difference they could be called ontological. Anthropologists should help sort this out, leading efforts to discern critical differences amongst an array of knowledge types, calling out conflicts of interest, leveraging dissonance with insight drawn from poststructural, feminist, and post-colonial theories of the way meaning is produced, deflected, smothered, and sometimes allowed to shift, opening up fundamentally new pathways (Fortun 2011).

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21. Cumulative effects pose fundamental methodological problems across the environmental and health sciences. As an ethnographer, I study how this is dealt with by different scientists and in different scientific fields.



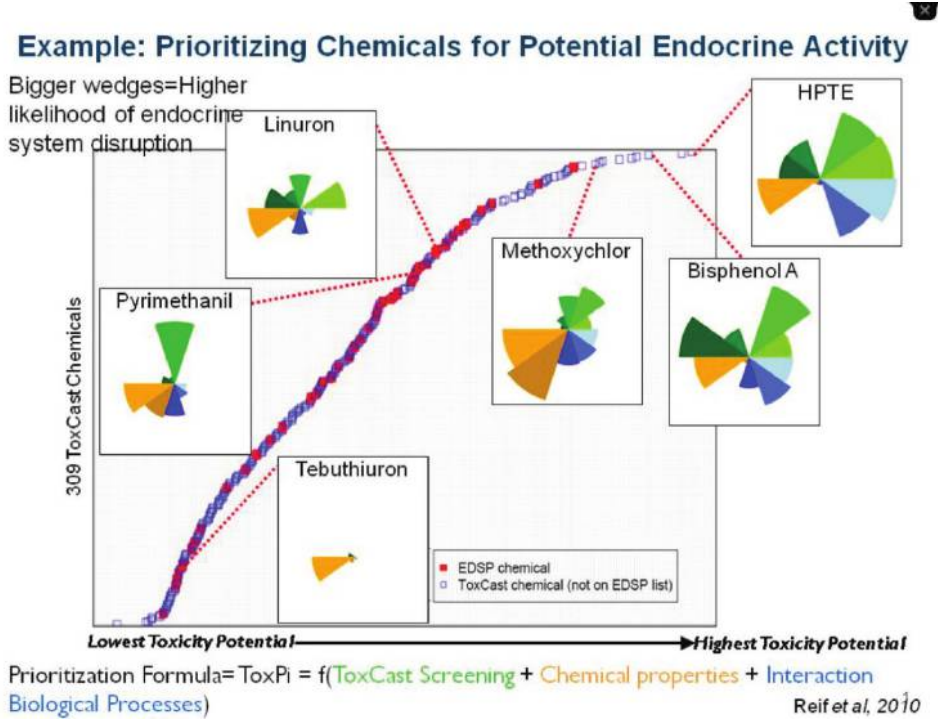


Figure 2: ToxPi. (Source: US Environmental Protection Agency.)

The figure to think with, it seems to me, is not Latour’s diplomat, but the teacher—more agitator than peacemaker, more animator than activist, enabling articulations and movements that could not have happened before.<sup>22</sup>

I cast the teacher as ideal figure in keeping with traditions of critical (feminist, labor, postcolonial-oriented) pedagogy that hold the teacher responsible for creating what can be called internal unrest, which unsettles the systems students inhabit and are in training to build and steward.<sup>23</sup> Teaching in this vein encourages what can be called a recursive engagement with history, returning to history again and

22. Here I want to acknowledge a critical point made by a generous reviewer who found problematic my casting of the teacher as an alternative to Latour’s diplomat. S/he read me as forgetting the violences of thought and the disciplinary dangers of pedagogy, assuming the inherent goodness of thinking. These are indeed real dangers, which I hope I have better attended to in this articulation. I also stand with the teacher as a critical figure in solidarity with teachers themselves, whose labor (particularly in the United States but also elsewhere) has been systematically discounted and denigrated in recent years.
23. Derrida wrote early of critical purpose in engineering internal unrest, arguing that to critique Reason one cannot merely oppose it, which would be a call for an even higher rationalism. One must work alongside Reason’s destructive currents, strategizing “something more to say when all is said and done.” Derrida’s own articulation is particularly relevant: “Since the revolution against reason, from the moment it is articulated, can operate only *within* reason, it always has the limited scope of what is called, precisely in the language of a department of *internal* affairs, a disturbance” (1978: 42).



again, weighing its determinations and marginalizations, aware that every remembrance is itself ideological (White 1973), in turn understanding the present as made through a conflation of different scales and types of systems (technical, social, bio-physical, political-economic, cultural, and discursive), always weighted (and often soiled) by history.<sup>24</sup> The outcomes are not always positive. The combined and cumulative effect could be called toxic vitalism.<sup>25</sup>

Teaching in this vein also works to engender a desire for a future that is not possible to calculate or even imagine within established forms of thought and operation, calling for aesthetics, patience, and discipline for experimental projects.

Experimentalism, it must be clear, is a means to acknowledge soiled grounds and the limits if not violence of all extant modes of thought, even those imagined to be diplomatic, radical, or avant-garde. Thus the importance of the kind of place set for the foreigner, standing in for difference that can't be anticipated.<sup>26</sup>

Though sober, the positioning isn't immobilized or apocalyptic. Ethnography, I have found, can help draw out how nested systems work and harm; ethnography can also *loop*, returning to the systems studied to dislodge what I think of as discursive risks—habits of language (which undergird habits of building, producing, and regulating)—that we have learned to be indifferent or injurious. The ethnographer then becomes a teacher, not as a master with corrections in hand, but as one who unsettles the systems studied so that they gain a capacity for transformation. It is an affirmative logic and practice, deeply invested in difference (of future from past, engendered, in part, though mobilization—imaginative and political—of difference of many sorts).

New informatics and media enable this kind of engagement, allowing for new juxtapositions, compositions, and circulations, parody and replays. Thus the importance of digital projects with experimental commitments like the AIME project. These projects and associated pedagogies need to be disruptive by design—not as an experimental end, but as a means to open up spaces of possibility. Weighted by

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The critical purchase of “unsettling” is particularly evident to me given work early in my career to help unsettle the out-of-court settlement of the Bhopal case by the Indian Supreme Court in 1989. The settlement was later upheld (in 1991, just as India was opening its currency to exchange), delivering a judgment that embodied the harms (and paradox) of the multiplicity/universality binary: the Bhopal case forcefully demonstrated the reach of the global system (into the relatively undeveloped Indian state of Madhya Pradesh) while demonstrating that people in that system are valued differently, monetarily and otherwise. Compensation for death in the Bhopal case was about \$1,000 per person.

24. Latour calls for something similarly combinatory but, in my reading, underattentive to the political-economic, the discursive, and what can be called soiled grounds (the way history weights the present at all scales, in all systems). My present is thus much more riven with disaster, chronic and acute.
25. The same reviewer who critiqued my earlier casting of the teacher also encouraged me to make my engagement with vitalism move overt. This feedback was vital (*sic*) in my last round of revisions.
26. Noting again, though, the importance of standing with foreigners themselves, given the ugly politics of immigration in so many places around the world today.

history, mindful of legacy systems and ontologies, curating the ethnographic record with a critical eye, permitting disturbance and internal unrest. We work from soiled grounds, in an atmosphere thick with the byproducts of fossil-fuel-intensive political and economic systems. Our anthropologies to come must work to dislodge the future these systems so forcefully anteriorize.

### Space to breathe?

*And if there is more than subjects and objects, and if we are able to define them, what sort of ontology do they have? If we can answer that, then we will have more space not only to breathe, of course, but also to enter into connection with the others, who are prisoners of modernization's limits, in a sort of prison. And we might be able to meet the constraints set by Gaia, the necessity of making a common world, and by the ecological crisis, on a more equal footing, because we could use all these other ways of handling these multiple ontologies. That's what the project is.*

—Bruno Latour, interviewed by John Tresch (Tresh 2013: 312)<sup>27</sup>

To conclude, I want to call to mind the air-quality crisis that we all live within, in many places producing complicated transboundary politics, laced with corporate interests. Air pollution is an important focus of my own work. I want you to think about it as your context, as the atmosphere in which an anthropology of late industrialism must breathe and live.<sup>28</sup>

Imagine efforts to breathe in Perry, Alabama, where the hardened sludge from Kingston. Tennessee's coal ash disaster was moved, and became dust. And think about Houston, where there is no zoning and thus no way to keep industrial facilities and emissions outside; the petrochemical industry thus dwells within—homes, schools, bodies, imaginations. And consider Delhi, where particulate matter pollution is reported to have increased 350 percent in the late 2000s.<sup>29</sup> Tehran also has remarkable particulate matter pollution, with reports of asthma rates at 35 percent.<sup>30</sup> Four of Iran's cities are among the ten most polluted cities in the world. Imagine the entanglements that produce this (Rayman 2013).

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27. See this interview for a compelling narrative about the ways Latour's recent project connects to his earlier work.

28. For (one) global perspective on air pollution, see <http://www.theatlantic.com/health/archive/2014/06/the-air-we-breathe/372411/>. Accessed June 10, 2014.

29. Centre for Science and the Environment (CSE), "Press release: Dialogue on air pollution and our health," August 31, 2011. <http://www.cseindia.org/content/cses-press-release-dialogue-air-pollution-and-our-health>. Accessed March 15, 2011.

30. This figure was provided in a June 10, 2012 report at <http://www.tinn.ir/vdch6xnw.23nwwdfit2.html>, attributed to Dr. Moein, head of the Iranian National Committee for Asthma and Allergy. Accessed May 1, 2012. Translation by Tahereh Saheb.



It is estimated that three hundred million people worldwide have asthma, and that there will be an additional hundred million with asthma by 2015.<sup>31</sup> And a new study reports that air pollution may be responsible for more than two million deaths around the world each year, with most of the estimated deaths in East and South Asia.<sup>32</sup> The World Health Organization (WHO) is taking note (Chan 2013), raising air pollution to a new level of concern.<sup>33</sup>

But imagine the complexity and controversy swirling around the studies that aspire to bring a crossnational, comparative picture of asthma into view, or that strive to show how climate change will likely exacerbate respiratory diseases<sup>34</sup> Many different kinds of scientists will be in the mix—using an array of evidence and modes of judgment.<sup>35</sup> Institutions like the American Petroleum Institute and the American Chemistry Council will also be at the table, representing commercial interests, and supposed-to-be public institutions like the WHO, the US Center for Disease Control, and the US Environmental Protection Agency. The latter aren't oily in the way of trade associations, but are still complicated, and laden with risk—from commercial pressure, and from legacy constructs of health and disease that make it hard to make sense of environmental health.<sup>36</sup> Biomedicine (in many but not all of its instantiations) remains Modern, even while pollution burdens call for something else.

So it is not just the chemical haze we need to worry out, though we must keep it in mind and learn to deal with it in practice. There is also conceptual haze, a cumulative effect of habits of relation, mind, and politics that makes it difficult to see the conditions of our times. The motivations and ambitions of the AIME project are thus to be applauded. In reaching for a new order of things, it is good to think

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31. [http://www.ginasthma.org/local/uploads/files/GINABurdenSummary\\_1.pdf](http://www.ginasthma.org/local/uploads/files/GINABurdenSummary_1.pdf). Accessed May 1, 2014.
  32. [http://www.huffingtonpost.com/2013/07/12/outdoor-air-pollution-deaths-yearly-annually\\_n\\_3586153.html](http://www.huffingtonpost.com/2013/07/12/outdoor-air-pollution-deaths-yearly-annually_n_3586153.html). Accessed May 1, 2014.
  33. [http://www.nytimes.com/2014/05/09/world/asia/cities-in-india-among-the-most-polluted-who-says.html?\\_r=0](http://www.nytimes.com/2014/05/09/world/asia/cities-in-india-among-the-most-polluted-who-says.html?_r=0) Accessed June 13, 2014.
  34. <http://www.ucdmc.ucdavis.edu/publish/news/newsroom/6320>; Accessed May 1, 2014.
  35. One recent study links air pollution in the United States to neurodevelopmental disability, race, and class, drawing out the human body itself as soiled grounds. See <http://www.motherjones.com/environment/2013/12/children-baby-pollution-development-brain>. Accessed May 1, 2014.
  36. WHO Director-General Margaret Chan notes the risk of commercial pressures on public health initiatives in a 2013 address, saying:

I am deeply concerned by two recent trends. The first relates to trade agreements. Governments introducing measures to protect the health of their citizens are being taken to court, and challenged in litigation. This is dangerous. The second is efforts by industry to shape the public health policies and strategies that affect their products. When industry is involved in policy-making, rest assured that the most effective control measures will be downplayed or left out entirely. This, too, is well documented, and dangerous.

with, and I have appreciated the opportunity to do so. I have questions about the approach, however, and concerns that it can't give us more room to breathe until it better attends to soiled states, the toxicity of vitalism, and the possibility of a future that can't possibly be calculated now.<sup>37</sup>

People are struggling to breathe, and more so in some places than others. There is always a Perry, Alabama, even in philosophical anthropology, marginalities that the rest depends on. We need to keep this in mind, catching our breath occasionally as a way to think about the conditions of our times, and the demands they put on us as researchers and teachers.

Houston (and Paris, and Delhi, and Tehran), we indeed have a problem—a pollution problem, a political problem, and a language problem. Let us work on these together.

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37. This passage from Drucilla Cornell's *The philosophy of the limit*, sketching the disjuncture between law and justice (and between imaginable and unimaginable futures), spoke strongly to me in the years I was first writing about the Bhopal case, and continues to orient my work:

As with Derrida, Levinas' conception of time has implications for his understanding of justice. For Levinas, Justice is messianic. The "avenir" is not just the limit created by the aporias Derrida indicates, but instead inheres in the otherness of the Other that cannot be encompassed by any present system of ideality. The Other is other to the system. Incorporation into the system is the denial of the Other. Justice is sanctity for her "otherness." Nonencompassable by the system, the Other is also noncalculable. The right of the Other, then, is infinite, meaning that it can never be reduced to a proportional share of an already-established system of ideality, legal or otherwise. It is the Other as other to the present that echoes in the call to justice. The echo breaks up the "present," because the Other is there before the conception of a system of ideality and remains after. For Derrida and Levinas, if for different reasons, the future is distinguished from the present that merely reproduces itself. Justice, in other words, whether as a limit, as echoed in the necessary demand of the Good, or as the call of the Other that cannot be silenced, is the opening of the beyond that makes "true" transformation to the "new" possible. Without this appeal to the beyond, transformation would not be transformation, but only evolution and, in that sense, a continuation. The very concept of continuation as evolution of the system implies the privileging of the present. (Cornell 1992: 137)



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## De Latour à la fin de l'industrialisme

Résumé : Je replace le dernier projet de Latour, *Une enquête sur les modes d'existence* (EME/AIME), dans le contexte de la fin de l'industrialisme et questionne à la fois ses bases conceptuelles et la conception de sa plateforme numérique. Je soutiens que la sémiotique de Latour (et les concepts associées de réseaux et d'ontologies) sont d'un fonctionnalisme qui imite la logique industrielle, minorant à la fois la production d'une différenciation hiérarchique dans un système donné, et les externalisations du système. Cette approche sous-estime donc la toxicité de son vitalisme.

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