Review of Jennifer Gabrys, *Program Earth: Environmental Sensing Technology and the making of a Computational Planet*

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Review of Jennifer Gabrys, *Program Earth: Environmental Sensing Technology and the making of a Computational Planet*  

**Abstract**  
The focus of Jennifer Gabrys's *Program Earth: Environmental Sensing Technology and the Making of a Computational Planet* is "the becoming environmental of computation" (p. 4) understood as the growth of "a distributed and embedded range of monitoring technologies that inform how environments are sensed and managed (p. 3). Although based on wide-ranging research carried out over the past decade, it is not a detailed empirical study; instead, it deploys a number of well-chosen examples in pursuit of more abstract ends.

**Disciplines**  
Animal Sciences | Earth Sciences | Ecology and Evolutionary Biology | Environmental Indicators and Impact Assessment | Environmental Monitoring | Forest Sciences | History of Science, Technology, and Medicine | Plant Sciences

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it can only go so far in the crafting of general theory. To overcome this problem, the bulk of the last chapter is a speculative exercise, imagining different fields and modes of prediction that Daipha intends to expand to as sites of variation. Usually, I am not sure why people plug their next projects at the end of their current ones. Sociological writing does not seem to be the right place to provide sneak previews. But in Daipha’s work, the comparative opening of horizons in the concluding chapter gives a sense of where a theory of problem solving may emerge from and how medicine and finance, two other fields that are obsessed with prediction, operate. This is an ambitious mapping of an intellectual project. I hope that Masters of Uncertainty will prove to be the first part of this trilogy.


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The focus of Jennifer Gabrys’s Program Earth: Environmental Sensing Technology and the Making of a Computational Planet is “the becoming environmental of computation” (p. 4) understood as the growth of “a distributed and embedded range of monitoring technologies that inform how environments are sensed and managed” (p. 3). Although based on wide-ranging research carried out over the past decade, it is not a detailed empirical study; instead, it deploys a number of well-chosen examples in pursuit of more abstract ends. Drawing on theorists such as Alfred Whitehead, Gilbert Simondon, and Isabelle Stengers, it takes a process-philosophical, postconstructivist, and postpoststructuralist approach. Accordingly, it focuses on ontology rather than epistemology, performance rather than representation, experimentation rather than critique, relations that generate effects and affects (or “a/effects”) rather than predetermined entities, and distributed more-than-human processes rather than agential human subjects. Ubiquitous computing and global telecommunications provide starting points for working out the implications of these positions for thinking about environments and environmentalisms today.

One of the book’s basic premises is that neither entities nor environments preexist the relations that bring them together; instead, they emerge through acts of sensing and participating in particular situations. Environments are thus inherently multiple and contingent, as are the entities that inhabit them. Similarly, citizens and citizenship are not preexisting categories but rather contingent manifestations of changing relationships. Older models of citizenship founded on deliberation and debate, Gabrys argues, are currently being supplanted by models based on responsivity through digital sensor networks. Michel Foucault’s concept of environmentality, which has been taken up by
others in regard to the subjectivities produced in and by environmental governance, is reworked here to focus on forms of “governance through the milieu” (p. 191) enabled by digital sensing. Distributed a/effects and operations, not individual subjectivity or agency, are the main concern.

Despite the title, *Program Earth* has little to say about programs, programming, programmability, or programmers. Instead “sensing” is the key concept around which the book’s various examples and arguments circulate. The data acquired through environmental sensing are, Gabrys argues, “creaturely” (p. 160) in Whitehead’s sense of the term: they are not universal but rather occasioned by particular ways of perceiving and acting. The diverse range of sensors discussed includes webcams, satellite imaging, animal trackers, pollution sensors, and participatory citizen-sensing programs for addressing urban infrastructural problems. Although humans are crucial participants in all these forms of sensing, the book approaches digital sensing as something that often happens alongside the human senses rather than as a prosthetic extension of them. Increasingly, environmental data have world shaping a/effects despite never being directly encountered by a perceiving human subject. One reason for this is that many environmental phenomena, from climate change to the Pacific garbage patch, cannot be perceived directly by human senses. In other cases, even when visual information is captured, it is automatically processed without ever being humanly viewed. Thus sensing becomes a more- and other-than-human process.

Assessing in what ways the new forms of citizenship and democracy that emerge in relation to these more-than-human forms of sensing are better or worse than the old ones is not the point of this book, although Gabrys takes care to point out the limits of environmental computing in the context of “smart city” initiatives, in which the public good is often reduced to efficiency and citizens are understood mainly as customers or data sources. Instead of elaborating upon this critique, however, the book takes these developments as opportunities for experimentation and “speculative adventure” (p. 272). A passage from the chapter focused on climate change provides a sense of the kind of experimentation envisioned: “An inventive politics of subjects that is attentive to the realness of relations (and their disjunctures) might generate new understandings of citizenship as involving becoming and belonging with extended more-than-human communities and milieus. And from this proliferation of subjects a proliferation of program earths might also occur, as milieus formed through diverse experiences for expressing climate change” (p. 132). Precisely how this would relate to or replace existing forms of citizenship and environmentalism remains unclear; the book offers a vocabulary and a sensibility, not a program of action.

Keeping such a sensibility in play in the face of pressures toward efficiency, problem solving, and “smartness” in the digital environmental sensing domain, Gabrys argues, depends on embracing what Stengers calls the “idiot”—the participant or citizen who intentionally or accidentally fails to satisfy expectations of rational discourse or effective practice. The idiot puts into question the solutionism prevalent in much environmentalist and urbanist discourse...
that underemphasizes the emergent and relational character of entities and problems. In the face of efforts to eliminate unpredictability through surveillance, the participation of the idiot reasserts the messiness of encounter and the impossibility of total control. Participation itself, often idealized in the activist citizen-sensing projects discussed throughout the book, is refigured here as more important for the ways it reshapes individuals, environments, and problems than for its ability to produce useful environmental data or to solve previously identified problems.

Characteristic of the book as a whole, this is an optimistic and generous analysis in at least two ways. First, even when environmental sensing projects are based on reductive premises, are derailed by "idiotic" participants, and fail to produce any of the desired outcomes, Gabrys argues, there is important work being done to remake citizens, sensors, and environments. Because the examples offered are worked through rather cursorily, however, it is hard to know how important that work really is. Second, exploitation, deception, corruption, and other varieties of ill will are subsumed or marginalized by the figure of the idiot and the possibility of speculative recuperation. Amid multiplicity, this approach seems to offer little room for conflict or error, let alone conspiracy. Nonetheless, the book is full of stimulating ideas and provocative reframings of environmental concerns that are sure to spark further research.


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Renée L. Beard’s Living With Alzheimer’s: Managing Memory Loss, Identity, and Illness follows a symbolic interactionist tradition in both method and core concepts with the social model of disability as a complementary influence. Beard describes the early career of acquiring an identity as an Alzheimer’s disease (AD) patient, focusing on processes of diagnosis as turning points in knowing oneself and being known according to this master status. The book’s title is thus too broad. Beard says little about everyday living with Alzheimer’s; her observations are of how clinicians construct memory loss as a disease. On my reading, a more accurate title would be “The Medicalization of Memory Loss: Managing Identity during Early Diagnosis of Alzheimer’s.” On that topic, the book is an exemplary study, important for the sociologies of health and illness, social movements, disability studies, aging, and identity formation.

Beard observed two clinical settings, one neurological and the other psychiatric, in which mostly self-referred people become patients. She also attended medical conferences and meetings of advocacy groups. She inter-