Rapt in Technology

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I.

> pity this busy monster,manunkind,
>
> not.   Progress is a comfortable disease:
> your victim(death and life safely beyond)
>
> —e.e.cummings XIV, *1 x 1*, 1944[1]

Given the energy expended within dominant Cartesian epistemologies constructing and policing conceptual boundaries between the natural and the cultural—energies joined, paradoxically, to the pragmatic Baconian colonisation of nature—the terms 'environment' and 'technology' have come to share an interesting convergence.

First, both have become amorphous and diffuse, referring to ubiquitous conditions in human experience. Langdon Winner's pronouncement in 1977 that technology "has come to mean everything and anything; it therefore threatens to mean nothing"[2] is relevant still. It is increasingly true also of the functioning of the term environment, an observation that goes some way in explaining the centrifugal forces currently disintegrating and dispersing environmental discourses.[3]

Second, these domains of everywhere have been progressively objectified, squeezing out of language the possibilities of negotiation and leaving mostly description. The objectification of technology has been little resisted, a fact evident in the neglect of this subject, until recent times, by philosophers and social theorists.[4] Even with non-technical literatures on the meanings of technology emerging since the 1960s, the instrumentalism of engineering discourse and practice continues to determine the focus and depth of political debate about technological change. In wider culture, instrumentalism competes with the equally objectifying capacities of technological determinism that presents artefacts not as socially neutral, but as somehow inherently good or evil.[5]

In contrast, objection to the objectification of nature has been a foundational historical force in the critique and yet also the unfolding of modern Western traditions.[6] Awareness of the interdependence of instrumentalism and romanticism in post-Enlightenment narratives of nature—to put it in neat, if dangerously convenient, terms—moves us further toward active understandings of the sources of disorder and confusion in contemporary environmental discourses. On the one hand, as we build and inhabit ever-more hybridised environments, expressions of the aesthetic, moral, and spiritual values of nature are intensifying, but becoming typed as subjective and, as such, as essentially private concerns to be expressed by consumers as lifestyle preferences. On the other hand, as the domains of environmental science, environmental engineering, and environmental management grow year by year, public reference points in the idea of 'environment' outside of empiricism seem harder to maintain.[7] Here nature becomes 'the environment', a biophysical unity existing outside of, before and beyond, culture and experience. The prior historical mosaic of technological environments becomes 'the environment', a global device for human survival in plain view to the Apollo astronauts and contained within the heaven-born photographs that have provoked awareness of earth's finiteness and fragility ever

since. But although 'the environment' can now be seen as a single fact, as a whole, increasingly it can only be rationally spoken as ever smaller parts existing within specialist discourses that themselves fracture into ever more pointed splinters of biophysical fact.

The juxtaposition of the tedious rationalism of conventional scholars and the absurd—if sometimes unwittingly amusing—sibling squabbles amongst radical scholars within the field of environmental ethics; the growing proliferation of competing environmentalisms in general; and the universal availability of the lexicon of sustainability are three important indications of the lack of critical gravity in understandings of 'the environment'. The pursuit of the 'natural' in consumer product design in everything from ecotourism to real estate to shampoo, with its attendant market premium, is, in a different way, another.

II.
> plays with the bigness of his littleness
> —electrons deify one razorblade
> into a mountainrange;lenses extend
>
> unwish through curving wherewhen till unwish
> returns on its unself.
>   A world of made
> is not a world of born—pity poor flesh

The expansiveness of scope and narrowness of consciousness characteristic of objectivist understandings of the terms 'technology' and 'environment' produces a vacuum in political imagination. Framed in this way, the theme of technology-as-environment illuminates little not already easily in view. As a statement of description, it is undeniably true: these two categories are now indivisible. The webbing of artefacts into a technosphere as integral to the conditions of life as the ecosphere is an event. Nature, thought as a-technological earth, is undeniably dead, although one of the vital tasks of the practices of simulacra is now precisely to keep this thought alive.[8] The 'artefactual natures' to be found in television documentaries, photographic posters, and zoos deify 'pure natures' just as they enclose them. Consider that, their ecological brethren apparently pursued to extinction in the first-half of last century, images of the Tasmanian Tiger, now freely inhabit beer labels, tourist brochures, and government letterhead as proof of the celebrated status of the 'wild' in my home-state ("the natural state," no less, broadcast Tiger-adorned car-licence plates). Hope swings fluidly between *another* sighting and the possibility that cloning may see the beast brought back through the portal of the laboratory.[9]

The fact of earth's mortality, just as with the related fact of our own mortality, is a sobering and potentially terrifying one. It is not surprising that, as many mourn, control and security have replaced ideas of limits and stability at the centre of environmental debates.[10] The ecoluddite sensibilities of counter-cultural environmentalism—evident in the work of Lewis Mumford, Ivan Illich, and E. F. Schumacher, for instance—seem harder to sustain as confidence in the restorative agency of ecospheric processes in a technospheric reality has weakened (and as warnings of ecotastrophe have become mundane).[11] Yet, nonetheless, the grip of technological determinism on environmental debates is, if anything, becoming stronger as techno-utopian narratives displace technophobic anxieties. We see these narratives taking crude shape in the Brundtland Commission's uncomplicated optimism in their 1987 report: a document that offhandedly assumes that "new and emerging technologies offer enormous opportunities for

raising productivity and living standards, for improving health, and for conserving the natural resource base.[12]

Thus was 'win-win' environmentalism launched, and is now to be found throughout the policy literature, in the assumption—initially one of convenience, but increasingly one of conviction—that sustained techno-economic expansion provides the only future path to resolving (i.e., paying for) problems resulting from this expansion in the past.[13] The prose of industrial designer William McDonough pares this message back to its core: "The key to sustainability is making the market work for the environment."[14] This 'ecomodernist' message rapidly gained detail, elaboration, and an audience in a wave of almost breathless publications in the 1990s, in which two books under auspices of the World Business Council for Sustainable Development; the journalist Gregg Easterbrook's description of environmental optimism; the report for the Club of Rome, *Factor Four*; and the pulsing (if only partially coherent) manifesto for 'natural capitalism' by Paul Hawken, Hunter Lovins, and Amory Lovins deserve particular mention.[15]

In the early years of this new century, the idea that only purposeful technological intervention can prevent ecological systems, and by implication the conditions of human life, from continuing to deteriorate is becoming spoken as obvious and unproblematic. In the span of only one generation, the technology of planetary life-support has ceased to be science fiction and has become institutionally thinkable. Buckminster Fuller's declaration in 1970 that "the universe is a comprehensive system of technology" seems less obscure.[16] As the shadow of this idea lengthens—and those of deep ecology withdraw to the few (lucrative) nooks housing 'authentic nature'—the central rhetoric of 'saving earth' resonates of doing more rather than of doing less, as it once did when it rang with the catch-cries of 'frugality' and 'simplicity'.[17] "How to Save the Earth," ran the big type on the cover of *Time* magazine in the lead up to last year's World Summit on Sustainable Development. It continued in more restrained font: "The wild weather is a sign of things to come. But fresh ideas and new technology can help us make this a green century."[18] The juxtaposition here of fear of an aggravated, wilder earth (especially one more unpredictable) and confidence in a 'new' kind of technology is instructive, but it does not speak to the simple conflict of machine and nature that defined earlier stories of industrialism. Rather, the key metaphors are becoming ones of convergence and, even, of transcendence, as was evident in the striking illustration by David Bowers in the middle of the magazine where we encounter a besuited white male, against Arcadian background, with a convoluted eco-industrial installation in place of a brain, releasing flowers out of 'his' chimneys and leaves out of 'his' waste pipes.[19]

The technophilic narratives of ecomodernism draw heavily upon the emotional energies generated by perception of nature as finite, fragile, and endangered—conditions that greatly concentrate aesthetic appreciation—to present technological evolution as the vital precondition of the continued evolution of life itself. Kevin Kelly's *Out of Control: The new biology of machines* (1994) is well worth a read in this regard. Kelly, among other things co-founder of *Wired* magazine, is an enthusiastic spectator of the processes of "bionic convergence" by which "overlap of the mechanical and the lifelike increases year by year" producing, "not a world of gray steel…. [but, rather] a neo-biological civilization."[20] It seems e.e.cummings was wrong: "The realm of the born … and the realm of the made … are becoming one."[21] I find fascinating the following passage in which Kelly explains the confidence he drew from visiting the Biosphere 2 dome (Bio2)—a technologically maintained and 'autonomous' living system developed in Arizona—despite the widespread verdict that this experiment was a failure whose

prime achievement was to re-affirm the vast extent of the gap between ecological and technological forms of complexity and autopoiesis:

The nauseating fear that machine technology will replace all living species has subsided in my mind. We'll keep other species, I believe, because as Bio2 helps prove, life is a technology. Life is the ultimate technology. Machine technology is a temporary surrogate for life technology. As we improve our machines they will become more organic, more biological, more like life, because life is the best technology for living.... Someday the difference between machines and biology will be hard to discern. Yet "pure" life will still have its place. What we know as life today will still have its autonomy-it goes by itself, and more importantly, it learns by itself. Ultimate technologies, of any sort, inevitably win the allegiance of engineers, corporations, bankers, visionaries, and pioneers— all the agents who once were thought of as pure life's biggest threat.[22]

Undoing this dense knot of ideas is beyond my patience in this paper, but I do want to draw attention to Kelly's strange reluctance to give up the idea of life's purity just as he subsumes life's agency and telos within human agency ("we'll keep other species") and, in turn, subsumes human agency within the agency and telos of liberal-capitalist practices of innovation, entrepreurship, and control.

And so, as it was the determinant of modern progress, is (eco)efficiency becoming the determinant of latemodern 'secure-ability', although it now embraces not only the world of the made but also the world of the born. The agents of economic growth are serendipitously discovering that they are blood relatives of their old foe, nature and now see only synergies between the demands of life and the demands of capital. The ability to read 'biologic' as a template for technological evolution prefigures the reconciliation of Gaia and device, proclaim these prophets of technobiotic futures, a cyborld in which all that is born is also made.[23] Optimistic technologists may welcome this fact and pessimistic environmentalists deplore it, but its immutability and its inevitability seem undeniable. The redundancy of politics here perhaps explains why, despite their curved edges, models of these radical futures—in which technology has realized "the goal of a world in which resources are fully available to all of humanity," thereby designing out "the age-old failures of war, poverty, hunger, debt, nationalism, and unnecessary human suffering" —look uncannily familiar to this critic of an unjust and unsustaining present.[24]

III.

>   and trees,poor stars and stones,but never this
>   fine specimen of hypermagical
>
>   ultraomnipotence.   We doctors know
>
>   a hopeless case if—listen:there's a hell
>   of a good universe next door;let's go

As a statement of facticity technology-as-environment mirrors the face of our increasingly technologised world, lending itself mostly to the labours of description and partly to the emotions of technophiles and technophobes, with their different but related responses to this fact. Reason becomes before all else a technique of cloning, reproducing the present. Action increases. Agency weakens. The future becomes transparent. Yet, of course, this is not the end of the

matter, and especially not the beginning, because, as a statement of ontology, technology-as-environment points elsewhere, lighting up puzzlingly good, if neglected, questions about the contemporary conditions of our reality-making. These are questions that may help us catch sight of universes simultaneously next door and, in this present, impossible to reach. Questions that present technology to us, not as object or knowledge or action, but as the site of our encounter with that which lies simultaneously beyond us and within us: not as the antithesis of 'nature', but as the medium through which and in which human and world embrace, inhabiting each other. Questions that ask how and why we are building the world that builds us. In what little space that remains to me here, I briefly follow the lead of these questions to leave behind the techniques of secure-ability and catch sight of different ground in which we may yet build genuinely postmodern understandings of sustainability.

If the dualism between human essence and artefact, producer and product, is brought into the open as questionable, then the suggestion that technology is environment presents technology as surrounding us as a medium of experience. Technology is habitat. It is never simply used; it is always inhabited. Technology enwraps us, but not just as a materiality. Technology is an experience of epistemological, axiological, and metaphysical embedding. The French sociologist Peirre Bourdieu is well-known for his use of the concept of habitus to name the way that "the mind born of the world of objects does not rise up as a subjectivity confronting an objectivity," but, rather, that "the mind is a metaphor of the world of objects which is itself but an endless circle of mutually reflecting metaphors."[25] This is the essence of the dynamic of technology-as-environment: things and thinking, materiality and consciousness are in each and every moment and place the product of the other. Their relationality is the precondition of agency.[26] Technology-as-environment names nothing less than the generative reciprocity of self and world. It names the human capacity to respond to particular conditions in time and space—social, ecological, and cosmological—so as to transform them, projecting forward in time and space particular meanings and purposes that reconstitute in unpredictable ways the concrete conditions in which, by equally indeterminable processes, new needs and purposes are born.

Technology-as-environment names those composite wholes, those habitats, within which nature, people, and their productions belong each to the other. What, then, is to be asked of the latemodern habitats in which technology proliferates with apparent autonomy, but where it is spoken mostly as an environment without depth or boundaries? What of the environments in which technology appears as pre-given facts rather than as the negotiated and partial embodiment of particular social meanings and purposes?

Martin Heidegger's post-war gift to us—which, to be sure, arrives in a package of very mixed blessings—is the beginnings of a different saying from within which we come to see how the more the technology of control provides answers to the mysteries of our materiality, to the mysteries of nature and of culture, the more it itself becomes the foundational mystery of our time and place.[27] Technology itself becomes uncontrollable. We begin to see how practices and words are caught in a historical project in which they function as devices burying from sight the dialectical play by which habitat and habitus, world and world-view, experience and reason, bring the other into reality. We see, as Heidegger did, the danger of practical forms of insight ceasing, of agency itself ceasing, as the activities of instrumental control displace other technological possibilities.

We see that the sources of the unsustainability of our age are not to be found in the imperatives of control themselves, not in some mindless biological lust for supremacy, but in the particular

social practices, the technological habitats, that present our reality as unwelcoming, ungenerous, and unforgiving and therefore as demanding of being controlled in the first place. As technological change now warms the planet, deadens the soil, and poisons the water, 'the environment' of ever-escalating risk binds us ever more tightly to technologies promising to protect us. The technosphere, technology-as-global environment, is nothing less than the performance of a story in which an inherently meaningless, and therefore an inherently dangerous, earth must be the wrapped in the purposes of security. The technosphere tells of the dialectical interplay of fear of an alien, indifferent reality and rapture in new worlds of technology promising safety and, perhaps especially, immortality.

Conversely, the meanings of sustainability are to be found within technological habitats that invite entry into a genuine commerce of sustenance, a nourishing embrace, with a reality welcoming, generous, and forgiving. The anxieties and raptures bound up in latemodern habitats cannot be easily shifted, but they can be more consciously named and observed and, thus, the deeper function of technology as reality-building can begin to be narrated and performed with greater awareness and practical possibility. If nothing else, the ideal of sustainability has true power to the extent that it offers knowledge of how much we cannot yet know that we long to know, through which we are paradoxically made whole, integrated, and complete. It is open to us, within the technospheric treadmill of danger and deliverance, to experiment with the experience of sustenance, shifting our orientation to the technologies around us. To encounter the car-dependent city through a bicycle or the global workplace through fidelity to local home-place or the news of terrorism without the images of television or the supermarket as a grower of vegetables is to encounter latemodern habitats in ways that reveal their unique character—to live without television in a world without television is, for instance, a very different encounter than to do so in our televisual environment—and that set it vibrating with the possibilities of renegotiation. Artefacts can be, and are being, relocated and redesigned in our lives to allow new meanings of nurture to be born in us, heralding the time when care will flow more strongly from us to our world and from our world to us through the medium of technology.

Notes

[1] This poem is reproduced here in 3 sequential sub-headings for the paper. e.e.cummings, *Complete Poems, Volume Two 1936-1962* (Bristol: MacKibbon & Kee, 1968), 554.

[2] Langdon Winner, *Autonomous Technology: Technics out-of-control as a theme in political thought* (Boston, MA: MIT Press, 1977), 10.

[3] A disintegration that disorganises the range of competing vocabularies contesting the politics of the environment so that widely divergent views are now compressed into a single, deeply ambivalent rubric, that of sustainable development, and all can legitimately claim the mantle of environmentalism. See Michael Jacobs, "Sustainable Development as a Contested Concept," in *Fairness and Futurity: Essays on environmental sustainability and social justice*, ed. A. Dobson (Oxford: Oxford University Press, 1999), 21-45. See also Phil Macnaughten and John Urry's excellent *Contested Natures* (London, Thousand Oaks, CA & New Delhi: Sage, 1998) and John Dryzek's *The Politics of the Earth: Environmental Discourses* (Oxford & New York: Oxford University Press, 1997). For an example of rhetorical analyses that seems to me to expose greater incoherence the more they strive to expose order or method in environmental discourses see George Myerson and Yvonne Rydin, *The Language of Environment: A new rhetoric* (London: UCL Press, 1996) and Tarla Rai Peterson, *Sharing the Earth: The rhetoric of sustainable development* (Columbia, SC: University of South Carolina Press, 1997)

[4] This is not to deny the considerable resources for inquiring into technology buried in the philosophical canon, the excavation of which being one of the first tasks of the post-war sub-disciplines of philosophy of technology. See Don Ihde, *Philosophy of Technology: An introduction* (New York: Paragon, 1993) and Andrew Feenberg, *Questioning Technology* (London & New York: Routledge, 1999).

[5] See my *Technology and the Contested Meanings of Sustainability* (Albany, NY: SUNY, 2001), 100-102.

[6] See Charles Taylor, *The Ethics of Authenticity* (Cambridge, MA & London: Harvard University Press, 1991).

[7] The foundational work in deep ecology, Arne Naess's 1973 article "The Shallow and the Deep, Long-range Ecology Movement: A summary," *Inquiry* 16 (1973): 76-100 can be read as an early warning to 'environmentalists' about this danger. An original discussion exploring the problems with translating counter-modern environmentalism into empirical 'evidence' of modernity's physical decline can be found in Andrew Murphy, "Environmentalism, Antimodernism, and the Recurrent Rhetoric of Decline," *Environmental Ethics* 25 (Spring 2003): 79-98.

[8] Bill McKibben's account of this 'death' in *The End of Nature* (Harmondsworth, Middlesex: Penguin, 1990) not surprisingly met with considerable controversy and misunderstanding. For recent discussions of postnaturalism see Steven Vogel, "Environmental Philosophy After the End of Nature," *Environmental Ethics* 24 (Spring 2002): 23-39 and Noel Castree, "Environmental Issues: Relational ontologies and hybrid politics," *Progress in Human Geography* 27, No. 2 (2003), 203-211.

[9] A story told in David Owen, *Thylacine: The tragic tale of the Tasmanian Tiger* (Sydney: Allen & Unwin, 2003).

[10] Dryzek, *The Politics of the Earth*, goes some way to unpacking this shift in his comparison of the earlier survivalist paradigm of post-war environmentalism with the emerging Promethean paradigm, 23-60. I explore this shift and the historical context of ideas of stability and security in environmental thought in *Technology and the Contested Meanings of Sustainability,* 13-16 & 68-72 respectively.

[11] See, e.g., Yuek-Sze Lo's thoughtful response to Eric Katz's untenable claim that "once human intervention occurs, there is no longer a natural system to be preserved, there is only an artifactual system." "Natural and Artifactual: Restored nature as subject," *Environmental Ethics* 21 (Fall 1999): 247-266, Katz cited 252. Of course, the label 'Luddite' is routinely misused by critics to present a simplistic reactionary caricature in places of the subtle socio-economic critiques of specific technological changes by the original Luddites in 19th-century England and by subsequence neo-Luddites such as Mumford, Illich and Schumacher since. See Kirkpatrick Sale, *Rebels Against the Future: the Luddites and their war on the industrial revolution, lessons for the computer age* (reading, MA, Menlo Park, CA & New York: Addison-Wesley, 1995).

[12] World Commission on Environment and Development, *Our Common Future* (Oxford: Oxford University Press, 1987), 217.

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[13] The literature debunking 'evidence' that there is anything resembling an environmental crisis has also swollen in size and authority from the early work of Julian Simon—who felt able to preface a 1994 essay "Scarcity or Abundance?" (reproduced in *The Business of Consumption: Environmental ethics and the global economy*, eds. L. Westra and P. H. Werhane (Lanham: Rowman & Littlefield 1998), 237-245) thus: "what you read below was a minority viewpoint until sometime in the 1980s, at which point the mainstream scientific position shifted almost all the way to the position set forth here," 237—to the recent empirical work of Bjorn Lomborg in *The Sceptical Environmentalist: Measuring the real state of the world* (Cambridge: Cambridge University Press, 2001) and the political rhetoric of Peter Huber in *Hard Green: Saving the environment from the environmentalists* (New York: Basic Books, 1999).

[14] An interview with William McDonough by Eric Roston, "New war on Waste," *Time* (Australia) 34 (26 August, 2002): 48-51.

[15] Stephen Schmidheiny, *Changing Course: A global business perspective on environment and development* (Cambridge, MA & London: MIT Press, 1992); Livio D. deSimone & Frank Popoff, *Eco-efficiency: The business link to sustainable development* (Cambridge, MA & London: MIT Press, 1997); Gregg Easterbrook, *A Moment on the Earth: The coming age of environmental optimism* (New York: Viking, 1995); Ernst U. von Weizsacker, Amory B. Lovins & L. Hunter Lovins, *Factor Four: Doubling wealth - halving resource use* (Sydney, Allen & Unwin, 1997); Paul Hawken, Amory B. Lovins & L. Hunter Lovins, *Natural Capitalism: The next industrial revolution* (London: Earthscan, 1999). See also the more recent William McDonough & Michael Braungart, *Cradle to Cradle: Remaking the ways we make things* (New York: North Point Press, 2002).

[16] R. Buckminster Fuller, "Technology and the Human Environment," in *The Ecological Conscience*, ed. R. Disch (Englewood Cliffs, NJ: Prentice Hall, 1970), 174-180, 178.

[17] Revealingly, Bill McKibben's recent an eloquent critique of the dynamics of bioengineering, *Enough: staying human in an engineered* age (New York: Times Books, 2003), struggles to find any language within which to reclaim technological environments, and ends somewhat desperately offering Ghandian non-violence and wilderness as two "technologies that act as brakes…. Right now, they aren't as important as computers. But one can at least envision a world in which they might be. We've not yet foreclosed that planet; enough remains a possible invention," 218. Apparently as determinist as his techno-utopian counterparts, Despite his deployment here of religious and wilderness discourses as technologies, McKibben presents technological environments as the antithesis, and the death, of spirit and nature, and can offer only the hope of escape and the politics of rejection.

[18] *Time* (Australia) 34 (August 26, 2002). Anthony Weston provides a response to the impulse to save earth in "Is it Too Late?," in *An Invitation to Environmental Philosophy*, ed. A. Weston (Oxford & New York: Oxford University Press, 1999), 43-68.

[19] *Time,* 49.

[20] Kevin Kelly, *Out of Control: The new biology of machines* (London: Fourth Estate, 1994), 3, 2.

[21] Ibid., 2.

[22] Ibid., 212. For a discussion of the failure of Biosphere 2 see the editorial "The Origins of Biosphere 2" in *The Eoclogist* 25, no. 4 (1995): 158-162.

[23] I take the term biologic here from David Wann, although I do not want to suggest that he is in Kelly's league as champion of technobiotic futures, as he retains a "limits to growth" sensibility toward nature and advocates a marriage of nature and culture in which technology is designed to flow with nature. Indeed, he closes his 1990 book with Gary Snyder's deep ecological enjoinder to "go lightly" on earth. Nonetheless, Wann—who dispenses with the second law of thermodynamics to assert that "[n]atural systems move from disorganization and inefficiency toward balance and stability, and we're part of a natural system"—raises technological efficiency to the status of a evolutionary law and thereby displaces political critique with unbridled optimism in the capacity of modernity to thoroughly redesign itself in the pursuit of technological prorgess. *Biologic: Environmental Protection by Design* (Boulder, CO: Johnson Books, 1990), xi.

[24] Jacques Fresco & Roxanne Meadows, "Engineering a New Vision of Tomorrow," *The Futurist* (January-February 2002): 33-36, 33, 35.

[25] Pierre Bourdieu, *Outline of a Theory of Practice*, trans. Richard Nice (Cambridge: Cambridge University Press, 1977), p. 91. I discuss the relevance of habitus for the understanding of technology as habitat in "Reinhabiting Technology: Means in ends and the practice of place," *Technology in Society* 24 (2003): forthcoming.

[26] As Tony Fry has put it, "we design our world, while our world designs us," *A New Design Philosophy: An introduction to defuturing* (Sydney, UNSW Press, 1999), 6.

[27] I attempt to unwrap at least a bit of this difficult package in Davison, *Technology and the Contested Meanings of Sustainability,* 115-140.