Guest Editorial
The Cyborg, its Manifesto and their relevance today: Some reflections

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Squirming Back into the Cyborg Manifesto

The mere presence of adoring fans has been insufficient to entice Donna Haraway to visit Australia. Only Helen Verran and postgraduates at Melbourne University's History and Philosophy of Science department managed to interest her once in the late 1990s. So as the first Australian with a doctorate co-supervised by Haraway at the History of Consciousness program at the University of California, Santa Cruz, I have occasionally been called upon to speak when the doyenne of cyborg feminism was, as usual, unavailable down under (Sofoulis 2003). The role of antipodean Haraway always made me uneasy. It is a mistake to project patriarchal (and oedipal) traditions of scholarly filiation onto feminists. In my observation, feminist supervisors rarely seek to turn out clones of themselves and feminist students do not usually aspire to replicate/replace their professors. Like cyborgs, feminist students can be "exceedingly unfaithful to" and quite uninterested in their origins (Haraway, 1991, p.151)[1].

But what really makes me squirm whenever I read the opening pages of the Manifesto or am asked to speak for its author, is how closely I recognise my (then) self in the feminist, and especially ecofeminist, tendencies that Haraway was railing against. In the four-part conference presentation where Haraway introduced her cyborg to US audiences, I went first because my view was more standard and even "retro" compared to where Donna wanted to take us. For I was one of those feminists reproducing all those dualisms of "white capitalist patriarchy"; I was on about the woman-nature / man-machine connections and angsting over the inevitability of C^{3}I and the military logics of computing leading to the Star Wars apocalypse (Sofia, 1984). I wrote about "bisexuality, pre-oedipal symbiosis … other seductions to organic wholeness" (150). With typical postgraduate self-centredness, I paid little attention to Haraway's cyborg while working on my own ambiguous metaphors and myths of high technology and science fiction like the brain-womb, the spermatic word, the penis-breast, the cannibaleye (Sofia, 1987). The bisexual / combined parent figure of the Uroborous, the serpent that feeds and fertilises itself, was one of my favoured metaphors that made Donna want to "regurgitate'". I saw Frankenstein's monster and the cyborg as equivalent technosex fantasies, whereas Haraway placed them on different sides of her chart contrasting the logics of "white capitalist patriarchy" with those of "the informatics of domination".

Haraway's closely related later essay "Situated Knowledges" (1988; 1991) generously notes it was revised in relation to my doctoral work on the metaphorics of vision in scientific discovery. What she doesn't say was that again, I was articulating the kind of position and interpretation that she was critiquing and improving upon. In short, I was pre-Harawayan and Haraway was post-Sofoulis[2].

"The machine is us, our processes, an aspect of our embodiment." (180)

Eventually I found my way back to Haraway, via Latour et al.'s actor-network theory and especially Don Ihde's phenomenology of technology (Ihde, 1990), introduced to me by my (then) postgraduate, Ingrid Richardson (2003, 2007). Playing "Donna Down Under" had forced me to reengage with Haraway's work. I had arrived at the History of Consciousness program already interested in the mythic aspects of

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[1] All page references are to the version of 'A Cyborg Manifesto' in Haraway, 1991.

[2] Our disagreements were merely theoretical. Personally and professionally, Donna has been unfailingly conscientious, supportive, generous, inspiring and congenial.

high technologies but through Haraway became more intrigued by embodied relations with technologies, whether everyday domestic life, or, as I later explored, in encounters with interactive, electronic and installation artworks. This, coupled with my earlier interests in myth, technology and the pre-oedipal, led to the "Container Technologies" paper (Sofia, 2000), a pivotal point after which my concerns have centred on water infrastructures and interdisciplinary approaches to water management.

Ironic Epistemology

"Irony is about contradictions that do not resolve into larger wholes, even dialectically, about the tension of holding incompatible things together because both or all are necessary and true." (149)

Nowadays, the aspect of the Manifesto that most strongly resonates with me is its ironic epistemology. Haraway's approach helps me imagine a "knowledge ecology" as an alternative to the positivist fantasy of knowledge integration into a universal whole: a multiplicity of interacting knowledges, knowers and discourses, each with its own partial truths about the real world (Sofoulis, 2015b). This aspect is not uniquely Harawayan, but was co-extensive with the approach to knowledge cultivated in the History of Consciousness learning community. Group discussions conducted amongst former students held at the time of Haraway's retirement celebrations in 2011 revealed many felt this interdisciplinary program had equipped them with interest and skill at identifying and negotiating between different types of knowledges and epistemologies.

The Manifesto's opening paragraph announces its political intentions: to reinvigorate politics not by claiming an excluded identity, or fighting a hated enemy from *outside*, but by blaspheming—deploying irony—"humour and serious play"—from *within* where we find ourselves, including the all too serious strictures of US Christian, left and feminist political orthodoxies. The Manifesto aimed to replace political correctness with irony. As Hayden White, long-term head of the History of Consciousness program, had schooled us all, irony was the "Master Trope", valued above others because it does not insist on smoothing over difference and assimilating the unassimilable.

In this epistemological relativism, positivist and faith-based notions of a singular "reality" or "truth" are displaced by the knowledge ecosystem notion that every standpoint and mode of knowledge had its own partial truths to contribute to accounts of reality. This relativism (or irony) made Haraway, and post-modern theorists generally, targets of a counter-attack from advocates of positivist science and sociology in the so-called "culture wars" of the 1990s[3]. The idea that reality emerges in interactions between matter and meaning-making activity (call it scientific practice, hermeneutics or semiosis) scandalises those with faith in Baconian science and erodes the epistemological foundations of the (old) modern disciplinary divide between sciences and arts, facts and values. The positivists and hyperrationalists fear that abandon-ing sacred notions of singular truth and unified knowledge will enmire us in an amoral orgy of semiosis, an excessively generative textuality unmoored from material reality or truth. Such catastrophising is found in positivist-dominated fields like water resource management, where there are anxieties that abandoning one-size-fits-all, top-down, efficiency-driven solutions centred on notions of average individuals, and in-stead working with models of social and technical heterogeneity, will plunge us into chaotic randomness, where anything goes and no control or oversight is possible.

"[…] we risk lapsing into boundless difference and giving up on the confusing task of making partial, real connection. Some differences are playful; some are poles of world historical systems of domination. 'Epistemology' is about knowing the difference." (160-161)

Unfortunately, all too many of us on the cultural side of the culture wars revelled in the pleasures of semiosis and interpretive play, forgetting Haraway's exhortations about the need to take seriously our responsibilities for boundary construction and the metaphors we let loose in the world. We helped stoke

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[3] For example, both sides the Sokal affair directly involved History of Consciousness faculty members, and adversely affected Haraway, the program and its graduates.

positivists' fears that an excess of meaning-making would lead to meaninglessness. Unafraid of indulging in elaborate textual play herself, Haraway has often been received as a proponent or example of the "textual turn", when in fact her "material-semiotics" positioned her against it, and the Manifesto reaffirmed commitments to (a social constructionist version of) epistemological realism.

In the 30 years since the Manifesto was first published, notions of complexity have become more familiar and make Haraway's ironic epistemology more legible and relevant. The alternative to the hyper-rational positivist ordering of truth and knowledge is not undifferentiated randomness but an intelligent responsible facility to negotiate across different knowledges of complex entities and phenomena and determine which ones matter most to guide effective actions (Ang, 2011).

Cyborg vs Manifesto (Or: Metaphor vs Irony)

"At the centre of my ironic faith, my blasphemy, is the image of the cyborg." (149)

Most readings and quotes from the Cyborg Manifesto place much greater emphasis on the cyborg metaphor than on post-dualist, post-positivist ironic epistemology that it figures. Readers can hardly be blamed, as Haraway more or less sets it up that way, and the opening and closing pages on cyborgs are much more exciting and poetic than many of those that fill out the body of the essay. Even the CFP for this issue reflects this tendency. It starts out being about the 30th anniversary of the Manifesto, but ends up being about the Cyborg: "what are new feminist observations about it; did if fulfil its promise; do we still need it or myths like it?" So compelling is the cyborg as a metaphor—for example, of the utopian potential for subjects of/in the informatics of domination—that it overwhelms the tropic work of the Manifesto as irony or blasphemy, a non-innocent and reflexive epistemology that acknowledges both the relevance and the limits of different knowledges and standpoints, including its own.

The rarely discussed sections of the Manifesto that follow the opening description of the cyborg illustrate some of the real-world considerations for a late-twentieth century socialist feminist: the conditions of work in electronics factories that replicate international gendered/race/class divisions of labour; the claims of marginalised and non-dominant subjects (especially what Sandoval was calling "US Third World Women"); developments across a range of cultural forms (in this case, feminist science fiction of the 1970s-80s); current political struggles (e.g. in the mid-80s, a resurgent anti-nuclear movement).

I have read many theses and chapters and articles (almost all by first world women) rhapsodising on cyborg subjectivity and the technologies and media interfaces that enable it, but few seem to follow Haraway beyond the metaphor, the science and the technology and pay attention to a materialist, socialist and feminist analysis of the labour, resources and institutions involved in the production of those interfaces and technologies, let alone a reflexive analysis of their own situation. If there is a legacy of the *Manifesto*, as distinct from the *Cyborg* metaphor, I hope it might be to challenge us to ground our rhetorical/political speculations in a realistic and complex grasp of our own conditions of writing/knowing/living.

The Euphorics of Impurity

"Cyborg imagery can suggest a way out of the maze of dualisms in which we have explained our bodies and our tools to ourselves." (181)

For a creature that is supposedly outside of salvation history, it is ironic (in the Morissettian rather than Harawayan sense) how often the cyborg is regarded as a salvific figure. As Haraway hoped, the cyborg, with its euphorics of impurity and the non-innocent pleasures of the interface, has indeed rescued us from many of those nasty old enlightenment dualisms and dichotomies.

It's an exciting moment in a humanities postgraduate's journey when they make a leap from thinking in terms of simple opposites or dualisms, to appreciating how these dualisms construct (and/or deconstruct) each other, or a further expansion to some more complex post-dualistic standpoint. The cyborg figure facilitated those kind of conceptual leaps, preparing the way for other versions of socio-technical theory (such as actor-network theory, and more recently, practice theory) to gain a firmer foothold beyond

science studies, while providing an conceptual framework for a post-essentialist feminism. No wonder many an emergent scholar has fallen upon the cyborg as a figure that promises salvation or liberation.

The cyborg's liberatory post-dualist character makes it easy to equate it with other ambiguous figures, monsters, the abject, queerness, etc. etc. The cyborg metaphor was taken up as a feminist version of a Bakhtinian utopian semiotic fantasy that had been integral to the textual turn: that any figure which undoes, supercedes, or liberates us from categorical dualisms is somehow politically liberatory; that semiotic monstrosity equals political subversiveness. The Manifesto is not innocent of this fantasy, but it also touches on questions about political and epistemological responsibility: what kinds of knowledges about whose material lives and aspirations have input into formulating the metaphor? And what kind of political work do we want our cherished metaphors or monsters to perform? To whom and to what political and material realities are our rhetorical and political plays answerable?

Breaking the Metaphor Drought

"There is a myth system waiting to become a political language to ground one way of looking at science and technology and challenging the informatics of domination—in order to act potently." (181)

Colloquial Australian speech has no shortage of metaphors and similes—"flat out like a lizard drinking," "Dry as a dead dingo's donger," "Budgie smugglers," etc. But amongst the Australian intellectual elite we suffer a chronic metaphor drought, constantly recycling the few we have come up with ("a fair go," "the lucky country," "the fatal shore"), importing the rest from France or the US. Is there an element of cultural cringe in our preference for using outsourced metaphors as frameworks for interpreting other texts? Are we too lazy or unimaginative to stretch our imaginations and invent our own myths and metaphors? Could we blame our cultural context? Colonised during the Enlightenment, whose lands and peoples have been administered with ruthless and unsentimental pragmatism that allows about as much room for poetry as it does for compassion (that is, not much), our nation has valued technological innovation and sporting achievement far above social innovation and intellectual and artistic development.

No doubt the cyborg remains relevant as a metaphor for thinking about life in a post-dualistic, postmodern, informatised, hyper-mediatised globalised and messed up world. Even Frankenstein's monster continues to have resonance nearly 200 years later (*Rocky Horror Picture Show* being a case in point). The papers in this special edition indicate the continued relevance of Haraway's cyborg metaphor to contemporary early career researchers: whether as a source of terminology and concepts for interpreting technologically engaged feminist artworks (Aceves), an inspiration for making them (Helme), or even, as in Grant's nuanced exploration of the limits of the metaphor, a framework for an amputee's self-empowering new vision of her body and prosthesis. The ironic manifesto resonates with the anarcho-futurism of the accelerationists (Wilson) and investigations on the borders of art, science and the human microbiome (Bates). However, I'd suggest that what is most relevant about the Cyborg Manifesto today is not the cyborg figure but the kind of question to which it was posed as an ironic and blasphemous answer: what new myths and metaphors can help us frame our political languages and analyses of science of technology (and their associated conditions of production) in order to resist domination?

The cyborg was just one answer to that particular question of Haraway's. It is up to us to formulate our own questions about our contemporary situation and to invent metaphors that answer those questions, or at least help us ask better questions. It is not that any free-floating metaphor would do: consistent with Haraway's socialist feminist commitment is the demand that such figures have strong ties to analysis of social and material realities.

In my current reality some of the urgent questions concern a history of national and international impotency on coordinated responses to climate change, a disconnect between current ways of life and those geoscientists consider sustainable, and the widespread failure of Australian governments to protect land, rivers and aquifers and water from the depredations of foreign coal and coal seam gas miners, despite vociferous protests and unprecedented alliances between Greens and farmers.

These times call for their own metaphors. For example, in thinking about the temporality of the Anthropocene, and our current life in the unfolding climatic and environmental aftereffects of global resource exploitation, fossil fuel burning, habitat destruction, and loss of biodiversity, I have started to explore the zombie as a figure of "the aftermath": of life going on in an damaged and imperfect world, in damaged and imperfect bodies. And in view of the dislocation between many contemporary industrial, agricultural and resource management practices and the actual and sustainable carrying capacity of the planet, and calculations that we currently consume 1.5 Earths' output per year on Earth—estimated to rise to three Earths by 2030 without drastic reductions in resource consumption[4]—the figure of an extraterrestrial might well be an appropriate metaphor of those whose ways of life are not compatible with supporting biodiversity on this planet.

Science, Technology, Society, Policy: Some Questions

An ironic epistemology that can hold irresolvable contradictions in mind is not a luxury but a necessity when addressing contemporary issues around the social relations of science and technology in Australia. For example, there is urgent need to defend science research, universities, institutions like CSIRO and information channels like public broadcasters against huge budget cuts imposed by the climate-change denying, windmill-hating, coal-loving, and (thankfully) recently deposed Prime Minister Tony Abbott, whose successor has the challenge of restoring a twenty-first century orientation against the pull of such regressive views in his own party. In tension with this imperative to fight anti-science is the chronic longer term need to challenge the dominance of positivist approaches in policy-making across all fields from social policy, education, health and welfare through to economics, agriculture, industry, resource management.

The dominance of positivism is a legacy of a colony settled for social and commercial reasons as an exercise in rationalist terraforming during the height of Enlightenment optimism in science and technology (and before the Romantic reaction against industrialisation had kicked in). Neoliberalism (known here as 'economic rationalism') gave it an extra boost in the late 1980s-1990s, and was enshrined thereafter in the Productivity Commission (see Sofoulis, 2015a, p. 530 and *passim.*). With a seemingly inexhaustible supply of anonymous economics consultants, it evaluates and/or produces policy proposals according to neoliberal economics principles that put markets and economic efficiency as prime considerations and promulgate neo-positivist views of citizens as *homo economicus*, customers to be understood through behavioural economics and population statistics. Unfortunately, Australia has not yet seen fit to replace the Productivity Commission with a "Sustainability Commission", that would evaluate policy and development proposals with a view to the environmental and social considerations, not just economics.

Regular pronouncements by top scientists and research policy bodies address the urgent need to "integrate" humanities and social sciences with the scientific and technical knowledges that have so far failed to solve the complex and wicked problems of our time—many brought about (as Pope Francis has recently reminded us) through a combination of hypertrophied rationalism and a diminished care for the Earth in service of corporate greed to exploit it. But "integration" itself is a metaphor that implies a pre-existing and ongoing body into which some lesser body is assimilated. Where positivists dominate, this supposed "integration" often takes the form of a predatory act of "incorporation" where the richness of humanities and social sciences knowledge is ignored in favour of quantified social data that can be fed into the scientists' modelling software, disappearing without a trace or any discernable effect on the incorporating body (Sofoulis 2015b).

Most Australian scientists and engineers have no training in the history and philosophy of their disciplines and do not even know they are positivists: positivist scientific method is simply "method" to them. In the resource management field, so assured are many positivist scientists in the universal adequacy of their knowledge that they confidently define the parameters of social research, the questions to be asked, and what will count as evidence. One resultant fact of research life for many Australian qualitative

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[4] http://www.footprintnetwork.org/en/index.php/GFN/page/world_footprint/

social and cultural researchers in traditionally STEMM (Science, Technology, Engineering, Medicine, Maths)-dominated fields (including resource management, transport, health and medicine) is being obliged to add a large-scale questionnaire into the research design into order to satisfy STEMM experts and policy-makers who believe the only knowledge worth considering is quantitative, statistical, predictive and "objective", and who dismiss everything else as "subjective", anecdotal or a matter of values.

The political philosopher Boaventura de Sousa Santos warns of these tendencies to produce knowledge monocultures through "epistemological fascism" and he bemoans the "epistemicide" (Santos, 2009, p. 116) or loss of knowledge diversity that results when positivist science and its conventions of evidence and reporting take over most fields, to the exclusion of the unquantifiable insights, wisdom and problem-solving strategies that derive from interpretive and qualitative traditions (see also Sofoulis 2015b).

It is important to recognise how hard it is for positivist scientists to accept the validity other knowledges they have been taught to disparage. An epistemological relativist finds coming to terms with a different standpoint relatively easy, like a polytheist adding another god or goddess to a pantheon. But the positivist is more like a fundamentalist monotheist for whom accepting another deity is apostasy: it shatters their established identity. A Harawayan question here might be: what figures, metaphors or narratives could help (and are already helping) positivist scientists become post-positivists who are open to accepting other kinds of evidence and knowledges that can't be presented in statistical tables and charts? One key to this answer has to do with replacing positivist arrogance with post-positivist humility.

The metaphor of a knowledge ecosystem or knowledge ecology is posited as one alternative to positivist dominance and "integration". In a healthy knowledge ecosystem, predation and incorporation of less prestigious knowledges is not the only possible relationship. Different knowledges (and communities of knowers) can co-exist with each other in more cooperative and synergistic ways without needing to lose distinctiveness by being dissolved into the (pseudo-)universal epistemology of positivism.

A troubling feature of the relations between science, policy and society in Australia can be characterised by the metaphor of the eternal triangle, where classically A desires B who desires C, who desires A. In our tragic triangle, the people (A) look to governments (B) for leadership and decisive action on big issues like climate change, fossil fuel dependence and sustainability. In turn, the governments look to scientists (C) to tell them what to do, and seek to avoid political controversies by developing a series of technocratic processes that address the scientific issues (typically, environmental risks). But the positivist scientists have been trained to ignore the social and political contexts of their practice, and to think of themselves as disinterested and objective agents with no particular values or responsibility for how their knowledge is applied and used in politics and society. Having painted themselves into this corner all the scientists (C) can do is look to the people (A), and make arguments for democracy, participatory decision-making and public science education, on the grounds that if the public is more familiar with science (or the science on a particular topic) then it will elect politicians (B) who are favourable to science and will act on issues like climate change.

Meanwhile, between elections, the politicians press on. While drafting this piece, I heard both the federal environment minister Greg Hunt and the NSW premier Mike Baird express approval for a proposed massive expansion of the Shenua coal mine in prime agricultural land fed by sensitive aquifers on the Liverpool Plains. Hunt stressed they were already at stage 16 of a 17-stage technocratic process of scientific review, the final of which was state approval. Baird, whose government is stage 17, referred to the panels of scientific experts and the "smartest people" who had been brought into assess it and impose strict environmental conditions. "The science was in" he resignedly proclaimed, implying that despite being the premier of Australia's most populous state, as a non-scientist he was powerless to dispute their conclusions that the risks feared by farmers and environmental advocates were exaggerated. There was no acknowledgement of the incapacity of mining and hydrological scientists to research, report on, or make recommendations about the real source of controversy here: the clash of values between those who want to preserve the state's foodbowl and secure pure water for generations to come, versus those who want to extract and profit from 30 years worth of coal exports to China despite the potential risks. "The science" (which any actual scientist will tell you is never all "in") and technocratic procedures (such as environmental impact assessments) are being deferred to as excuses for government failures to deal with the politics of clashing values around coal versus land, food and water.

This situation leads me to wonder if more change couldn't be achieved faster if scientists acknowledge they did have values—such as in favour of biodiversity, human survival, and the desire to avoid catastrophic climate change—and could directly lobby and advocate for solutions that could be put to further debate, instead of relying on the public to elect representatives who might, fingers crossed, be more pro-science, and whose parties might permit them to publicly say so. Biologists and ecosystems scientists, it seems, are free to publicly express love for the critters and environments they study and want to help protect, but this freedom to be passionate does not seem to extend to physical scientists and engineers. A Harawayan question here has to do with further breakdowns in the old modern fact/values divide: how might positivists overcome their pretence that science is "value free," positionless and outside of politics, and to instead publicly align themselves/their work with advocates for action on climate change, fossil fuel reduction, environmental protection, and sustainable city and country lifestyles, livelihoods and infrastructures? What myths, stories and metaphors might enable this shift?

There is increasing and deserved attention to the exciting prospects for engaging ordinary people in a range of "citizen science" projects, typically involving low-level data gathering and sorting. But what we need more of are "scientist citizens" who are willing to acknowledge their role as members of society and use their elite knowledges responsibly and directly for social and environmental good. In the spirit of Haraway's Cyborg Manifesto, a complementary injunction for humanities and social science scholars and researchers could be to temper the unfettered pleasures of semiosis with judicious doses of materialism, by paying critical and honest attention to the material conditions—whether technical, economic, political, cultural, geographic or climatic—of our own knowledge, writing and art-making practices. No matter from which side we chip away at the crumbling divide between facts and values, humility about the limits of one's own knowledge paradigms, and willingness to appreciate the worthiness of others, are necessary for fostering epistemological diversity.

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