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Edited by Monique Rooney and Russell Smith



E P R E S S

Australian Humanities Review

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Editors' Introduction

Monique Rooney and Russell Smith

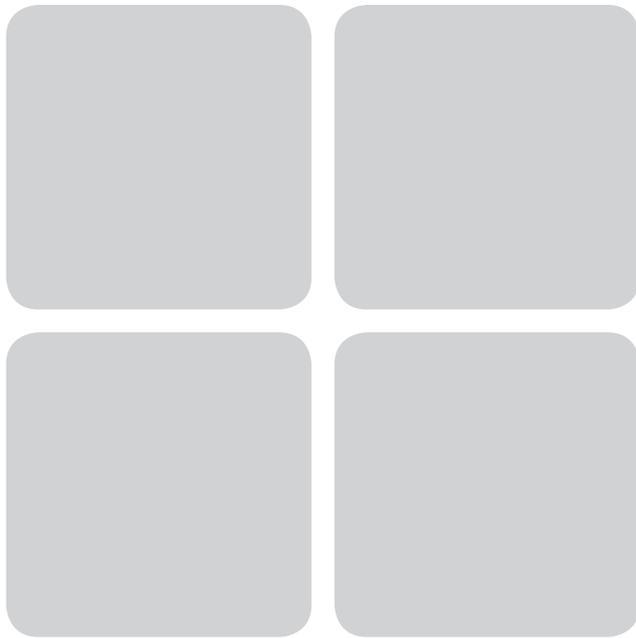
Welcome to the May 2009 issue of *Australian Humanities Review*. We lead off with Paul Genoni and Gaby Haddow's essay 'ERA and the Ranking of Humanities Journals', which follows up on Guy Redden's essay in *AHR* 45 to consider the implications of Australia's new quality benchmarking system (the ERA) for local humanities journals. In 'Romanticism, Modernity, and Virtual Reality: An Overview and Reconceptualisation of the Field', Peter Otto proposes that virtual reality be understood in a longer-range historical perspective that acknowledges the foundational importance of Romantic discourse and rhetoric for contemporary explorations of the tension between 'first-order' and 'second-order' versions of reality.

A special section on 'naturecultures' explores new approaches to the nature/culture and human/non-human divide. Inspired by Actor Network Theory and the work of philosophers and theorists such as Bruno Latour and Michel Serres, what links these diverse essays is an attempt to rethink ecology in such a way that non-human and even non-living entities can be reconceived as political actors in what Bruno Latour calls a 'parliament of things'. Gay Hawkins prompts us to reconsider the ubiquitous plastic bag, not simply as a passive object of moral condemnation, but as a complex material entity capable of diverse actions and interventions. Michael Dieter considers the Preemptive Media collective's AIR project as an example of a new kind of 'reticular' politics that engages people, technologies and environmental matter (in this case, particles of air pollutants) in a networked assembly that prompts us to reconsider political processes for representing 'matters of concern'. Emily Potter considers the metaphor of the ecological footprint, and how our habits of representation often fail to make room for the constantly emerging complexity of materiality. Finally, Zoë Sofoulis considers the anti-biological and anti-experiential legacy of 1970s feminism's 'social constructionist thesis', giving it a twenty-first century makeover using recent developments in disciplines such as evolutionary biology and systems theory.

In this issue we also farewell Libby Robin as the founding co-editor of the Ecological Humanities section of *AHR*, as she takes up an editorial role at the *Historical Records of Australian Science*, the journal of the Australian Academy of Science. As a researcher whose own areas of expertise straddle both science and humanities disciplines, Libby has played a key role in raising the profile of the ecological humanities, and she will continue to serve on the editorial board of *AHR*. Deborah Rose continues as co-editor of the Ecological Humanities, and

will be joined by Dr Thom van Dooren, a philosopher and interdisciplinary environment scholar currently based in the Transforming Cultures Research Centre at the University of Technology, Sydney (UTS). This issue features Val Plumwood's 'Nature in the Active Voice', the paper she was working on at the time of her death: a powerful rearticulation of her arguments for a rethink of both our scientific and our cultural framings of 'nature'. It is accompanied by three responses to Plumwood's broader body of work—from Thom van Dooren (environmental philosophy), Kate Rigby (literary ecocriticism) and Gerda Roelvink and J.K. Gibson-Graham (politics)—that reflect the cross-disciplinary nature of Plumwood's inspiration and influence.

The Book Reviews section begins with Simon Robb's epigrammatic response to Ross Gibson's enigmatic fictocritical novel *The Summer Exercises*. This is followed by reviews of three books on Indigenous themes: Robert Kenny responds to Martin Nakata's *Disciplining the Savages, Savaging the Disciplines*, Samantha Faulkner surveys the essay collection *Landscapes of Indigenous Performance*, while George Main assesses *Making Sense of Place*. Emily O'Gorman considers questions of water rights and water justice in the collection *Fresh Water: New Perspectives on Water in Australia*, while Ed Wright samples the linguistic treasures of *Stunned Mullets and Two-pot Screammers: A Dictionary of Australian Colloquialisms*.



ESSAYS

ERA and the Ranking of Australian Humanities Journals

Paul Genoni and Gaby Haddow

In *Australian Humanities Review* 45 Guy Redden draws upon his experience with the Research Assessment Exercise (RAE) in the UK to warn Australian researchers of various dangers posed by the implementation of similar methods of evaluation that may be introduced under the banner of Excellence in Research for Australia (ERA). Redden is concerned with the tendency of emerging forms of research evaluation to privilege a small number of 'high ranking' journals, and of the distorting effect this has on research communication as authors obsessively target these journals. This in turn results in research funding being concentrated on a small number of institutions and research units that are (predictably) assessed as high-achievers.

It is the intention of this paper to focus more closely on journal ranking as the mechanism that will be central to evaluation of Australian research. Although the link between research evaluation and journal ranking has been at the heart of recent developments in accountability for the Australian research sector, journal ranking has remained something of a dormant issue for Australian humanities researchers. Despite some dissatisfaction with aspects of the existing form of evaluation and reward—in particular the sense that the so called 'quantum' was designed with science-based models of scholarship in mind—humanities scholars have generally continued to research and publish secure in the knowledge that all refereed journal articles were rewarded equally. However, as research evaluation narrows in ways that focus reward on a small number of elite journals, then issues related to the ranking of journals will have far reaching implications for the manner in which humanities research is valued and rewarded.

It is apparent that journal ranking creates particular problems for the humanities. One of the critical issues is the ranking of 'local journals'—that is, journals with a local, regional or national focus and readership—in a system which is designed to establish international benchmarks for 'impact' or 'quality'. The purpose of this paper is therefore to investigate aspects of the journal ranking undertaken for ERA to date, with an emphasis on the ranking of Australian local journals.

Journal ranking

Although journal ranking is novel to many Australian researchers it has a lengthy history in information science as an aid to selecting journals for academic library

collections. The most established method of ranking depends upon using 'bibliometrics' to measure the volume and pattern of citations given to journals. The amount of citation is said to be an indicator of the *impact* of a journal within its discipline. The most frequently cited metric used in this regard is the Thomson Scientific Journal Impact Factor (JIF).¹

The concept of impact is important to understanding the challenges faced when ranking humanities journals. As most researchers understand, impact is essentially a measure of the times a typical article in a specified journal has been cited in a preceding assessment period (two years in the case of the JIF). While the JIF is widely used, it is a matter of considerable dispute as to exactly what the metric means with regard to a journal's status—in particular, the reliability of the JIF as an indicator of 'quality' as opposed to impact.

What is generally agreed is that the usefulness of the JIF and other citation-based metrics differ considerably between disciplines, and that they are of least value in the humanities. The reasons why this is the case have been long understood and discussed, and do not require repeating here in detail. Suffice to say, citation-based metrics are considered to have validity in the sciences, but far less so—to the point of being almost worthless—in the humanities, where citations are a substantially inferior predictor of either impact or quality. Indeed such is the lack of compatibility of the humanities with citation metrics that a meaningful JIF cannot be calculated for many humanities journals.

Given the recognised problems with the JIF (Bowman and Stergiou; Cameron; Monastersky) and the ongoing search for a metric that can be usefully applied in all disciplines, various other methods have been proposed for the ranking of journals. A number of these (for example, the journal diffusion factor; the *g*-index, and the *h*-index) are also based on citations. These 'new' measures have been the focus of a substantial amount of research which continues to indicate their inadequacy in reflecting scholarly communication in the humanities.

Another aspect of citation based evaluations causing concern is their bias in favour of English language journals published in North America and Western Europe. Journals originating in middle ranking countries in terms of research production—such as Australia—are demonstrably under-represented in the major citation indexes (Bordons, Fernandez and Gomez). This has led to a small body of research assessing the ranking of Australian journals (Butler), and Australian humanities and social science journals in particular (East; Genoni, Haddow and Dumbell; Haddow; Royle).

¹ Thomson Scientific acquired the citation databases from the Institute of Scientific Information (ISI), and therefore the Thomson Scientific JIF is still referred to on occasion as the ISI JIF. Thomson Scientific has recently been acquired by Reuters and this may lead to a new variation on the name. References in this paper to the JIF are therefore to the ISI/Thomson Scientific/Reuters JIF.

Ranking of local journals in Europe

Since its introduction in 1986 the RAE has used peer-review of individual articles as the preferred means of assessment. This article-by-article assessment has now succumbed due to the scale of the work, and the UK is revisiting the possible use of journal ranking as a means of evaluating research. This is one of a range of likely changes that will revamp the RAE in ways that will bring it closer to the Australian quantum in shifting from an outputs focus to a broader assessment of research quality. A 2006 report prepared for the Arts and Humanities Research Council (AHRC) and the Higher Education Funding Council for England (HEFCE) nominated 'significantly lighter-touch peer review and greater use of metrical data' (8) as the way forward for the RAE.

The issue of 'lighter-touch peer review' was taken up in a subsequent British Academy report (2007). This report discussed the reasons why citation metrics are flawed when applied to the social sciences and humanities, although it suggested they should nonetheless form *part* of the future research assessment. The report introduced the possibility of subjective journal ranking as a supplement to citation metrics, and discussed the widely cited attempt to do so by the European Science Foundation (ESF).

The ESF was concerned about the outcome for humanities of an over-reliance on citation metrics for journal ranking. They noted that citation-based assessment would severely disadvantage smaller journals, which were nonetheless essential to communicating research with a local, regional or national focus. The important development in the ESF method is that journals are not 'ranked' by impact or quality, but rather categorised using a third principle based on a journal's 'profile'. The ESF described the categories as being 'determined by a combination of characteristics related to scope and audience'.

Journals have different profiles, and their scope of audience and field vary. Papers in journals with wide international prestige are not automatically of higher quality than papers in journals which are known and read only in a very specialised field. Similarly, a paper published in the native language in a journal which has only local importance can lead to a strong impact for a certain type of research. (European Science Foundation)

In 2007 the ESF produced the European Reference Index for the Humanities (ERIH), which used discipline experts to categorise humanities journals from fifteen subject areas. The ERIH categorised journals as A, B or C.

A: high ranking international publications with a very strong reputation among researchers of the field in different countries, regularly cited all over the world.

B: standard international publications with a good reputation among researchers of the field in different countries.

C: research journals with an important local/regional significance in Europe, occasionally cited outside the publishing country though their main target group is the domestic academic community.

It can be argued that these descriptions, with their reference to reputation and citation, invoke both subjective and metric-driven forms of evaluation, although it should be noted that the methodology for categorising journals does not include specified citation metrics.

Despite the ESF's attempt to reconceptualise the ranking of humanities journals, the ERIH attracted a substantially adverse response (Gorman; Howard). It was argued that devising categories in this way remains antithetical to the process of humanities scholarly communication, and that it 'creates the hierarchies it claims only to be describing' (Howard). Critics also point out that despite the claim that the categories indicate 'scope and audience' they will inevitably be used as a guide to quality, thereby directing the flow of papers away from the local journals in category C.

The British Academy report was critical of the methodology employed by the ESF, concluding that 'the ERIH does not at present represent a viable way in which summary measures of peer reviewed publications can be constructed' (35). The report recommended that further development should be undertaken on metrics that 'reflect the distinctive nature of the humanities and social science research', and that the HEFCE 'explore whether there is scope to modify the Thomson Scientific indices to accommodate the special features of humanities and social science research' (35). The report concluded that, 'metrics should remain an adjunct to the research assessment (RAE) panel peer review process rather than a substitute' (35).

The lack of acceptance of the ERIH process means that questions regarding the best means for ranking or categorising humanities journals are unresolved. On one hand there is widespread scepticism regarding the available citation-based metrics, and little understanding of how they might be modified in such a way that they are suitable to the humanities. On the other hand, there is a seemingly failed attempt in the ERIH to devise a method that categorises journals in a manner that acknowledges that many humanities titles—in particular local journals—will be severely disadvantaged by the use of international benchmarks of either impact or quality.

Journal ranking in Australia: the policy

As it became clear that journal ranking would be part of research evaluation in Australia commentators interested in humanities and social science research

expressed their concern. The most substantial report leading up to this period was produced for the Social Sciences and Humanities Research Council of Canada in 2004 (Archambault and Gagne) and highlighted the problems these disciplines faced if required to use citation-based ranking. This conclusion was echoed by Australian commentators, with Claire Donovan of the Research Evaluation and Policy Project of the Australian National University warning in 2005 that:

any policy move to amplify the importance of citation-based indicators will place HASS [Humanities and Social Science] research at a disadvantage, a concern now elaborated further using insights gained from the specialist bibliometrics literature on citation indicators. (17)

And in 2006 Steele, Butler and Kingsley concluded that:

Thomson Scientific bibliometrics can still be powerful tools to supplement peer-review in certain science disciplines. The same cannot be said for the social sciences and humanities. (281)

Probably influenced by these arguments the Australian Research Council (ARC) Consultation Paper on the proposed form of ERA issued in June 2008 made it clear that although journal ranking was to be an integral part of research evaluation, it would not be metric driven. The 'overall criterion' to be used in determining a journal's rank was described as the 'quality of the papers'. What ERA has in common with the ERIH therefore is a rejection of metrics as the *primary* means by which the rankings are determined, but unlike the ERIH, there is no suggestion that ERA ranking is anything other than a hierarchy determined by quality.

Four 'tiers' have been instituted for ERA ranking, with each tier incorporating an approximate percentage of the titles within a discipline. These are A* (top 5%); A (next 15%); B (next 30%); and C (next 50%).

What is notable are the descriptions of the characteristics of journals in each of the tiers. In the absence of a specified process for journal ranking, or of designated metrics, these descriptions are the sole guide to the ranking process. A* journals are described in the following terms:

Typically an A* journal would be one of the best in its field or subfield in which to publish and would typically cover the entire field/subfield. Virtually all papers they publish will be of a very high quality. These are journals where most of the work is important (it will really shape the field) and where researchers boast about getting accepted. Acceptance rates would typically be low and the editorial board would be dominated by field leaders, including many from top institutions.

The emphasis on quality ('one of the best'; 'of very high quality') is apparent. This appears to assist the humanities in that the requirements for an A* journal

includes no reference to the troubling citation metrics. Conversely, however, this description of the A* tier indicates the advantage of a metrical component, in that in their absence evaluation becomes largely (or even entirely) subjective. Those responsible for the ranking have little or no guidance in determining what constitutes a measure of 'virtually all papers'; or a 'low' acceptance rate (such figures are often unavailable); or 'field leaders', or 'top institutions'.

The reference to journals where 'researchers boast about getting accepted' is also a subjective oddity. Not only because the thresholds required to induce boasting vary substantially between individuals, but because it highlights one of the criticisms made of the ERIH rankings. That is, ranking creates damaging divisions by assigning journals to 'artificial' tiers. Whereas previously authors may well have been satisfied (indeed proud) to have their work included in a peer-reviewed, well-regarded title, selected for its particular (local) focus and audience, they are now told that they have little to 'boast about' unless they are published in A* titles.

Some of the same problems are apparent in the description of the characteristics of Tier A journals.

The majority of papers in a Tier A journal will be of very high quality. Publishing in an A journal would enhance the author's standing, showing they have real engagement with the global research community and that they have something to say about problems of some significance. Typical signs of an A journal are lowish acceptance rates and an editorial board which includes a reasonable fraction of well known researchers from top institutions.

In this case inclusion of the phrase 'would enhance an author's standing', suggests that publishing in any of the 80% of more lowly ranked journals may be of no benefit or perhaps even detrimental to an author's reputation—a judgment made not on the basis of the quality of his/her article, but on a perception of where a journal sits in the artificially constructed hierarchy.

The reference to having 'real engagement with the global research community' is also odd, in that it implies that articles appearing in 'lesser' journals have no such 'engagement'. It should, however, be self-evidently difficult for work to be accepted in any refereed journal (irrespective of its tier) without the author demonstrating familiarity with international scholarship.

Those engaged in ranking are again faced with subjective assessments; in this case trying to ascertain what constitutes a 'reasonable fraction' and 'problems of some significance', and the need to distinguish between 'low' (A*) and 'lowish' (A) acceptance rates; and between 'field leaders' (A*) and 'well known researchers' (A).

The description of the Tier B journals indicates additional problems in constructing hierarchies of quality, and in doing so raises the issue of local ('regional') journals.

Tier B covers journals with a solid, though not outstanding, reputation. Generally, in a Tier B journal, one would expect only a few papers of very high quality. They are often important outlets for the work of PhD students and early career researchers. Typical examples would be regional journals with high acceptance rates, and editorial boards that have few leading researchers from top international institutions.

This description includes the concession that journals ranked as B *will* include articles that are of the same 'very high quality' as those found at tiers A* and A. In the absence of individual assessment, however, articles in Tier B journals will nonetheless be designated to be worthy of substantially less reward than those appearing in 'better' journals.

The reference to Tier B journals serving as 'important outlets for the work of PhD students and early career researchers' is also puzzling. These authors are free to submit their work to any journal irrespective of its ranking, and many achieve publication in the most prestigious journals in their field. The implication in the description is that some journals have an almost designated role in 'training' researchers for publication in better journals.

A potentially troubling element of the description of Tier B journals from a humanities perspective is the reference to 'regional journals'. This problem arises because what constitutes a regional/local journal will differ significantly between disciplines. Whereas the term may have pejorative connotations for a science journal, this is far less likely to be the case for humanities titles. The international basis of most science disciplines suggests that authors should be seeking an international readership, and local journals (insofar as they exist) may by implication be outlets for minor work. In many humanities and social science disciplines, however, the nationally or regionally bounded areas of study mean that the readership of many journals will also be localised, and that journals servicing these disciplines will have limited international distribution. This critically impacts upon the prospects of these journals being ranked above B. This issue of local journals will be discussed further below in relation to Australian literature.

Finally, it should be noted that the very brief description of Tier C is in the form of a description of what these journals don't have—the features of the journals in Tiers A*, A and B—rather than what they do.

Tier C includes quality, peer reviewed, journals that do not meet the criteria of the higher tiers.

It is, however, difficult to see how Tier C titles represent 'quality' if they don't meet the requirements of A*, A or B journals. That is, the titles in Tier C are apparently journals in which articles don't demonstrate engagement with international research; don't deal with significant problems; are of a lower standard than that expected of early career researchers and postgraduates; do not shape their fields; and will not enhance an author's reputation. It should be remembered that Tier C accounts for 50% of titles published in each discipline!

Therefore while the ARC can be seen to be attempting to accommodate the humanities by rejecting a metrics-driven assessment of impact, the attempt to devise meaningful descriptions of quality is also problematic. As with the ERIH, the ERA tier descriptions include elements of impact, quality and journal type, and in doing so reveal the largely subjective and contingent nature of the ranking enterprise.

The shift away from a metrics approach is not the only way in which ERA might be seen to be accommodating disciplinary differences. The ARC has also established an Indicators Development Group (IDG), tasked with devising 'discipline-specific indicators, including metrics and other proxies of quality and activity'. In an acknowledgement of the particular problems faced by the humanities, the IDG appointed a Humanities Sub-committee and a Creative Arts Sub-committee.

An important development, incorporating the work of the IDG, was the December 2008 release of the *ERA Indicator Principles* and the *ERA Indicator Descriptors*. These documents clarify a number of issues regarding ERA's attempt to ensure that research evaluation is responsive to disciplinary differences. The *Principles* document states that in addition to journal ranking, assessment of outputs will include citation analysis, and peer review of articles in cases where there is an 'insufficient number of valid quantitative indicators to provide a reliable evaluation of research quality' (ARC *Principles*, 5). The ARC stress that these methods—including the 'field-normalised' citation metrics—have been devised to be sensitive to the needs of disciplines:

In developing the Principles, it is recognised that there are a wide range of discipline-specific behaviours and norms, and also that no single indicator could necessarily be applied across all disciplines. (ARC *Principles*, 1)

The use of metrics will be integral to the citation analysis, but not prescribed as an element of the journal ranking. What role (if any) citation metrics *might* play in ranking will be a decision made by the discipline-based bodies who undertake the task.

Journal ranking in Australia: the process

What is notably absent from the *ERA Indicator Principles* and the *ERA Indicator Descriptors* are details regarding the manner in which the journal ranking will be (or was) undertaken. The initial journal ranking exercise in Australia was conducted during 2008. The task was devolved to the four learned academies and a number of disciplinary peak bodies, with at least 27 organisations being engaged in the task (*ARC Consultation*). It is apparent from the available evidence that these organisations handled the task very differently.

For example the Computing Research and Education Association of Australasia (CORE) proceeded with an emphasis on metrics, using both the standard Thomson JIF and an amended metric referred to as the REPP (Research Evaluation and Policy Project) impact factor. The CORE process was managed by a ranking committee, with the assistance of 'rankings from various Australian universities, from sections of the ICT community such as IS and from individual subdiscipline experts'.

The Australian Association for Research in Education (AARE) took a very different approach due to the poor coverage and inappropriateness of citation metrics for their discipline.

Whereas some fields of study (notably science, engineering and medicine) are well served by citation indexes, education is not. But even if it were, academic citation would be inadequate in 'practical' fields such as education, engineering and business. Although academic excellence of journal content is highly valued, in these fields research and publication are intended, ultimately, to benefit professional practice. (AARE)

The AARE instead undertook a subjective assessment of quality. They adopted a qualified concept of 'quality' that privileges the needs of practitioners over 'academic excellence'. Members of the AARE were asked to complete a survey which collected respondents' opinions on the '10 best journals'; 'Journals you publish in or read'; and 'Journals that impact on policy or professional practice' (AARE). The concept of 'impact' is therefore retained, but only in so far as it affects 'policy or professional practice'.

The Australian Political Studies Association (APSA) devised 'a four-step process'. This included provisional ranking by a 'small panel'; invited response to this provisional list from APSA members; collation and adjudication of responses by the panel; and final revision by the Association's national office. The APSA relied upon a qualified use of citation metrics to inform this process, noting that:

we follow the science disciplines which are ranking their journals on this basis. There is one important difference. The sciences rely heavily on the impact factor. The social sciences and humanities cannot rely on impact factors to the same extent because ISI coverage is incomplete or

non-existent. So, the judgement of the APSA panel which played a greater role in the final rankings and journal reputation in the political science community was an important factor. (Hamilton and Rhodes)

What can be concluded from the experience of CORE, AARE and APSA is that, in the absence of a standard process, disciplines will adopt a method for journal ranking that is suited to their own research culture. They may approach the task as an assessment of either 'impact' or 'quality', and they will use metrics in accordance with their perceived relevance.

Although bodies such as CORE, AARE and APSA have made their ranking process transparent, this is not a requirement. Knowledge about how the task of ranking was undertaken by other disciplines is generally lacking. This information would be valuable not only in terms of ensuring accountability, but because journal ranking is a new process to many disciplines and they will benefit by learning about the various methods used for accessing impact and/or quality. For a number of disciplines the ERA process has produced an outcome, but with little knowledge by stakeholders of the process, organisations or individuals involved.

Ranking humanities journals: the case of Australian literature

One important matter raised by the ERIH experience, and that has been little addressed by ERA, is that of the status of 'local' journals. As discussed, this issue is critical in the humanities and social sciences, as regional or national studies frequently form the basis of sub-disciplines with journals meeting the needs of a local readership. It is extremely difficult to assess such journals by their international standing or impact, as it will inevitably be low. Clearly, however, these local journals can be core within their sub-field of regional studies, within which they will have established their own hierarchy of quality.

The APSA report on the ranking of politics journals raises concerns about the way in which Australian journals of considerable importance to local political scientists fare in a process which attempts to establish international benchmarks of quality. APSA record that they undertook 'rankings not weighted for or against local journals', but they also note the problems this creates for local authors when highly-ranked international journals are not interested in publishing research on Australian politics.

The practice of applying international benchmarks has been criticised from within other disciplines. In his commentary on the preliminary ERA ranking of law journals David Hamer notes the underrepresentation of Australian titles in the upper tiers. Hamer argues that the explanation is that 'the ARC's bibliometrics have a strong built-in bias in favour of US law journals'. He suggests that a citation-based assessment was the sole method used, and that if allowed to stand

the results have the potential to dilute Australian legal research and even lead to a 'drain' of researchers to North America. Hamer argues for a revised, subjective ranking process that would privilege Australian journals based on their essential contribution to national jurisprudence.

As noted, the only acknowledgement of local journals within the ERA tier descriptions is the reference to 'typical' inclusions in Tier B being 'regional journals with high acceptance rates'. This raises the possibility that in the absence of more detailed guidelines on the status of local journals Tier B will likely become the default ranking for these titles.

The issue *may* also be raised somewhat obliquely in the *ERA Indicators Descriptors* with the instruction that:

The quality rating is defined in terms of how it compares with other journals and should not be confused with its relevance or importance to a particular FoR. (4)

This *seems* to imply that local journals should be subjected to comparison with international journals without consideration of their crucial function in supporting national scholarship. As noted by the APSA report and argued by Hamer, for ERA to insist that local journals have no particular status could have dire consequences for the viability of local journals, research and careers.

What appears to be the case thus far is that whereas some disciplines have strictly applied international benchmarks to the task, others have weighted the process in order to favour local journals. We can glean something of the way in which local journals have been favoured positively in some disciplines by considering the case of Australian literature titles. As there may be some uncertainty as to what constitutes a journal on 'Australian literature', eleven titles have been culled from the response submitted to the ERA rankings by the Association for the Study of Australian Literature (ASAL) under the headings 'Australian Literature' (nine titles), and Australian journals included under the heading 'Postcolonial literature' (two titles). These are all titles that have been ranked by ERA, and with one exception (*Kunapipi*) have 2005 (Literature) as the designated Field of Research (FoR). All of the journals are published in Australia with the exception of *Antipodes*, which is the journal of the American Association of Australian Literary Studies.

It should be noted that ASAL was not consulted in the creation of the initial ranking of literature journals. Indeed it is not clear which organisations or individuals were responsible or what process was followed in ranking literature journals, as there are no obviously relevant peak bodies amongst the 27 that were apparently consulted. This once again points to a lack of transparency in the ERA ranking process.

Table 1 lists the eleven Australian literature journals, together with citation metrics from the three most commonly cited sources. These are the large citation databases Thomson’s Web of Science (source of the JIF); Elsevier’s Scopus; and Google Scholar (as harvested by the *Publish or Perish* website: see Harzing). In each case the metric reported is the number of citations received by the journal for 2001-2006, a period of time equivalent to that which will be used in the first round of the ERA evaluation.

Also included in Table 1 is the ERA tier allocated to each journal, and the proposed tier suggested by ASAL in their response to the ERA ranking.²

Table 1: Australian Literature journals citation statistics and rankings

Journal	Web of Science	Scopus	Google Scholar	ERA tier	ASAL proposed
Antipodes	11	0	11	B	A
Australian Literary Studies	32	3	52	A*	A*
HEAT	5	0	0	B	A
JASAL	3	2	12	A	A
Kunapipi	17	4	42	B	B
LINQ	0	0	0	B	B
Meanjin	51	24	111	B	B
New Literatures Review	0	4	0	B	B
Overland	70	23	109	B	B
Southerly	10	3	5	B	A
Westerly	9	2	10	B	A

What is apparent from the citation data is the extent to which the three sources differ. This is largely explained by the scope of their coverage. Scopus is known to have poor coverage of the humanities and this is reflected in consistently low citation counts. Google Scholar (*Publish or Perish*) generally reports the highest number of citations for humanities and social science articles due to its better coverage of non-journal literature such as conference papers, edited collections and institutional repositories. It could be argued that Google Scholar provides the most accurate reporting for humanities in that its coverage includes the ‘grey literature’ that is important to these disciplines. However, critics have drawn attention to Google Scholar’s inability to prevent citations being ‘double-counted’ when they appear in several versions of the same article (for example a conference paper which also appears in a journal) (Harzing and van der Wal; Jasco).

It is clear that there is little correlation between the citation metrics and the ERA rankings. The single A* journal (*Australian Literary Studies*) is the third most frequently cited, while the single A journal (*JASAL*) is quite lightly cited. The two most frequently cited journals, *Meanjin* and *Overland*, are both ranked in Tier B. In part these results can be explained by the nature of the journals. Whereas both *Australian Literary Studies* and *JASAL* are outlets for ‘traditional’

² The final journals rankings for the Humanities and Creative Arts cluster were due in March 2009.

academic literary scholarship, *Meanjin* and *Overland* have a somewhat different remit, including not only literary criticism, but also creative writing, and social and political commentary and opinion. These latter categories create problems with regard to peer-reviewing, in that it is difficult to ‘referee’ creative material or opinion pieces in the same way as traditional academic research. For this reason the academic status of these journals may have been questioned in the ranking process. There is, however, no doubt that *Southerly* (established 1939), *Meanjin* (1940), *Overland* (1954) and *Westerly* (1956) are not only long established, but have reputations for delivering high quality academic and creative writing.

What is most striking about the rankings is that none of these Australian journals has been placed in Tier C, despite the expectation that 50% of journals within each of the broad disciplinary groupings will fall within this tier. This is a *very* strong indication that those charged with ranking these journals have taken into account their significance within the context of a national scholarly discourse. Notwithstanding that the task is to rank journals according to criteria of quality using international benchmarks, there is nonetheless an ‘inbuilt’ recognition of the crucial role Australian journals play for their national audience. These results also suggest that the reference in the description of Tier B to ‘regional journals’ has indeed resulted in this being the default for these titles.

This ‘distortion’ is apparent in Table 2, which compares the ERA results for the eleven journals listed in Table 1 and the result achieved for the FoR overall (i.e. all Australian and non-Australian titles) within the ERA guidelines.

Table 2: Australian Literature journals ranking distributions

	A* %	A %	B %	C %
ERA guidelines	5	15	30	50
ERA ranking, all literature journals	9.9	14.4	23.9	51.8
ERA ranking, Australian literature journals	9.1	9.1	81.8	0
ASAL, proposed Australian literature journals	9.1	45.4	45.4	0

The preliminary rankings for ‘all journals’ reflects the recommended ratios for each tier in the ERA guidelines (although there are notably more A* journals). The ERA rankings for the Australian literature journals, however, produces a very different result, in that *none* of these journals are ranked in Tier C as opposed to the expectation that 50% will fall within this category. Somewhat paradoxically then—given the preference for ‘quality’ rather than ‘impact’ to rank humanities journals—this result can be read as a reflection of the ‘impact’ these journals have in contributing to localised scholarship, rather than being a reflection of their innate ‘quality’.

Table 2 also includes the adjusted figures that would result if the ASAL recommendation for the ranking of these journals was implemented. It can be seen that the deviation from the ‘norm’ is even greater, with four journals moved ‘up’ from B to A, and none relegated. This results in 54.5% of journals ranked

as A* or A. The ASAL recommendations reflect the opinion of the user group for these local journals, and are further testimony to their importance to national scholarship.

Conclusion

There are good arguments that can be made to suggest that ranking of journals, particularly in the humanities, is a futile pursuit. Not only is it likely to produce questionable results in terms of the accuracy of the hierarchy it constructs, but also—as Redden and others have argued—it may lead to undesirable outcomes by inducing authors to seek publication in journals that are sub-optimal in terms of communicating with a specific audience, while threatening the existence of the bulk of B and C journals that depend upon a regular flow of quality submissions. These ramifications will be felt most keenly in disciplines that depend on local journals, and in middle-ranking research nations where there is an incentive to ‘export’ research publishing to leading international journals. In other words: the humanities in Australia. Scholarly communication is a complex and finely-tuned system, and the imposition of mechanistic forms of control (in the case of ERA through artificially-constructed hierarchies that fail to reflect the nexus between humanities scholarship and a local readership) may easily upset its optimal functioning.

Despite the attempts by the ARC to accommodate the humanities in its approach to journal ranking, the results have nonetheless met with criticism from the sector. In a submission to ERA responding to the preliminary rankings, the Deans of Arts, Social Sciences and Humanities (DASSH) argued that irrespective of the method used, the very concept of ranking continued to be problematic.

DASSH welcomes discussion and research into methods for determining academic quality and benchmarking. Journal ranking for this purpose is not yet as well developed for the Arts, Social Sciences and Humanities (ASSH) as for the natural sciences and engineering. It is of concern to DASSH that the ARC should be using this underdeveloped tool. (1)

In addition to complaints made about the preliminary ERA rankings on behalf of the humanities generally (Byron), attacks have also been mounted on behalf of particular disciplines, including mathematics (Trounson); French studies (Hainge); philosophy (Academics Australia); and law (Hamer). Despite these objections—which focus on both the concept of journal ranking and on specific outcomes—there is, from the humanities point of view, *some* cause for optimism regarding the way in which ERA has progressed. At the very least, the combination of non-metric driven tier descriptions combined with rankings determined by disciplinary peak-bodies based on their assessment of appropriate indicators suggests that the ARC has heeded advice given from within the humanities and social sciences. But while ERA has dispelled fears that journal

ranking would simply be driven by citation metrics, it has not as yet resolved other issues with regard to the challenges faced in ranking humanities journals.

The immediate need for the humanities is for a means to be devised for treating Australian local journals equitably and consistently within the ranking framework. This should be done in a manner which acknowledges that assessments regarding the impact *and* quality of these journals are determined by the contribution they make in the context of local, regional or national scholarship.

The desired outcome can be achieved by revising the ERA tier descriptions in such a way that they articulate the critical role played by local journals, and by the Humanities Sub-Committee of the IDG developing detailed guidelines for the consistent treatment of local journals.

Addendum (2 April 2009)³

The final ERA journal rankings for Cluster 2, Humanities and Creative Arts, were released in late March, after the completion of the article above. This brief addendum to the article will ignore some of the larger issues flowing from the revised list—which will take some time to absorb—and focus on the particular case of the Australian literature titles.

There were a number of changes from the draft ranking, with six of the eleven journals having their ranking amended. Three journals (*HEAT*, *Meanjin* and *Southerly*) had their ranking improved; and three (*JASAL*, *Kunapipi* and *LINQ*) had their ranking reduced. The big ‘winner’ from the revisions was *HEAT*, which had its ranking increased from B to A*.

Table 3 summarises the various changes, and also includes again the ASAL proposed rankings.

It is relevant to note that the ASAL proposed ranking and the ERA final tier ranking coincide on only four of the eleven titles. Of the four changes to the draft rankings recommended by ASAL only one (*Southerly*) is reflected in the final rankings. In addition four journals (*JASAL*, *Kunapipi*, *LINQ*, *Meanjin*) have had their final rankings amended when the ASAL recommendation had been that the draft ranking should remain. Whatever process has been followed in moving from the draft tier rankings to the final tier rankings, it is clear that the ASAL input has not been influential.

³ Editor’s note (8 April 2009): Shortly after their release, the revised ERA journal rankings for Humanities and the Creative Arts (HCA) were withdrawn from the ARC website, with the following note:

Please note: The ARC is aware of issues with the HCA lists, and as such it [*sic*] is currently unavailable. The ARC is investigating the problems and will replace the lists as soon as possible.

Please check the ARC website at <http://www.arc.gov.au/era/journal_list.htm> for updates.

Table 3: Australian literature journals, draft and revised ERA rankings

Journal	ERA draft tier	ASAL proposed	ERA final tier
Antipodes	B	A	B
Australian Literary Studies	A*	A*	A*
HEAT	B	A	A*
JASAL	A	A	B
Kunapipi	B	B	C
LINQ	B	B	C
Meanjin	B	B	A
New Literatures Review	B	B	B
Overland	B	B	B
Southerly	B	A	A
Westerly	B	A	B

The other changes that have been made in the final version are in the FoR allocation. *HEAT* is now allocated an FoR of 1904 (Performing Arts and Creative Writing), and *Kunapipi* has now been allocated 2005 (Literature). A number of the other journals (*JASAL*, *Meanjin*, *Overland*, *Southerly*, and *Westerly*) are now allocated a joint 1904/ 2005. It is possible the changes of FoR have influenced changes in the tier rankings, particularly in the case of *HEAT* which is now better positioned to reflect its role in publishing creative writing. In the absence of an explanation, however, there can only be speculation. It is worth noting in passing that the FoR allocations can be erratic, even spectacularly nonsensical, with both *UTS Law Review* and *History of Psychiatry* receiving an FoR of 2005.

It is not easy, however, to learn much about the logic behind the revisions simply by studying the outcomes. The relegated *LINQ* certainly fits into the category of a local journal, with its focus on literature from northern Queensland/Australia, and an editorial team largely drawn from James Cook University. *Kunapipi* is anything but local, a journal of international postcolonial writing with an international authorship and editorial board, but which may suffer from its association with a regional university (Wollongong).

What *LINQ* and *Kunapipi* have in common is that while they may be 'small' journals in terms of circulation, they are seriously 'academic' journals with a focus on literary scholarship. As noted in the preceding paper, this makes them unlike several of the journals now ranked above them, which have a remit to attract a wider non-subscription based readership, and therefore include a component of opinion, commentary and creative writing, all of which might be considered 'non-scholarly' content.

It is also worth briefly noting the quite different outcomes for *Australian Literary Studies* (A*) and *JASAL* (B). If there are two journals on this small list that might be compared it is these two. They share a similar purpose in providing outlets for interpretive scholarship relating to all aspects of Australian literature. Neither includes creative writing. They are both fully refereed and have distinguished

international editorial boards. They both draw their authors from the same pool of established and emerging Australian (and some international) scholars. On an objective assessment they seem to be demonstrably of a similar 'quality', with the seniority of *Australian Literary Studies* seemingly acknowledged in the draft rankings (A* for *Australian Literary Studies* and A for *JASAL*). The relegation of *JASAL* to tier B now creates a significant—and spurious—divide between these two journals to the point where the flow of papers will inevitably be distorted in a way that is detrimental to editors, authors and the discipline as a whole.

It is difficult to draw any safe conclusions from the final rankings as to what constitutes 'quality' in the ERA ranking process for Australian literature journals. Without far more comprehensive information regarding the logic by which the tiers have been determined (other than the inadequate tier descriptions) editors and authors alike are left wondering.

This puts those journals that wish to improve their ranking in an extraordinarily difficult position. To do so may inevitably compromise features of the journal that have been valued by contributors and readers. On the other hand, deciding *not* to play the ranking 'game' will have consequences for the sustainability of journals, as authors—and indeed editors—choose to pursue the rewards associated with more highly ranked journals. In the current environment, however, editors seeking a higher ranking for their journal do so with inadequate information regarding exactly what constitutes the vision of quality to which they should be aspiring.

The final ERA rankings for Cluster 2 do nothing to dispel the concern felt within the humanities about the concept of journal ranking, and only add to the urgent need for greatly improved clarity and accountability in the process.

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Romanticism, Modernity, and Virtual Reality: An Overview and Reconceptualisation of the Field

Peter Otto

Virtual reality is one of the most prominent of the terms used to describe the postmodern world. In the last two decades, there has been discussion of virtual communities, virtual politics, virtual identities, and even virtual realism. Already in 1995 Jean Baudrillard, in an article entitled 'The Virtual Illusion', reported 'the transformation of life itself, of everyday life, into virtual reality' (107). Despite its contemporary valence there is no extended history of the term and no agreement on how the phenomena it names should be understood. Yet, as Katherine Hayles observes in *How we became Postmodern*, we must 'understand the complex interplays that went into creating the condition of virtuality' if we are 'to demystify our progress towards virtuality and see it as the result of historically specific negotiations rather than ... technological determinism' (18). In the following pages I argue that the roles played by virtual reality in contemporary culture are to a surprising degree anticipated and conditioned by developments in the late-eighteenth and early-nineteenth century.¹

Discussions of 'virtual reality', a term coined by Jaron Lanier in 1986 (Heim 32), initially focussed on the technology that supports it. Kreuger writes, for example, that virtual reality 'typically refers to three-dimensional realities implemented with stereo viewing goggles and reality gloves' (xiii). The problem with definitions such as these is that, by linking virtual reality to 'cutting-edge' technologies, they confine virtual reality to the present and so preclude attempts to compare digital virtual-realities with those constructed in other eras and with other media.

In an attempt to broaden the study of virtual reality, Steuer argued in 1992 that it should be defined 'as a particular type of experience, rather than as a collection of hardware' (74). The key to this experience is presence, 'defined as the sense of being in an environment'. 'In unmediated perception, presence is taken for granted. However, when perception is mediated by a communication technology' one perceives both 'environments simultaneously: the physical environment in which one is actually present and the environment presented via the medium' (76). Steuer deployed the term 'telepresence' to refer to 'the extent to which one

¹ I would like to thank Liz Wakefield for her work as research assistant on this project.

feels present' in the latter rather than the former. Seen in this light, virtual reality can be defined as 'a real or simulated environment in which a perceiver experiences telepresence'. It is a historically variable 'product of practically all media experience' (76). This less restrictive understanding of the term underwrites its remarkable valence in the late twentieth and early twenty-first century.

Far from being a province only of contemporary digital media, it is now more commonly argued that virtual realities have a long history and can depend on a startling variety of media. Grau, for example, argues that 'virtual reality ... is a constant phenomenon in art history that can be traced back to antiquity'. It has merely been 'revived and expanded' in the digital age ('Into the Belly of the Image' 365). 'Wall paintings from the late Roman Republic', for example, 'use motifs that address the observer from all sides in a unity of time and place, enclosing him or her hermetically. This creates an illusion of being *in the picture*, inside an image space and its illusionary events' (Grau, *Virtual Art* 25). In 'The Remarkable Villa dei Misteri' in Pompeii, created around 60BC, these images seem designed to arouse the observer to 'ecstatic participation' in a religious ritual. In contrast, 'fresco images in the Villa Livia at Prima Porta', painted in 40BC, surround the observer with 'an artificial garden', designed perhaps to provide a refuge from the everyday world (29). Closer to our own time, in the sixteenth century Baroque ceiling paintings created quite remarkable spaces of illusion. The ceiling of the Nave of Sant'Ignazio, for example, painted by Andrea Pozzo, creates the sense that the infinite spaces of heaven open from the ceiling of the church. Some observers claim that 'the trompe l'oeil effect is so powerful that the space literally grips the observer and incorporates him or her into the events in the pictures' (48).

In *Architecture from the Outside: Essays on Real and Virtual Space*, Liz Grosz extends still further Grau's claim that 'virtual reality ... is a constant phenomenon in art history' when she writes that

The virtual reality of the computer is fundamentally no different from the virtual reality of writing, reading, drawing or even thinking: the virtual is the space of emergence of the new, the unthought, the unrealized, which at every moment loads the presence of the present with supplementarity, redoubling a world through parallel universes. (78)

Even these claims are trumped in David Deutsch's *The Fabric of Reality* where, unconsciously echoing the thought of philosophers such as David Hume and Immanuel Kant, he writes that

Imagination is a straightforward form of virtual reality. What may not be so obvious is that our 'direct' experience of the world through our

senses is virtual reality too. For our external experience is never direct; nor do we even experience the signals in our nerves directly ... What we experience directly is a virtual-reality rendering, conveniently generated for us by our unconscious minds from sensory data plus complex inborn and acquired theories (i.e. programs) about how to interpret them. (121)

‘So it is not just science’, he concludes, ‘that involves virtual reality. All reasoning, all thinking and all external experience are forms of virtual reality’ (121).

Where early definitions of virtual reality were too narrow, these claims seem too broad. The former cuts the virtual realities of the present from those of the past; the latter fosters the view that the present is no different from the past. In this article I want to take a path between these extremes, by focussing on the creation and consumption of virtual realities in London during the Romantic period (1780-1830). I want to advance, albeit in preliminary and schematic form, the argument that, rather than being a feature of virtual reality in general, it is during this period that the virtual first becomes understood as ‘the space of emergence of the new, the unthought, the unrealized’. My argument concludes by suggesting that the remarkable contemporary cultural valence of virtual reality is to a surprising degree shaped by assumptions about the virtual, and the relation between real and illusory/fictional worlds, that first emerge during the late eighteenth and early nineteenth century.

Virtual realities of the Romantic period

In the late eighteenth century, Immanuel Kant provides the most influential philosophical account of the relation between real and virtual worlds (first- and second-order realities). Indeed, for Kant, what we take to be first-order realities are themselves mediated realities. There is no access to the thing-in-itself. As he writes in *Prolegomena to any Future Metaphysics*, because our

senses never and in no manner enable us to know things in themselves, but only their appearances, which are mere representations of the sensibility, we conclude that all bodies, together with the space in which they are, must be considered nothing but mere representations in us, and exist nowhere but in our thoughts. (32)

Kant’s transcendental philosophy (a transcendental empiricism) therefore raises, and offers the first provisional solution to, the characteristically modern problem of the relation between self-reference (which remains within a second-order world) and hetero-reference (which assumes a referent in the real, beyond the second-order world in which we are immersed).

The growing sense of a gap between first-order 'reality' and the mediated worlds in which we live, to which Kant's philosophy is a response, is conditioned by a wide range of factors, amongst which the most prominent are: the move from a hierarchically stratified to a functionally differentiated society (Luhmann 1982); the creation of a consumer culture, where 'the outward appearance of the product' lays 'claim to the status of being' (Adorno 85); the remarkable growth of self-reflexivity (the observation of observation) in science and art (Luhmann 1998); the discovery of non-European civilisations and the consequent realisation that Europe was merely one 'in the sum total of civilizations' (Schwab 18); and the rapid development of popular entertainments, such as the panorama and the phantasmagoria, along with the emergence of genres such as Gothic fictions, which set out to simulate, supplement or displace the actual (Otto). Each of these developments interacts in quite complex ways with the political upheavals of the late eighteenth century, in particular the French revolution, which emphasised that society was a work of culture rather than nature. Indeed, modern audiences are often surprised by the extent to which it is assumed, in the late eighteenth century, that society itself is a fiction that is taken for reality. The conservative Edmund Burke *and* the radical Thomas Paine both believed that society was based on a fiction naturalised by history and tradition, and that it could therefore be changed, for better or worse, by a new fiction. Indeed, Burke's *Reflections on the Revolution in France* is animated by his belief that in the late eighteenth-century society was being radically transformed by a new fiction, one propagated by the French revolution.

The crises consequent on the recognition that there is no unmediated access to reality are registered most unequivocally in Romanticism. Blake writes, for example, that 'Every Eye Sees differently As the Eye — Such the Object' (645). In 'Lines Composed a Few Miles above Tintern Abbey' Wordsworth speaks of 'the mighty world / Of eye, and ear — both what they half create, / And what perceive' (36057-62, lines 105-107). However, similar ideas appear even in the work of the utilitarian reformer Jeremy Bentham, who develops a sophisticated theory of 'fictitious entities', defined as 'an object, the existence of which is feigned by the imagination ... for the purpose of discourse ... [but] is spoken of as a real one' (*Theory of Fictions* 114). Fictitious entities and imaginary non-entities are not confined to literature: the Law, Morality, Religion, Society, even Common-sense are fictitious entities, that are produced by and themselves sustain particular ensembles of people and things. Fictions in this sense structure the real. Moreover, Bentham argues that because fictitious entities condition the way in which real objects appear, there can be no unmediated access to things in themselves.

London is at the epicentre of these developments, as the heart of a global colonial and commercial empire, one of only two cities in Europe that in 1800 had a population of more than a million people, and one of the chief foci of the

industrial revolution and of the new mass entertainment industries. In this milieu, the growing sense of a gap between the actual and the virtual, between first-order reality and the second-order realities in which we live provides the context for public fascination with virtual realities. At the same time, the virtual realities produced by the new optical media (deployed in the Eidophusikon, Panorama and Phantasmagoria, amongst other popular entertainments) provide exemplary instances of, and catalysts for debate concerning, the now uncertain relations between real and virtual worlds.

This debate ranges from, on the one hand, Bentham's suggestions as to how 'fictitious entities' might be used to maintain social order (itself a 'fictitious entity', Bentham admits) and, on the other hand, Romantic reflections on the relation between the virtual worlds of art and (the fiction of) reality. At one pole, Bentham's planned Panopticon prison is the most remarkable and most ambitious of these attempts radically to shape an individual's behaviour by shaping their perception of reality, which in turn is to be achieved by controlling the environment within which they live. With the aid of architecture, ritual, masks and deception, the Panopticon creates the 'fictitious entity' of an 'all-seeing' eye (God/authority) able to close the gap between second-order realities (the second-order world of the prisoner) and first-order reality (social order). Still more radically, the optical environment of the panopticon (including the fictitious entities, recording devices and communication systems that play a role within it) constructs a virtual reality that, by eclipsing the 'real' and re-contextualising the prisoner's actions, provides a new way of shaping behaviour. As Bentham writes, 'By the [eye], through the medium of the imagination, the judgement of the bulk of mankind may be led and moulded almost at pleasure. As puppets in the hand of the showman, so would men be in the hands of the legislator, who to the science proper to his function, should add a well-informed attention to stage effect' (*Rationale* 321).

At the other pole, for the Romantics, art opens a space of the emergent, the possible, and the new. It can therefore be used to renovate or even displace reality. In Coleridge's 'The Garden of Boccaccio', reading becomes an experience of immersion and interactivity that closely resembles the achievements of digital virtual-reality. 'I see no longer!', writes Coleridge,

I myself am there,
 Sit on the ground-sward, and the banquet share.
 'Tis I, that sweep that lute's love-echoing strings,
 And gaze upon the maid who gazing sings:
 Or pause and listen to the tinkling bells
 From the high tower, and think that there she dwells.

With old Boccaccio's soul I stand possest,
And breathe an air like life, that swells my chest. (473-76, lines 65-72)

For Hazlitt, painting offers an analogous experience. 'A fine gallery of pictures is', he writes, 'another universe, built of air, of shadows, of colours. Everything seems palpable to feeling as to sight. Substances turn to shadows by the painter's arch-chemic touch; shadows harden into substances' (14). For both writers, second-order realities are more real than objective reality. Blake is still more extreme, claiming in 'A Vision of the Last Judgment' that the virtual world opened by his art is reality: 'If the Spectator could Enter into these Images in his Imagination', he would 'arise from his Grave ... meet the Lord in the Air & then he would be happy' (560).

Given the remarkable preoccupation of late eighteenth- and early nineteenth-century writers with virtual reality, it is surprising that there is at present no extended study of the role it plays in Romanticism (or of the relation between Romantic virtual realities and their more pragmatic competitors).² This is in part because the problem of virtual reality has been eclipsed in Romantic studies by the question of the imagination. Simplifying a complex field, one can say that on the one hand critics such as Northrop Frye, Ernst Tuveson and M. H. Abrams assume the redemptive powers of the imagination. And on the other hand, Jerome McGann, Paul de Man and Alan Liu, informed respectively by Marxism, Deconstruction, and New Historicism, all attack the pretensions of the Imagination. Yet rather than debating the truth or falsity of its creations, it is possible to argue that the imagination is one of the terms (along with nature, history, reason, God, and so on) deployed in the late eighteenth and early nineteenth century to mediate between first and second-order worlds. The consequent shift in focus, from the clash between ultimate grounds to the problem of the virtual restructures our view of the period, in ways that bring it into intense dialogue with the present.

Historicizing digital virtual realities

Previous attempts to link digital virtual reality with its precursors in the late eighteenth and early nineteenth century argue that it represents the culmination of Enlightenment attempts to produce a 'second-order reality in which to play with or practice upon the first order' (Poster 42). The rudiments of this history seem straightforward: 'The invention of photography in the nineteenth century added photorealism' to earlier attempts (camera obscura, panorama,

² Amongst recent attempts to rethink the relation between Romanticism and visual culture, Sophie Thomas's *Romanticism and Visuality* and Luisa Calè's *Fuseli's Milton Gallery* are the most important. Although both mention the virtual, their interest is elsewhere. The former focuses on 'looking', 'making visible' and spectacle rather than 'immersion'; the latter usefully explores the visual dimension of reading in the late eighteenth century, but without developing the implications of this phenomenon for our understanding of virtual reality.

phantasmagoria, and so on) to simulate the real. Photography added motion, while 'Virtual reality in turn adds navigation, immersion, and interaction to the cinematic representation' (De Mul 241. See also Robbins, Hillis).

Although, at first glance, this narrative seems unexceptional, it is significant that no extended history of 'Virtual Reality as the Completion of the Enlightenment' (Penny) has yet been written. This is in large part owing to the recognition that this supposed culmination of Enlightenment (realist) traditions of representation divides itself from them. Crary, for example, describes the 'fabricated visual "spaces" of computer imagery as radically different from the mimetic capacities of film, photography and television'. We are, he writes, 'in the midst of a transformation in the nature of visuality probably more profound than the break that separates medieval imagery from the Renaissance perspective' (1). Similarly, Stone claims that virtual reality brings the 'mechanical age' to a close (183).³

Paradoxically, it is the remarkable ability of digital virtual reality to recreate the appearance and sensations of first order reality that engineers its break from Enlightenment traditions of representation. This duplication of the real implies that first order realities may themselves be second order realities, albeit mediated by our senses rather than a computer. The realist/Enlightenment quest to represent reality is consequently displaced by the realisation that reality is inaccessible, perhaps even an illusion. Rather than providing 'a method of reproducing reality', virtual reality, it is therefore widely thought, might better be construed as 'a form of disappearance of reality' (De Mul 241).

Seen in this context, the prominence of virtual reality in the late twentieth and early twenty-first century rests on the possibility it implies of escaping from the illusion of the real to the supposed reality of the virtual. Virtual reality, Baudrillard asserts, 'is the end of illusion, the illusion that there is a real world'. This portends a dystopia of 'radical disillusion' in which reality is no more than a struggle between fictions (106). For other observers, virtual reality suggests that 'the human perceptual apparatus' is neither fixed nor natural (Poster 43)

³ Oliver Grau's *Virtual Art* is the most important book-length survey of (artistic) virtual realities from Greek and Roman times to the present, although it doesn't mention Romanticism and is uninterested in the ways in which earlier discourses of virtual reality might help shape our understanding of virtual reality in the present. Margaret Wertheim's *The Pearly Gates of Cyberspace* argues, in a somewhat impressionistic manner, that cyberspace is a contemporary equivalent of the medieval heaven, a 'spiritual' realm divided from the everyday world. Ken Hillis's *Digital Sensations* offers an important critique of the notion on which Wertheim's book is based, namely that virtual reality disembodies the self. The brief history of virtual reality offered by Hillis is of computer-generated virtual reality (1-29). Although he mentions some of its precursors, there is no significant mention of Romanticism.

All other book-length or substantial accounts of the emergence of virtual reality are concerned with computer-generated virtual worlds, giving at best only an occasional glance back to earlier forms. Representative examples of this literature include: Campbell-Kelly and Aspray; Heim; Kreuger; Rheingold; Moody; Schroeder; Shields.

and that, as a fabricated rather than natural reality, the perceived world can be radically transformed (Heim 48; Rheingold 19; Kurzweil 487).

As this suggests, the rhetoric of rupture is itself problematised by the prominent role played by the rhetoric of Romanticism, of art and imagination, in discourses of virtual reality.⁴ As is often remarked, immersion in a computer-mediated virtual world closely resembles the 'willing suspension of disbelief' described by Coleridge as necessary if the virtual worlds of fiction are to emerge. In both Romanticism and postmodernism, immersion/ suspension of disbelief eclipses the 'real' and in its place opens a heterocosm, a world (purportedly) of imaginative and expressive freedom centred on the individual (Hillis, Masumi, Ryan, Stenger; Stone). Moreover, to the extent that reality itself comes to seem virtual, the discourse of virtual reality resembles the claims about poetry and poets made by Romantic writers. Adapting Shelley's description of poetry in 'A Defence of Poetry', we might say that virtual reality

defeats the curse which binds us to be subjected to the accident of surrounding impressions. And whether it spreads its own figured curtain, or withdraws life's dark veil from before the scene of things, it equally creates for us a being within our being. It makes us the inhabitants of a world to which the familiar world is a chaos ... It creates anew the universe. (533)

Virtual reality, it appears, draws on the conflicting rhetorics of Enlightenment and Romanticism. It concludes a tradition of representation inspired by the former, breaks with this tradition, but in doing so returns to the latter. The mechanical age concludes with an apparently oxymoronic return to its beginning. This *impasse* is, however, only apparent. It arises because contemporary theorists are often unaware of, or discount the extent to which, the discourses, rhetoric, and assumptions of contemporary virtual realities are conditioned by those of the Romantic period. Indeed, one might argue that the tension between: the attempt to represent a 'first-order reality' through a 'second-order reality'; its periodic collapse (when the first-order reality is discovered to itself be a second-order reality); and the emergence of the Romantic/postmodern individual

⁴ Richard Coyne's *Technoromanticism* (2001) is the only book-length study to examine 'the spectrum of Romantic narrative that pervades the digital age, from McLuhan's utopian vision of social reintegration by electronic communications to the claims of cyberspace to offer new realities'; but it sets out on this task with a view of Romanticism that is at best narrow and at worst misleading. Romanticism is, according to Coyne, 'the longing to transcend the world of the individual toward a unity' and a consequent flight from embodiment. This leads to odd statements such as 'Romanticism is the truly abiding aspects of the Enlightenment' or 'Romanticism in Neoplatonic guise is a force in the late modern age' (60) or 'Romanticism is ... idealistic in that it elevates the existence and importance of ideas over matter, in the manner of philosophical idealism but also in the everyday sense' (30). Curiously, Coyne seems unaware that many of the systems of thought which he pits against Romanticism are themselves influenced by Romanticism, and the narrative of the book as a whole conforms to a very conventional Romantic narrative.

are interimplicated responses to a world in which the relation between first- and second-order realities has become uncertain. Together they form what one might call an 'alphabet' of responses to the virtual in modernity, a topic that takes us beyond the limits of this essay.

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Naturecultures: Introduction

Emily Potter and Gay Hawkins

This collection of essays, grouped under the theme of 'Naturecultures', offers a range of approaches to a common concern: to decentre humans from our ontological, ethical-political and cultural stories. The imperative to think about non-human matter in ethical-political terms is fuelled by the environmental calamities currently facing the Earth. But it is inspired by the recognition that humans and non-humans are intimately bound in ways that put into question some of the fundamental precepts of western thought.

The term 'natureculture' indicates the starting point for this project. Enlightenment logic positioned the thinking human subject at the centre of the world, the master not only of reason but of agency too. Culture, the realm of human meaning and creativity, was set out as distinct from nature, the domain of non-human (or at least, non-human authored) matter and life. Ethical-political theory, as well as political institutions, developed along these philosophic lines.

However in the multiple milieux of everyday life, humans and non-humans have always been caught up with each other in ways that make a nature/culture binary impossible to sustain—something that many non-western cultures have long acknowledged. As Stephen Muecke reminds us, 'we have only ever managed to philosophise with the help of things: the turning stars, apples which fall, turtles and hares, rivers and gods... They all have a part to play, forming collectivities which have to decide who can live with what and how'.

These essays think through specific things or situations—the life of the plastic bag, new media art, the ecological footprint, and managing urban water demand—and critical concepts such as agency, ontology, ecology, materiality, co-constructionism and representation, to explore this interactivity of human and non-human life and its implications for fundamental questions of who we are; how we know and how what we know comes to be. The purpose, however, is not to assert the capacities of the non-human at the expense of the human, or privilege one form of matter or life over another—quite the contrary; it is, in Kay Anderson's words, to ask 'how we might live in our more-than-human worlds' (xviii).

This collection is an outcome of a collaborative process that sought to think through these questions in conversation. All the essays originate from the Cultural Studies Association of Australia Conference held in Adelaide in December 2007, where a group of senior academics, early-career researchers and postgraduate students were drawn together by a common interest in natureculture thinking.

A workshop held in May 2008 provided an opportunity for us all to further develop these papers around the table; a final process of one-on-one reviewing amongst the group pushed the essays to their next iteration.

It is worth recounting this history, not just for the background it provides to the collection, but for the contrasting model it offers to the solitary critic privileged in the Enlightenment tradition. A world composed of and through (re)arrangements of matter and energy, both human and non-human, requires not just new ways of thinking, but different ways of working, too. Not all the essays developed through these conversations are published here: other contributions dealt with technology transfer in international development aid projects; dust mites and human respiratory problems; the use of pedometers as a technical reconstitution of the everyday activity of walking; and the technical and social messages encoded in hotel security swipe-cards. The influence of these papers remains, however, in the texture of the others published here, as well as in the ongoing conversations they have inspired. We would like to acknowledge the ARC-funded Cultural Research Network, especially the Cultural Histories and Cultural Geographies Node, for its support of this natureculture initiative.

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More-than-Human Politics: The Case of Plastic Bags

Gay Hawkins

Suddenly everyone is talking about plastic bags. The muted chatter that has surrounded them for years has become loud and insistent. Open any newspaper around Australia and you are confronted with headlines like: *The Battle of the Bag*, *Eco Worriers—How Buying the Groceries Presents Environmental Dilemmas*, *Ban on Bags Can't Carry Weight*, or *Plastic Bags—the Cane Toads of Capitalism!* As this publicity shows bags have changed, they've become contested matter, a site of controversy over their uses and impacts. As scientists discover marine life choking on bags and environmental activists document their endless afterlife in landfill, they have been transformed from innocuous disposable container to dangerous threat to the environment.

But what of the bag in all this? Even though it seems to be the centre of attention it remains strangely mute and submissive, a passive victim of reclassification. Humans gather around it disputing competing evidence of its impacts, arguing over which facts are true. The bag is definitely a problem but it is not a political actor. In seeking to address plastic bags' stubborn materiality the political action seems to flow all one way. Scientific knowledge and environmental education frame the bag as a bad object to be rejected by the environmentally responsible human subject.

This mode of political analysis gives excessive primacy to humans and the subject object distinction. The only power the bag seems to have is to remind humans of their political agency, to confirm their capacity to act on a world of objects and nonhuman stuff out there, to say NO to plastic bags! Rejection and refusal become the other side of neoliberalism's valorisation of choice. The freedom to choose, that gesture so fundamental to the formation of the neoliberal subject, is also the freedom *not* to choose. In this valorisation of voluntarism things matter only because they reveal human will and mastery. Whether selected or rejected, objects are in the service of a political hierarchy in which subjects rule.

But what if we understood subjects and objects not as fixed oppositions but products of their relating, as co-constituted with multiple social and material reverberations? What would it mean for political analysis if the starting point for investigation was the role of nonhuman entities in assembling distinct social connections? How would the politics of plastic bags be understood if the focus shifted from questions of effects to questions of practice? From predetermined environmental impacts to the various ways in which plastic materiality becomes

entangled with publics and citizenship? What is the potency of these objects in various forms of everyday conduct and political association? How can we make sense of plastic bags as the *stuff* of politics?

These are the questions that drive this paper. My broad aim is to show why socio-ecological humanities research needs to pay more attention to questions of matter, and to argue that nonhuman entities are now central participants in many political processes. Matter doesn't simply challenge the anthropocentrism of much political thinking, it also reminds us of how many contemporary political disputes now involve the management and regulation of the nonhuman, generating increasing crossovers between the political, the scientific, the technical and the ethical.

My primary concern is how to think through the relations between politics, plastic and social life in more productive ways. If we know plastics as waste are bad—and there are many different registers of bad here—how might we shift political analysis from this statement of fact and its depressing effects to an engagement with new possibilities, new forms of association around plastics and the political? What forces and thinking are needed to create different political and environmental realities, and what role would we give to plastic bags in this process? How could we create a *more than human politics* around plastic: a political collectivity or public that recognised plastic bags' capacity to suggest more ecologically careful modes of living?

In posing these questions I am explicitly writing against certain versions of environmentalism. Rather than focus on deep ecology's emphasis on transpersonal connections with nature as the motivation for action, I want to investigate how everyday matter gets implicated in political disputes and ethical practices. *Say No to Plastic Bags* campaigns are a good example of this. While saving 'nature' or 'the environment' may be the backdrop to these campaigns: abstract idealised spaces called up as rationales for ethical practice, the real political action is in ordinary habits of shopping. What the shopper puts their purchases in and how these choices come to be seen as evidence of an ethical sensibility. This is 'environmental ethics' not as interconnectivity with nature but as ubiquitous, historically conditioned, material practices that organise distinct conducts and forms of reasoning. The question is: what is the role of the plastic bag in these conducts?

This is a provocative question for much environmental ethics. While this diverse field has been crucial in arguing for the ineluctable connections that bind humans, animals, ecosystems and so on, there has been a certain reluctance to acknowledge the ethical significance of bad stuff in the environment. Oceans streaked with sewage, rivers choked with plastic bags, landfills full of discarded computers are seen as outside an ethics and politics attuned to interconnectivity. This destructive matter is seen as disrupting the deep ecological impulse to

identify with nature. While the affective horror of dangerous matter is acknowledged, particularly its capacity to trigger grief or despair for a contaminated world, there is a certain unwillingness to comprehend how bad stuff comes to matter phenomenologically and politically, *in and of itself*. How this material becomes implicated in the organization of distinct regimes of living and forms of ethical action or blindness. The tendency is to reduce it to a negative force obliterating the rights of nature, yet more evidence of human mastery and exploitation.

In many versions of environmental ethics destructive matter manifests what Noel Castree describes as a 'materialist essentialism'. It is seen as having clearly definable properties that are ontologically fixed. And, as Castree explains, 'these properties can, in the final instance, be appealed to by environmental ethicists (explicitly or implicitly) to anchor claims about the who, what and how of ethical considerability' (8). Despite the recognition of relational ontologies and differences-within-connections, the tendency is to demonise environmentally dangerous matter as materially irreducible. This inevitably privileges humans as the source of ethical awareness and action. While natural matter is recognised as ethically significant and as a site of communicative vitality, destructive artificial material is afforded no such capacity. Humans are not invited to be open to its wilful forces rather, they are urged to enact their ethical will and eliminate it.

This is how ethics slides into moralism. As much as one may agree that the world would be a better place without plastic bags, the moral imperative to refuse them denies the complexity of contexts in which we encounter them and the diversity of responses bags generate. It fixes the material qualities of plastic bags and human responses to them. Approaches to environmental ethics that invoke material essentialism deny the contingency of ethical constituencies and relations. They can also deny the *affective* dimensions of ethics, the ways in which corporeal interactions with the world are always mixed up with ethical reasoning and negotiations. There is no possibility that plastic bags might move us or enchant us or invite simple gratitude for their mundane convenience; that they might prompt us to behave differently.

The first step in a more-than-human politics, then, is to examine *how* plastic bags come to matter without recourse to a materialist essentialism, and without putting humans at the centre of the story. By letting plastic bags 'have their say' or, as Karen Barad would say, allowing 'matter its due as an active participant in the world's becoming' (803), it is possible to open up a different line of thinking about the relations between ethics, politics and the environment. One that begins from the modest recognition of plastic bags not as phobic objects ruining nature but as things we are caught up with: things that are materialized or dematerialized through diverse habits and associations. By refusing to situate

plastic bags in a moral framework, as always already bad, their materiality becomes more contingent and more active. Bags cease to be only ever passive and polluting and become, instead, active participants in various everyday practices in which the materiality and meaning of *both* bodies and bags are fashioned. This is not to say that materiality is reducible to relations. Rather, that different interactions *make present* different material qualities and affects. And it is this contestability of matter that is fundamentally implicated in ethico-political deliberations. The challenge is to understand the ways in which various plastic materialities become manifest and the impacts of these materialities. How might they generate political capabilities for plastic bags, and how might these capabilities reverberate on bodies, on habits, and on enhanced ecological awareness?

Central to this approach is an account of agency that is cut loose from a traditional humanist orbit. As Barad says:

Agency is not aligned with human intentionality or subjectivity... Agency is a matter of intra-acting, it is an enactment, not something that someone or something has. Agency cannot be designated as an attribute of 'subjects' or 'objects' (as they do not preexist as such). Agency is not an attribute whatsoever—it is 'doing'/'being' in its intra-activity. Agency is the enactment of iterative changes to particular practices through the dynamics of intra-activity. Agency is about the possibilities and accountability entailed in reconfiguring material-discursive apparatuses of bodily production... Particular possibilities for acting exist at every moment, and these changing possibilities entail a responsibility to intervene in the world's becoming, to contest and rework what matters and what is excluded from mattering. (826-27)

This echoes Jane Bennett's description of agency as the 'differentially distributed capacity to make a difference in the world' ('Force of Things' 355). What both these thinkers force us to acknowledge is the capacity of plastic bags, in certain arrangements, to enact iterative changes, to make a difference. The question is in what senses do these changes inaugurate a more-than-human politics?

Plastic bags in action

To pursue these issues let's consider two plastic bags in action: the banned plastic bag of Say No campaigns and some abandoned plastic bags that are the central characters in a recent Adidas ad. Each of these bags manifest distinct plastic materialities and each generate different affective energies. While they share the same material qualities, the performance of these qualities in different assemblages is evidence that plastic materiality cannot be essentialised, and nor can ethics. Rather than being a set of fixed principles in the name of moral reason, what these plastic bags reveal is the fundamental porousness and instability of

ethics. In these examples ethics emerge as ubiquitous, affective and thoroughly imbricated with corporeality. Acknowledging this ethical instability does not mean an abandonment of environmental politics, it means a different mode of political thinking, less concerned with dissensus and contestation and more concerned with speculative practices and improvisation. These plastic bags ‘force thought’, to use Isabelle Stengers’ phrase. They make themselves known in different ways and in being open to these different knowledges it may be possible to enlarge the politics of plastic bags, to imagine different modes of thinking, feeling and acting with them.

Say No!

Campaigns to eliminate plastic bags have become a common fixture in countries where environmentalism is highly organised. Sometimes run by governments, sometimes by green or activist organizations, these campaigns focus on reducing plastic bag use by urging consumers to choose more sustainable alternatives. In Australia that alternative is, most often, a green shopping bag made out of long lasting polypropylene with an environmental slogan on the side. In encouraging shoppers to voluntarily reject disposable plastic bags *Say No* campaigns are explicitly pedagogic, their intent is to reform populations and change everyday habits. But how do they do this and what is the role of the plastic bag in this process? By investigating how environmental campaigns problematise plastic bags and shopping practices it is possible to see how these mundane objects become caught up in new associations that organise a distinct set of interfaces between bodily habits, materiality and ethical reasoning. How, in activating techniques of conscience, plastic bags participate in fashioning an environmentally concerned shopper.

Using a range of scientific information about environmental impacts *Say No* campaigns frame plastic bags as hazardous. And, in the same moment, they invite shoppers to engage in self-scrutiny and reflect on their everyday conducts around them. This framing is explicitly moral. It involves fixed oppositions such as environmentally friendly/environmentally hazardous, and it appeals to categorical imperatives such as protecting nature or global ecological survival. This is the larger scale in which minor habits and their impacts are situated. In constituting plastic bags as a ‘matter of concern’, as Bruno Latour might say, *Say No* campaigns activate specific aspects of the materiality of the plastic bag: their slow process of decomposition, their tendency to trap or choke marine animals, their oppressive ubiquity. These material qualities are not representations or social constructions they are a particular aspect of plastic materiality that is made present in order to transform the meaning of the bag from innocuous container to polluting and recalcitrant matter. These reframings of the bag expose its material afterlife and extend the ethical imagination of the shopper. They reveal ‘disposability’ as a myth, and establish a network of

connections and obligations between ordinary habits and the purity and otherness of nature. In this way the bag becomes capable of generating not only environmental concern but also guilt.

Guilt is a powerful reminder of the claims matter can make on us. Adopting new conducts that avoid plastic bags involves an acceptance of plastic materiality as dangerous, and a willingness to change one's relationship to that matter out of a sense of obligation to the environment. This new network of relations between bags, shoppers and nature involves practices of self-monitoring and discipline that Ian Hunter describes as 'techniques of conscience' (128). The capacity of plastic bags to make some shoppers hesitate before they reach for one is only successful if subjects are receptive to the ethical obligations the bag's materiality poses to them, if they have a conscience.

According to Foucault conscience is a product of a range of techniques of the self that have come to constitute distinct styles of subjectivity (29-30). To be a subject now means cultivating particular modes of reflexivity. It means developing special ethical techniques and capacities. These techniques and capacities are historically variable in their form and targets. Their presence is not evidence of a foundational interiority grounding the subject, rather, of shifting regimes of living and self-cultivation. Techniques of conscience make the self into an object of ethical attention; they show how subjects problematize and modify their conduct on the basis of ethical principles to which they aspire. And, as *Say No* campaigns reveal, matter can play a key role in activating techniques of conscience.

While environmental education campaigns, and their psychological logics, assume that ethical agency resides in the raised consciousness or 'awareness' of the concerned individual, that individual is contextually situated. And those contexts involve multiple interactions with plastic materiality. Public campaigns about the hazardous materiality of plastic bags are successful not simply because they have re-educated shoppers but because they have animated the materiality of bags in powerful ways. They have made the plastic bag a potent *intermediary* between an interior reception of an ethical command and the mobilization of the will to abide by it (Bennett, *Enchantment* 156).

Say No campaigns run by governments or environmental NGOs show how plastic bags have become implicated in processes of moral self-regulation and conscience, how circuits of guilt, self-reproach and virtue have become enfolded with ordinary acts of shopping. And how, in activating techniques of conscience, the plastic bag participates in shaping an environmentally aware subject. The force of matter in this process, its capacity to prompt certain practices in particular arrangements, is evidence of the formation of a distinct ethical constituency in which changed interactions between bags and bodies produce new effects. These effects are more than just reduction in use they also involve the formation of

collectivities. For the shopper, recognition of bags' polluting materiality is a source of ethical concern and a prompt to reject them. When that shopper arrives at the supermarket check out and presents their green eco bags, the absence of the plastic bag is a public declaration of environmental awareness. The eco bag as an accessory becomes a marker of a nascent political community of concerned subjects whose collective rejection of plastic bags implicitly links them. In the same way, the shopper struggling across the car park arms weighed down with full plastic bags is vulnerable to public scorn about their bad habits. How many times at the checkout have we heard a shopper declare guiltily: *'sorry, I forgot to bring my green bags'*.

There is no question that *Say No* campaigns involve differential degrees of agency on the part of plastic materiality. That the ethical constituency formed through these campaigns is an environmentally aware subject who encounters the bag as hazardous matter. And that those who continue to use plastic bags in a context of environmental campaigns against them can feel exposed or uneasy. There is also no question that the affective energies that are generated by this style of environmental campaign involve various registers of moral righteousness and anxiety. However, as effective as these campaigns have been in some places in reducing use and developing enhanced ecological awareness, their limits must also be acknowledged.

William Connolly argues that conscience and other code driven moral techniques are crude and blunt tools for coping with the world. Their tendency to ground moral or political actions in law, God, global survival, consensus or any other categorical imperative makes them blind to the ambiguous and disturbing aspects of many encounters. The moral weight of codes can too easily turn obligation into duty, guilt and resentment: *'I should do this ... because the environment is suffering, because I am law abiding, because I am virtuous'* (195). This is obligation working in the interests of human mastery and self-certainty, obligation that implicitly maintains the stability of being. While *Say No* campaigns have only been successful because they have animated the materiality of bags and implicated humans in new relations with them, the differential agency of the bag in this process is disavowed. It is something to be controlled by human will, not a participant in an emergent ethical constituency. The logic of categorical imperatives and prohibition privileges the concerned and virtuous shopper as the source of ethical action and change. In this way, obligation and guilt suppress the agency of the bag and deny the ways in which its materiality always exceeds moral framings.

Adidas and the plastic bag soccer ball

In my next example I am going to use an Adidas advertisement to explore a very different instance of how the matter of plastic bags comes to matter. In this example I focus on the performative dimensions of the bag rather than a

representational or ideological reading of the advertisement. In other words, I want to put aside issues of correspondence or mystification between the audiovisual text and reality. This habit of thinking privileges singular meaning over social and material complexity, and can deny the ways in which representations are simply one of a multiplicity of realities that are all real enough. While there is no question that the aesthetic and economic techniques of advertising and branding are the context for the performance of this particular plastic bag, and that they generate a distinct set of meanings for it, these meanings overlap with and interfere with other realities. As Annemarie Mol would say, reality is always performed and the challenge is to understand how multiple realities involve varieties of truths that are in play with each other. This challenge is both analytical and political. The issue is not about which performance gets closest to the truth of reality but how do some realities come to be more real than others. This is the crux of Mol's account of ontological politics and it resonates with my argument for including the more-than-human in political process. Like Mol, I am concerned with how the various realities of objects get enacted in different settings and how these enactments might suggest different, and perhaps better, modes of living.

My interest in this advertisement, then, concerns the way in which it captures a very different socio-material network between bodies and bags. Unlike *Say No* campaigns, these plastic bags are not moralised intermediaries prompting techniques of conscience. Rather, they are a practical resource for invention and innovation. The reality they perform resonates with everyday experiences of plastic bags: their mundane convenience, their light and malleable form, their sticky persistence. Of course the material qualities of the bag and the narrative that unfolds around them are generating value and qualities for the brand—Adidas—nothing is impossible! But there is more than a brand being enacted here. There is also another way of relating to matter that is attentive, creative and experimental. The question is: can these bags be considered as implicated in a more-than-human politics and, if so, what kind?

In a recent Adidas ad a small boy roams through an unidentified South American slum collecting plastic bags. He pulls them out of garbage bins, he grabs them blowing about in the wind, there's no question he is on a mission to collect as many bags as possible. Finally, we see him crawl through a fence into an open space and begin fashioning something out of all his bags. It's a soccer ball made by bundling bag after bag into a sphere. As he kicks his plastic bag creation triumphantly into the air the Adidas logo comes up with the slogan—'nothing is impossible'.

The narrative interest in this ad is not simply why is he collecting all these bags but look at what those bags make the boy do. The one blowing down the street just above his head forces him to jump high and grab it before it flies out of

reach. The one stuck in the barbed wire fence fiercely resists being pulled out; the one in the gutter is sticky with waste. Behind the pulsating Latino sound track we hear the sounds of plastic materiality, their distinctive rustle as they are blown about or pulled. Finally, we see their material malleability, their capacity to be pushed and crammed into all sorts of shapes. Plastic bags are central characters in this ad, they are fundamental to the action. The audience is captured by the performance of their materiality, all the things they can do.

These bags present their materiality as something to be experienced and negotiated. They continually invite the little boy to be patient and persistent, to adapt his actions to the demands of plastic matter. In seeking to create something with the bags the boy has to engage in a *collaborative process* in which the meaning and materiality of the human and the bag shift. In this advertisement the bag's plastic presence is noticed, not as a bad matter but as what John Law calls 'in-here enactment' (84). For Law, this means the processes whereby material presence is enacted into being in distinct relations and practices. Presence is what is *made present* in particular relations. However, it also, at the same time, involves manifest absence because presence is always incomplete, always limited and contestable. The manifest absence in this encounter is the moralised plastic bag of environmental awareness and the virtuous identity of the ethical consumer. In this advertisement, the in-here enactment of the bag generates experiential networks of collaboration that disturb neat oppositions between environmentally aware subject and hated object. The plastic bag has become a player in a different reality; in asserting its material presence it disrupts framings of it as dangerous and destructive. Its creative possibilities disrupt the circuits of guilt and conscience that drive moral responses. Instead, the in-here enactment of the bag reveals a different plastic materiality that rearranges conducts and perceptions. As the boy responds to the invitation from the bag to be patient, arrogant senses of human agency and mastery are disrupted. This inanimate thing is animate: it is suggesting particular actions.

The reality that these bags perform reveals their capacity as both practical resources for being and active material force. Humans do things with them, leave their traces on them but this does not mean that they are completely subordinate to human action. They have a 'life' of their own that we have to accommodate in our activities. These bags put questions of action and practice at the centre of ontology, what we can do with them and what they do to us becomes central to how we know them. By insisting that humans work with them, these bags make us aware of the ambiguity of intercorporeality and our complex entanglements with matter. The need for co-operation short circuits guilt and makes humans open to the thing-power potentiality of plastic materiality. These bags are not inert environmental hazards nor are they appealing to conscience. They don't problematise nature or bad habits, they simply make us aware of how plastic bags can be both resistant and useful. This advertisement is a

powerful reminder that there are multiple realities for plastic bags and, in simply acknowledging this, the moral singularity of *Say No* campaigns is rendered unstable.

Paul Carter's concept of 'material thinking' is a useful way of making sense of this example. This concept recognises the activity of matter and foregrounds the active role of materiality in thinking and invention. It also seeks to capture the qualitative or phenomenal dimension of things *as they are apprehended*, as they make themselves noticed, as they bite back. Material thinking works to 'intensify what already exists' (8), as Carter says, and in this intensification we notice materiality in ways that we are often blind to; we respond in ways that involve what Nigel Thrift calls 'processual sensualism', or active ongoing collaboration with the world. I like the way these concepts don't over reach, they don't read into the bag all sorts of social ills. In both Thrift and Carter's paradigm material thinking is *not* representational thinking—the bag doesn't stand for something else, the evils of a global multinational or child poverty—it is a concept that foregrounds a materialist phenomenology and the ways humans are always entangled with nonhuman entities.

In this way the plastic bag soccer ball suggests a different kind of more-than-human politics; one not based on moral problematisation, ideological critique or human mastery (say no!) but on innovation and invention. This resonates with Deleuze and Parnet's understanding of politics as a process of '*active experimentation*.' When matter disturbs and defamiliarises it makes trouble for previous ways of understanding and acting. It can also create spaces of possibility where the immanence of politics as other ways of being is revealed. In the shift from prohibition to experimentation the scale of politics is also transformed. Experimental practices are played out *in between* large-scale macropolitical institutions and processes and the sub-institutional movements of affect, habit and minor material practices. Central, here, are the ways in which matter can disrupt normativity and moral codes and reveal other affordances and realities. For it is precisely in these minor practices, like being responsive to the plastic bag suggesting that you jump high, that bags can shift perception and suggest experiments with new practices, or make us think again about our relations with them. This ad beautifully captures the collaborative work and imagination involved in creative reuse.

This focus on the performativity of the plastic bag, and the material thinking it generates, could be seen as a refusal of politics, a denial of the ways in which the bag is being used to constitute brand value for a global corporation. In this framework the plastic bag is simply a ruse for the promotion of Adidas as a caring company concerned about poverty and the struggle to overcome immense odds: *nothing is impossible*. The celebration of the plastic bag soccer ball implicitly invokes conservative ideologies about the dignity of deprivation. There is no

doubt that the logic of branding is at work here and that the function of the advertisement is to establish the qualitative possibilities of the abstract logo and the commodities attached to it. And, as with all brands, this process reveals some aspects of the commodity but keeps others very well hidden, specifically, the exploitative conditions under which those commodities come into being (Lury 50). As Arvidsson argues brand management is about the 'reflexive filtering of the productivity of the multitude and its re-insertion in the social as a polished quality' (130). The bag is doing this semiotic work but reducing it to just a representation that masks the macropolitics of exploitation imposes a singular material reality on the bag. It simply becomes a surface on which politics is inscribed.

A materialist analysis acknowledges that other realities are present for the bag beyond the symbolic. And that these filter into the advertisement in ways that exceed the controlled realities of 'brand management.' In arguing for a more-than-human politics my aim is *not* to debunk the advertisement and expose the true meaning of the bag in Adidas' global intentions. Rather, my approach provides evidence of a different set of empirical facts about plastic materiality, that both resonate with everyday encounters and suggest alternative responses to them beyond a moralised environmental politics of prohibition. This insistence on the capacity of the bag to exceed its semiotic and symbolic determinations, to shock and surprise, echoes my claim that the power of the Adidas advertisement lies in its capacity to reveal the material presence of plastic bags not as environmental hazards but as vital matter. We are invited to see them as a creative resource, as a tool for material thinking and, in this moment, the bag becomes a collaborator not a demonised bad thing.

Conclusion

Different bags, and different performances of plastic materiality made present in different associations. My aim has been to show how bags participate in politics via their capacity for differentially distributed agency. While environmental campaigns have been phenomenally successful in prompting changed habits, it's wrong to think this activity is an exclusive result of a raised human awareness about 'nature' under threat. Nature may be the wider backdrop here but plastic bags are the real stuff of politics. Their capacity to activate techniques of conscience and become ethical intermediaries capable of prompting new human habits makes them potent participants in better practices. In *Say No* campaigns bags become capable of making claims on humans, of capturing them in experiential networks of obligation that invite them to consider what they do.

However, in *Say No* campaigns bags can only ever be bad, that is the only aspect of their various material realities that is made present. But bags are also useful and sensual and vital, and they can suggest and invite other sorts of collaboration,

as the Adidas advertisement shows. And in these relations, unexpected reactions and innovations with matter might surface that generate different circuits of obligation from creative reuse to a deeper ecological thinking about stuff and where it ends up. This is more-than-human politics as active experimentation.

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Processes, Issues, AIR: Toward Reticular Politics

Michael Dieter

Politics is active experimentation, since we do not know in advance which way a line will turn.

(Deleuze and Parnet 103)

Conceived and produced by the Preemptive Media collective—a group consisting of interdisciplinary artists and researchers Beatriz da Costa, Jamie Schulte and Brooke Singer—*Area's Immediate Reading* or *AIR* (2006) is an ongoing experimental project that invites people to monitor pollution levels in their local urban surroundings using portable air-sensor devices.¹ Originally carried out in New York City, the *AIR* project gave participants or 'carriers' specially designed equipment to self-identify the quality of the air they breathe every day, actively tracing dangerous levels of pollutant gases like nitrogen oxide, carbon monoxide and ground level ozone. These chemical compounds, for the most part, have been identified as by-products of carbon combustion, and are directly linked to phenomena like climate change, smog, acid rain and the onset of respiratory illness. While government-based organizations such as the Environmental Protection Agency in the United States (or the National Pollutant Inventory here in Australia) calculate air quality based on highly sensitive readings of these substance emissions (along with sulphur dioxide and particulate matter), their Air Quality Index is produced through fixed monitoring spread over a wide geographic distance. *AIR* augments such official knowledge by allowing a relatively accurate estimate of an individual's personal intake or exposure within a small area over a short length of time. Although the data remains highly localised, the work of assembling this information provides a context or platform for discussion of health and environmental issues through direct participation. That the atmosphere itself is made explicit as a result of such sampling is a peculiar quality of the techno-scientific techniques used both to expand and to complicate sensation in this hybrid and experimental forum, an open-ended laboratory. The project thus can be claimed to bring about a unique model of political action and assembly: it imbricates a network of actants in a process directed toward the construction of public facts, and renders explicit otherwise unrepresented entities (i.e. particles) as stake-holders in a common situation.

¹ See Preemptive Media, *AIR*; <<http://www.pm-air.net>>

From a theoretical perspective, *AIR* can be interpreted as working in the register of what Bruno Latour calls *Dingpolitik*, a densely materialist approach to representational forums in two meanings of the word *represent*: drawing together legitimate actants around an issue (politics), and presenting a matter of concern, a *topos*, to those assembled (science) (Latour, 'From Realpolitik to Dingpolitik' 18). Construed as a response to the perceived crisis of contemporary forms of governance, this concept focuses on how emergent, material, collaborative and complex dynamics have become important topics for thinking of new ways of acting politically. In general, *Dingpolitik* can be seen as marking a shift away from targeted forms of tactical intervention or 'resistance' towards modes of networked assembly, projective action and the participatory assembling of social issues. Here, problems frequently emerge between the structural persistence of these distributed formations (especially their processual or non-representative nature), and the ongoing necessity to account for movement, contingency and change. Quite simply, there remains a question of how to inaugurate broadly collective or participatory action against such highly unstable, entangled and distributed issues such as air quality and environmental health. According to Latour's proposal for democratic reform, we require a new stylistic grammar that can effectively mediate the convergence of political, artistic and technical representations ('What is the Style of Matters of Concern?' 16-32). This article explores the grounds for such an *eloquence* of reason by outlining its implications for techno-scientific interventions, especially in terms of what political philosopher Noortje Marres calls formatting issues. I suggest that her concept of the *issue network* is a useful reworking of the democratic impulse of Actor-Network-Theory (ANT) influenced approaches to political action by focusing on the structuration of controversies at the limits of institutional overlap. Here, the *AIR* project is used as an exemplary case study of sorts, an example that can illuminate links between network experiences; the relations between affective, material and reflexive dimensions of socio-technological ensembles; and our capacities effectively to gauge matters-of-concern.

Reticulation

Like a great deal of new media art, the work of Preemptive Media openly challenges stable institutional, disciplinary and technological boundaries. As a techno-social experiment, the *AIR* project operates between several interrelated spheres, being funded by the Eyebeam Gallery and Lower Manhattan Cultural Council, but functioning as a subsidiary to government-based information-gathering through the *ethos* of open-source technology, peer production and activist-based politics. The experimental features of the work, as a result, emerge not only through the investigation of pollution particles in the atmosphere, but also by the co-joining of participatory deliberation, collaboration and standardised techniques of scientific inquiry. Critically, this

desire for a polyvocal or hybrid approach to the construction of 'factual knowledge' is increasingly apparent as a concern across of a range of politically-oriented art practices. Indeed, the project lends itself to a reading that emphasizes this dimension of experimental work as an intervention of sorts. The notion of 'tactical biopolitics', for instance, has been proposed as a label for this emergent interdisciplinary field that shares the highly politicised tone of earlier forms of tactical media, but turns to an exploration of the production, distribution and deployment of scientific facts (da Costa and Philip).² This tendency can be observed in the bioart projects of groups like SymbioticA, the Critical Art Ensemble or *The Biotech Hobbyist* collective; or alternatively, in the specific trend toward confronting issues surrounding climate change addressed in exhibitions such as *AER* at the Green Museum in New York or *atmos: weather as media* at MIC Toi Rehiko in New Zealand, as curated collections of atmospheric artworks.³ While the concept of the biopolitical relates to these investigations as an intensified form of governmentality through techno-scientific, communicative or affective dimensions of 'life' itself, my account is much less invested in debates around the management of populations, than with charting a kind of pragmatics, or a turn toward things and objects evidenced by bioart – what Latour calls *pragmata* ('From Realpolitik to Dingpolitik' 38). In particular, the materiality of such aesthetics relates to their characteristics as hybrid forums, to their capacity to establish a new style for addressing distant and complex issues by opening techno-scientific, political and art-based practices to the problem of multiplicity.

Crucially, *AIR* can be described as dealing with the atmosphere as a *thing*, rather than an object. According to Latour, the difference marked by the term is a shift from discrete, bounded and transparent matters-of-fact to variegated and networked matters-of-concern. Obviously, this idea of mattering takes on a dual meaning, drawing attention both to the materiality and to the competing investments of actants that make up a controversy. However, its main conjecture is to foreground the increasing uncertainty associated with the experience of contemporary everyday life. In this respect, the role of the science as a guarantor of stable knowledge, facts and objects has increasingly been superseded by the visible and widely felt entanglements unleashed by modernity, placing emphasis on contingency and instability as a commonly experienced condition (Beck). This is especially the case where evidence of global warming, atmospheric pollution or climate change remains highly contested or held in question, or where environmental factors are under-defined in public debates. Obviously, these difficulties in confronting ecological crises are partly a result of their intensive and global qualities, through the way in which such phenomena occur

² For tactical media itself, see also Broeckmann; Critical Art Ensemble; Lovink.

³ See *AER* website: <<http://www.greenmuseum.org/c/aer/>> and *atmos*: <<http://mic.org.nz/events/exhibitions/present/atmos>>

‘at a distance’, at levels often well beyond forms of institutional articulation. Environmental issues, as a consequence, can be considered in the register of what John Law describes as *emergent complexity*—an ontological condition in which interventions shape the object of analysis across an expansive field of relations (Law 1-15). Here, the question is primarily one of confronting the multiple, a situation in which knowledge still remains ‘in-the-making’ and unbounded by stabilised regimes of power.

If distributed and complex settings have become the signature of the contemporary moment, their prominence coincides with a renewed philosophical interest in processual thought as a pragmatics of becoming. This is apparent in the current significance of *ontogenesis* for considering states in-formation, for describing ‘order out of chaos’, or the manner in which entities or public issues are created without resorting to so-called ‘cultural laws of positioning and ideology’ (Massumi 1-21). While such models are related importantly to affective politics, the notion of a partially under-defined objectivity has additionally led to an analysis of the agential effects of non-human forces; in the case of ANT, to an analysis of techno-scientific practices as ‘politics by other means’. From the perspective of Latour, in particular, a demand for the rights of objects can only be made after realising a mutual entanglement of the human and non-human. Here, the social is experienced foremost as a becoming, in the sense of grappling with issues that appear unprecedented, without clear boundaries or demarcations (i.e. ‘matters-of-concern’). The distribution of agency between entities is, therefore, registered by taking into account the ongoing uncertainty of such groupings as they come to be represented. This work of assembling, of interconnecting and dispersing—a dynamic that both informs and dissolves meaning or representation—is posited by ANT, *in media res*, as the opening stage of analysis (‘Reassembling the Social’ 27). For Latour, ‘the network’ becomes a kind of medium, or more accurately, a concept that makes legible the actions that contribute toward stable definitions or actualised knowledge. Rather than a pre-defined structure or thing ‘out there’, the actor-network resembles something closer to the rhizome of Deleuze and Guattari for designating a series of translations or *transductions* (*A Thousand Plateaus* 3-25). This sense of relational activity has led to unique ANT-style accounts of laboratory experimentation, urban planning and economics, eventually forming the basis for an overarching critique of the constitution of Western modernity itself (Latour, *We Have Never Been Modern*).⁴ More importantly, the concept of the network as ontogenetic *allowed* such innovations precisely by passing over gridlocked binaries of structure and agency to focus on an analytics of movement itself.

⁴ See also the influential or ‘mythical’ case studies on microbes, scallops and reefs (Latour *Reassembling the Social*, 106).

In its own way, techno-scientific projects like *AIR* work through this ontology: they combine dispersed elements into particular consistencies in order to bring about emergent fields of inquiry. Positioned in relation to the field of new media art, this collective experimentation with scientific facts is specifically based on the translation of peer production models usually associated with software development into contexts that are not abstractly digital or exclusively concerned with the characteristics of code. In particular, the influence of the free software movement as a development based on the collaborative ‘tinkering’ with distributed technologies, and opening out of black-boxed devices to participatory modification, is a central feature of these practices (Berry). This kind of collective assembling or projective political action is apparent with the *AIR* project in the form of a networked topography between actants and affordances. By linking environmental sensors, airborne pollutants, GPS (Global Positioning System) tracking devices, individuals as carriers, information visualisations (through the Processing software), Internet-based applications like GoogleEarth and so on, the overall outcome is materially to induce a political effect on an emergent scale, rather than according to pre-formatted technics of deliberation. Indeed, the construction of this work might be understood through the notion of ‘media ecology’ as a mode of amplifying connectivity and systemic agency—for instance, what Matthew Fuller describes as the capacity for *standard objects* to transcend their material limits when relationally composed as a process of individuation (*Media Ecologies*). This notion of linking together technological affordances opens out analysis to consider the various utilitarian protocols that allow for material energies to flow across variegated networks. From an industrial perspective, the shift from a code-based aesthetics of digital objects to an ecological materialism is evidenced by the use of Arduino as an electronics prototyping device based on flexible, easy-to-use programming—an innovation cited in discussions toward open source *hardware*, infrastructure and architecture (Fuller and Haque).⁵ For the *AIR* project, the pursuit of political action is not directed by any purist idea of contested resistance, but through an arrangement as a hybrid forum—an assemblage of various agential forces. *Pigeonblog*, a related endeavour by Beatriz da Costa, Cina Hazegh and Kevin Pronto, takes this approach further by enrolling homing pigeons as carriers of environmental sensors, an example of inter-species co-production of environmental knowledge.⁶

Naturally, a major aspect of the *AIR* project involves debate and discussion in this exploration of technical devices. Since the aim to raise public awareness of health and environmental degradation occurs through collective techno-scientific action, such discursive components are combined with a critical understanding of informational circulation. As Beatriz da Costa of Preemptive Media explains:

⁵ See Arduino website: <<http://www.arduino.cc/>>

⁶ See <<http://www.pigeonblog.mapyourcity.net/>>

Activist pursuits can often have a normalizing effect rather than one that inspires social change. Circulating information on 'how bad things are' can easily be lost in our daily information overload. It seems that artists are in the perfect position to invent new ways in which information is conveyed and participation is inspired. (da Costa 379)

Indeed, even the use of informational networks such as blogs and websites is arranged critically to perpetuate the work in components by archiving key techniques, source code, data collected and the standard devices utilised. The *openness* of the work is based on this connectivity, where the digital becomes simply one vector in a communicative space of interaction, where meaning emerges through both discursive and material energies. Félix Guattari influentially described these forms of 'mixed semiotics' as processes that refer to an ethico-aesthetic paradigm—they facilitate choices, they require decisions at every step, but function thoroughly as enmeshed networks of interaction (assemblages), where every movement resonates throughout a field of similarly responsive forces which feed back, reshaping perception and sense (Guattari 1-32). The ethico-aesthetic is precisely the terrain for developing a style appropriate to matters-of-concern, foregrounding a processual and experimental approach to formulating collective issues that marks a distinct break with representational modes of politics as such. Of course, the *AIR* project can be formally conceived as a kind of amateur data collection, but its actual significance lies in the participatory work of documenting and formalising this knowledge. While the project relies on institutional structures and technical protocols for support, its operation strives to exceed both as a social platform. I suggest this be seen as a capacity to *reticulate*, to ally heterogeneous actants into a resonant and open-ended consistency that enables replication and further modification.⁷ As a method of engagement, I want to suggest that reticulation speaks to *Dingpolitik* by confronting multiplicity through the inauguration of a collective activism.

Formatting issues

By foregrounding complexity, the trend toward tactical biopolitics or techno-scientific art can broadly be seen as a concern with distributions of agency found in ecological politics. Given the hybrid nature of these emergent practices, however—between institutional and disciplinary formations—there remains a question of how such reticular action might be understood specifically in political terms. In Latour's conception of 'the parliament of things' and 'making things public', the reformation of political forums is largely framed through a democratic paradigm based on the hierarchical and exclusionary composition

⁷ For instance, Preemptive Media has reproduced the *AIR* project in capital cities across Australia, the United States and Belo Horizonte, Brazil: <<http://www.pm-air.net/>>

of governance (Latour, *Politics of Nature* 128-83). To describe the projects of Preemptive Media primarily as a *democratic* response to environmental concerns in this mode would seem to conflate central traits of co-emergent and participatory assembly with the procedural abstract logic of institutional governance itself. As Marres has observed, this general approach to politics from ANT-based perspectives remains underdeveloped to the extent that theorists such as Latour or Michel Callon have criticized the subsumption of the objects of science by notions of method in traditional philosophies, but have not yet extended this same criticism to prescriptive accounts of democracy: 'they do not criticize the widespread preoccupation with the "method" of democracy: participatory procedure, but outline such procedures themselves' (Marres, 'The Issues Deserve More Credit' 764). This is especially the case with the overarching commitment to 'the composition of a common world', since the entangled, risky and highly contingent objects of techno-science differ in crucial respects to the representative models of classical and republican theories of democracy.

Nevertheless, certain aspects of ANT methods are especially useful for understanding the political dimension of *AIR* as media ecology. The project's ontological grounding consists in tracing multiplicities by contouring the practices, statements, the material and spatio-temporal states that define local area pollution, 'the matter-of-concern'. As in Latour's assemblage theory, *AIR* seems less concerned with questions of democratic procedure, than with following experimental approaches to specific, local controversies, and with diagramming how tensions arise from a multiplicity of forces, including those entities (breathers, pigeons) previously invisible within or excluded from representative arrangements that now return to spark disagreement and contestation. For Marres, similarly, *issues* should become the site of theoretical investigation for *Dingpolitik*, rather than attempts to renovate democratic institutions. Like *AIR*, her argument is for an adequate understanding of the hybrid composition of representative arrangements themselves. The implication is that the entanglements produced by modernity, such as air pollution, can now be widely sensed as *failures* of these institutions to effectively contain controversy, since ecological crises overflow the boundaries of their constituencies. As da Costa explains in relation to the collaborative work of biomedica activist projects, a fundamental characteristic of such work is a dialogue with those actors 'negatively affected' by research into biomedical, environmental and agricultural domains. The interest of Preemptive Media is, therefore, not focussed on 'the active involvement in changing people at play in taking command of the various institutions through which power is executed, but rather the radical undermining and redefinition of these institutions themselves' (da Costa 375). Indeed, the perceived need to open 'the hallowed halls of science' to collective negotiation is a task explicitly addressed by critical media artists in their move to engage with the life sciences (Critical Art Ensemble 59). Here lies a recurring question

of how divisions of agency across distributed publics both incorporate and exclude—for Latour, the gaps formed in the combination of ecological thought with representational modes of political organisation. This is a central problem for reticular politics, since the nature-cultural studies approach to ‘politics-in-the-making’ is by no means innocent: it can be described as broadly inclusive, but is both directed and hierarchically composed. Emphasis needs to be placed, therefore, on the capacity to think through processes of assembling the collective, particularly on the ‘potential injustice’ of labelling enemies to the common world imagined by Latour (*Politics of Nature* 177).

In her reading, Marres proposes the concept of the ‘issue network’ to address these under-defined aspects of contemporary politics in a *cosmopolitical* frame. She argues, in particular, that ‘issues’ link together the fragments of the political left after the displacements of globalisation in the neoliberal era (i.e. the decoupling of the state from civil society), along with the distributive effects of techno-science and the rise of participatory media. In this situation, we might say that issues can serve as guides to the appropriate sites, subjects and forms of political activity (*No Issue, No Public* 5). There are three major claims at stake in this definition: actants should be understood as connected by a shared interest in an issue, rather than necessarily sharing ‘thick’ cultural bonds; that distributed politics entails the collective *formatting* of a concern in order to acquire resonance (as feedback) in public spheres; and that this process be conceived as operating in an open space of agonistic interactions (i.e. a terrain of conflict) (Marres, ‘Net-Work Is Format Work’ 5-12). While this last trait might be understood as linking non-governmental (tactical) politics to more formally institutional modes of deliberation, it should be noted that relational differences are still central to the enrolment of associations toward the articulation of controversies. That is, crucial distinctions are reinforced through asymmetries, by shifts in the distribution of resources and variable conditions across media ecologies of human and non-human entities, and by the role of expertise in the ‘skills of the collective’ (Latour, *Politics of Nature* 128-183). Indeed, such unevenness is a common feature of open and dynamic systems, a trait consistently identified by network analysis and the theorisation of techno-politics more generally (Terranova). With issue networks, these variations are recognised foremost as contributing to the formalisation of things—a terrain, however, that can only be sensed when politics is expanded out from ‘pre-formatted’ modes of procedural deliberation.

Significantly, in these various exchanges, in this experimentation with structure, Marres identifies a potential utility for ‘creative practices’ as conducive to developing contextual framings: ‘an aesthetics that could ensure a place for issues in political discourses’ (‘Net-Work is Format Work’ 14). In her account, decisions can only be based on quasi-objects, or partial beginnings that drive the reticulation of issues, but only in terms of an initial competence to sense

their conditions of possibility. This coincides with the important caveat offered by Latour for the diplomatic significance of confronting entities previously rejected from the collective during the work of its composition (*Politics of Nature* 209-217). Aesthetics can, therefore, be seen as a key enabler for apprehending the movement of an actor-network, not in terms of a discipline making formal inquiries into ‘beauty’ or the ‘sublime’, but closer to what Geert Lovink and Anna Munster have described as a reinvigorated ‘philosophical praxis investigating the very conditions of contemporary life’ (‘Distributed Aesthetics’). Here, projects such as Preemptive Media’s *AIR* find a foothold in the organization of reticular politics and formulation of issues across distributed contexts, especially through their capacity to make inquiries into the status of relationships around us, accumulating invisibly, but garnering agency in an unresolved situation. To anticipate a place for the aesthetic is, in this sense, to highlight the vectors through which networks extend as emergent forums.

Conclusion

Atmosphere relates to a particular history of thought, to specific arrangements of sense, to matters-of-concern. In a recent short piece, Latour invokes a basic genealogy of air as a substance energised with particular meanings over time, brought into existence through historical lineages that now weigh on the present with ever-greater urgency. Drawing on the spherology of Peter Sloterdijk, he considers the example of chlorine gas used during warfare at Ypres in 1915, when a grey-green cloud of poisonous chemicals drifted over troops, forcing them to break ranks or suffocate as the oxygen was gradually removed from the trenches (‘Airquakes’). This sudden sense of something being missing, of being reconfigured, is described as the moment when air entered ‘a list of what could be withdrawn from us’. The event of things changing, of breakdown, conveys the political stakes of a co-fabricated reality between human and non-human. These are the moments when the fragility of the environment as ‘life support’ comes to the fore and becomes magnified. This experiential ontology, once repressed by attempts to frame nature by abstract representations and stable objects, is not founded on ‘the scenography of empiricism’, but on affect and movement:

Feeling is more roundabout; it’s the slow realisation that something is missing. It resides, in a way, behind you, behind your back, or maybe even outside you in an untouchable greenish cloud—something you don’t exactly understand and in charge of which people can only see through peripheral vision. (Latour, ‘Air’ 105)

Sensing from the periphery refers to a condition in which an environment is explicated and folded over as a process. Indeed, the very notion of perceiving the boundaries of this enveloping movement is congruent with the role of the

network as a concept by which things momentarily glimpsed continually fall out-of-frame through their incorporation. Just as these forces of emergence and absorption must be opened out and properly understood in order for maintenance to occur, so too must our conception of political action through exchanges with complex socio-technological ensembles. These are the far-reaching consequences of the secondary materialism cited by Latour: whatever modes of support we rely on to spatialise fleeting conditions of a fragile, technical and public contention, ontogenetic or emergent forces are always at work. Projects like *AIR* remind us of this through their grappling with issues: they maintain an objective incompleteness that remains central to the development of a reticular politics, and the capacity to face the problem of multiplicity.

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Climate Change and the Problem of Representation

Emily Potter

How do we know climate change? How do we encounter its reality? This question brings to mind a history of scepticism and denial—those who ask ‘where is the evidence?’ against scientific efforts to model and map out predicted temperature rises. Yet the word prediction is telling here: how can you know something that is still unfolding? In order to respond to the manifesting consequences of environmental change, there is an imperative to capture and convey change in the midst of process. Somewhere between scepticism and prediction is the problem of representation—a concern that unites scientists and artists in the desire to say something of truth about the world. Signs of change obsess us and we look to science for orientation through these. Poetic representation is valued as a tool of communication and inspiration—to educate, warn and motivate responses. Yet as the consequences of climate change continue to manifest, representation sits ambiguously in a context of these materially-grounded concerns. This paper offers a rethinking of the role of representation in environmental discourse. It suggests that rather than representation’s inability to access the real, the more pressing issue is the relationship between humans and the non-human environment that modes of representation assert. It is ultimately our ontological and epistemological traditions, and the work of representation within these, that determine our distance from or proximity to the elements of a transforming ecology.

Representing climate change and calculating environments

Appeals to the authority of scientific representation are common in the public discourse of climate change: data—a translation of scientific findings—conveys environmental conditions, and is harnessed in defence against climate change denial. ‘Good science’, defined by Barry Brook as ‘evidence and ideas that are repeatedly supported by observations, experiments and models’, is sought to defeat the ‘charlatans’ and to guide our appropriate responses to the issue (Brook 30). Novelist Ian McEwan similarly articulates the value of data relating to climate change in the public realm, arguing that ‘[w]e need accurate representations of the state of the earth. The environmental movement has been let down by dire predictions, “scientifically” based, which over the past two or three decades have proved spectacularly wrong... We need not only reliable data, but their expression in the rigorous use of statistics’ (McEwan). McEwan also points to the associated role of discourse, text and ‘talk’ with scientific information, not

as a secondary thing, but as a process in its own right: 'Can we avoid what is coming at us, or is there nothing much coming at all? ... Is this the beginning, or the end? We need to talk' (McEwan). In this account, what is first conveyed in scientific data must also be narrativised for public debate and understanding. Other commentators describe the relation between scientific and discursive or artistic representation more decidedly. Bill McKibben, for example, suggests the value of the latter is to overcome the instrumentality of science in order to work on affective rather than rational levels. 'We can register what is happening with satellites and scientific instruments', he writes, 'but can we register it in our imaginations, the most sensitive of all our devices?' (McKibben). Calling on creative artists to engage with the topic, McKibben wonders 'what emotions should the playwright play with—fear? Guilt? Sure, but not only those... There also needs to be hope as well... [These] don't have to be romantic visions, though a little romance wouldn't hurt' (McKibben).

In such accounts, these different modes of representation—the positivist and the poetic—fulfil different functions, but connect on a significant level. Both are understood to offer access to, and to speak on behalf of, a singular nature or environment. Representation becomes a means of reconciling 'inner' and 'outer' worlds of experience (McKee 534), and in this context facilitates a political ambition, enabling us to act on nature's behalf in the face of human-authored change. The inheritance of western thought post-Descartes is, of course, evident here, with its conceptual division between human and non-human, culture and nature. Within these binaries, power is allocated unevenly, with the capacity to *do*, to have creative impact, and to author, invested in the human. Where the non-human environment 'acts'—for instance, in the case of a 'natural disaster'—it is interpreted with the human at the centre of concern: what does the occurrence mean for humans? How it can be read or interpreted in order to understand *ourselves* better? This tradition does not preclude human and non-human entanglements, but it interprets these as reflecting human power and indicative of human culture. Two examples illustrate this way of thinking; while not emblematic in any totalising way, they do indicate a tendency to see the work of representation as mediating an implicitly passive nature through the frame of culture.

First, certain conventions in ecocritical work—a field that traditionally concerns itself with the textual production and mediation of environmental discourse and human/non-human relations—position the question of how humans define and represent the Earth as central to their analysis. What humans do to the non-human world, and the meanings of these actions, is the focus of its critique and revision, while poetic representation is positioned as a window to the material real. In this kind of eco-critical practice, there is an implicit distance implied between the reader and the world, and it is on the 'readerly' side that meaning is made. Greg Garrard's *Ecocriticism* demonstrates this point. Garrard claims that

in its 'widest definition... the subject of ecocriticism is the study of the relationship of the human and the non-human, throughout *human cultural history* and entailing critical analysis of the term "human" itself' (5) [emphasis mine]. While human/non-human relations may be the concern here, it is the work of culture to imagine and interpret nature that is seen to offer us insight. Nature—or the non-human—is not an active participant in the process. 'Environmental problems', Garrard continues, 'are the outcome of an interaction between ecological knowledge of nature and its cultural inflection' (14). This view suggests that environmental conditions ultimately hold a mirror to culture, and are defined by a transaction between different understandings of the world.

Second, evident parallels exist between these textual traditions of ecocriticism and broader discourses—in a range of professional, theoretical and creative fields—of 'environmental communication'. These frequently employ a bifurcated view of the non-human world as something that exists outside us: it is the human who acts (informed by communication), and the environment that is acted upon. Appeals to 'care for the environment' tend to reveal this logic, as a recent water saving campaign in Victoria shows: 'Climate change and the ongoing dry conditions mean the way Victorians value and use water must change forever. We are in a serious situation and every person, every day, can make a huge difference by adopting simple water saving solutions' ('Our Water, Our Future'). Such renderings of communication as a transformative conduit between human activities, especially in environmental policy rhetoric, are echoed in a range of discursive and poetic sites, from environmental lifestyle literature to environmental art (Potter). I want to explore this now briefly through the 'ecological footprint', a signature concept, tool and new measure of citizenship that has risen to prominence in the popular environmental imagination. The footprint illustrates well the convergence of the positivist and the poetic modes of representation in the service of a collective political project—or as Latour says, of 'making things public' (Latour, 'Dingpolitik'). It also suggests all that is absent, all that falls away, from a calculative view of the world.

The ecological footprint is presented as a measure of human environmental impact, based upon amounts of energy consumption, land and water use and waste production. The concept began as a collective one, developed to assess through spatial representation what Andrew Light calls 'the full ecological burden of cities on the environment' (44). In this tradition, maps are generated using GIS (Geographic Information System) data and are coupled with statistics of consumption to assess the ecological footprints of cities against their actual physical boundaries. In most cases in the global north, the footprint far exceeds these boundaries. The figures that are generated through this process—for instance, that the ecological footprint of London is larger than the size of Britain (Light 46)—represent the problem and call for a solution. They convey the apparent, unsustainable reality of our culture.

A recent plethora of internet-based calculation tools, and even multiple response Q&A tests, have translated the footprint to the local level, where it becomes a sign for a household, business or individual's environmental relation. Carbon calculators offer such an interpretative function. As *The Rough Guide to Climate Change* explains, 'just as new dieters keep a food diary, an excellent way to start reducing (our) carbon emissions is by using a carbon calculator... Simple online tools allow you to calculate how much carbon each activity in your life generates and how your total compares to those of the people around you and elsewhere in the world' (Henson 313). The idea is that not only will the ecological or carbon footprint translate ecological processes into directed data; ultimately, it will translate into action. Through the reading of this indexical sign, the discourse suggests, individuals and publics alike will be inspired to alter their environmental practices.

The ecological footprint has become the emblem of a new site of political representation—ecological citizenship—within which the environment is understood as a 'public good to defend' (Sáiz 164), and the concept of 'rights' is expanded to incorporate the non-human world. For humans, the traditional focus of citizenry rights shifts to the responsibility, or obligation, to service these non-human rights, as well as those of future human generations. The appeal to 'tread lightly' upon the earth has become a slogan for this revised notion of citizenship, eschewing human dominance and moral disconnection from the imprint of our actions.

The problem with this rendering of human/environment relations is that the footprint, as a representation of environmental change, is singular and un-dynamic. It instrumentalises relations between the assemblage of people, places, environments and emissions that it encompasses, excluding less calculable manifestations of impact and effect. Moreover, it pacifies the environment, operating on the assumption of a non-discursive relationship between human action and environmental imprint. Thus while the non-human world is attributed rights, it is still accorded no agency. Indeed, in the image of the weighty foot upon the earth, the ground is configured as de-creative—its only response is to come undone.

Paul Carter writes in *The Lie of the Land* about the fetish of the footprint in Daniel Defoe's *Robinson Crusoe*—how the single footprint that Crusoe finds in the island sands throws his world into chaos. Signifying presence where he previously perceived absence, the footprint generates a series of ontological anxieties: Crusoe is not alone as he had thought. But like the ecological footprint, the signifying circuit of the impression in the sand means that it will always link back to him. As Carter contends, 'Crusoe holds no dialogue with his surroundings, only with himself'; 'the environment only signifies in so far as it supplies him with a *tabula rasa* whereon he can inscribe a hemisphere with himself at its centre' (10). What

Carter intuitively from this sequence is the dangerous capacity of signs—‘as something standing in for something else’ (11)—to circumscribe what counts as knowledge and to internalise a single reality. The most disturbing thing about Crusoe’s fixation with the footprint is that he does not ask, ‘where is the other one?’ It is just the single footprint that concerns him. Because of this, he never opens himself up to an ecology of relations that two footprints or more, diffusing into mobile patterns of presence, would suggest. His interpretive frame shuts out contingency and uncertainty, and the supernatural power of the sign is affirmed.

What is consequently lost to Crusoe is the capacity to see himself as part of a continually composing place. The ground beneath his own feet is not firm, but vibrates in a network of human and non-human traces. A single footprint in the sand can suggest a deceptive present that interpretation seeks to master; but it can also reference the beginning of a dynamic and material encounter between body and earth. It means that the single footprint—and the truth that it captures—manifests through the ‘process of artful deletion’ (Law 88). In this refusal to see the foot as singular, absence and presence become ambiguous states. A footstep in the world thus calls up an environment of traces, a ‘hidden geography’ of gatherings and assemblages (Latour, ‘Dingpolitik’ 15).

This suggests that there is no certain place from which we can survey the world and uncover its truth. It also suggests that poetics are essentially relational—they indicate the proximity or distance between things by operating in an ecological fashion, as always partially realising a picture of reality because they constantly allude to their connected context, beyond—but related to—themselves. Methods of representation are thus not impartial tools. To recognise this means to embrace quite a different way of configuring knowledge that undoes hierarchies of expertise, authorship and presence.

Natureculture and more-than-representational thinking

Natureculture theory offers a challenge to the centrality of humanness for realising reality in much representational thinking. This theoretical reorientation of the terms in which human/non-human relations are considered makes a shift from considering the environment as a determinate thing that we represent, to approaching it as ‘a figure that mediates a network of sociopolitical, economic, and natural forces’ (McKee 541). Natureculture theory thus decentres the human subject, not so as to deny it actancy or affect—as the fantasies of some environmentalism would have it: the notion of ‘pristine wilderness’, for example—but in order to recognise co-constitution, and to flatten out hierarchies of impact and effect. Its conceptual ambition is to unsettle the ecological arrangement that would situate the human as the nodal hub of activity and meaning-making, and instead, to understand the human as part of an assemblage of what *is* reality. A natureculture is just this: an assemblage of ‘people, things,

laws, politics, techniques and ethical strategies' (Muecke 132), which means that no one participant in this ever-moving network has an omnipotent purchase on the truth of the matter.

While natureculture theory is not new in pointing out the entwined destinies of humans and non-humans (for ecocriticism does this too), its innovation is to question the fundamental categories through which we address human/non-human relations and to see these relations as always co-constitutive. 'Nature' and 'culture' as pre-given categories are thus questioned in this theoretical frame, not discrete entities involved in relations of power, but rather referencing an assemblage of non-human and human entities and forces. Bruno Latour, an initiating figure of natureculture theory, affirms this: 'contra appearances, nature is always entangled with culture and society' (in Law 120). Here on the level of the 'thing' or the 'object', a gathering of different phenomena and energy produces its reality in temporal ways—temporal because the thing's constitution remains open-ended. This thinking confronts the terms in which environmental debate frequently takes place, and the assumptions of human activity and non-human passivity upon which these draw.

Recently, an increasing frustration in the academy with the limits, exclusions and sometimes the conceit of representational thinking has occasioned the rise of what have been termed 'non-representational' and 'more-than-representational' thinking, particularly emerging from the humanities and social sciences disciplines whose work continually comes up against the recalcitrance of matter—for example, cultural geography, the philosophy of science, and creative arts research. These feed into natureculture theory. They emphasise more-than-textual ways of knowing the world; knowledge emergent from embodied process and material practices—or to put it another way, the dance of feet is the site of interest, rather than the single footprint. This confronts the transcendent authority of calculation.

John Law argues for an alternative view of how we know material reality based upon this recognition of what calculation can never capture. He writes, 'the world is not to be understood in general by adopting a methodological version of auditing... [It is] not ... a structure, something we can map with our social science charts. We might think of it, instead, as a maelstrom or a tide-rip. Imagine that it is filled with currents, eddies, flows ... and moments of lull and calm... Certainly there are moments when a chart is useful, when it works... But a great deal of the time this is close to impossible' (6). Latour's concept of a gathering reality models the different and mobile geographies of knowledge that resist such auditing. This view refuses the translation of fact into reality. Before the question 'what do we know?', Latour asks 'how does what we know come to be?'

Facts, in his view, provide a paltry representation of reality. Rather, facts gather with a range of other material and immaterial energies, entities and happenings to produce what Latour terms a 'matter of concern'. A range of matters of concern collide in temporal ways to constitute what he then defines as 'the state of affairs' (232). The matter of concern—climate change, for example—is the focus of study, but unlike a matter of fact, the matter of concern refutes any claim we would make to speak its truth entirely. It is emergent from an assemblage of expertise, feelings, visions, interests, histories and materials, and we can never know a matter of concern in a single way. Its reality is continually manifested as these phenomena gather together.

This challenge to the ascendancy of a singular reality is considered by Latour to be a way of renewing empiricism rather than leaving it behind—an empiricism that is methodologically expanded and locally situated within an ever-unfolding network of relations. John Law's account of the 'messy' textures of reality (2), in the context of representational research traditions, similarly situates knowledge in a provisional field of daily experiences, encounters and methodological interventions. He argues in reference to our attempts to make sense of the world, 'events and processes are not simply complex in the sense that they are difficult to grasp... Rather, they are also complex because they necessarily exceed our capacity to know them' (6). That is, no matter how much detail and technical expertise goes into a representation like the ecological footprint, it will never capture the mobile energy, the lived, ongoing relations with the world, of the active ecological citizen. But how exactly can we derive a representative politics from this view of assembling reality? The response that I want to offer to this question also suggests a way of rethinking the work of representation—not as mediating the world and inspiring behaviours accordingly, but as actively contributing to the production of publicness and new narratives of responsibility and relation that can emerge in this space.

Representation in the public realm

Rather than a pre-existing identity that representation affirms, ecological citizenship is more usefully understood as emerging in temporally contingent and discursively mobilised moments of collective response. Both material and ephemeral, it arises from the kind of gathering formation that Latour describes, where interests, energies, technologies and materials assemble around a matter of concern. And most importantly for this reappraisal of representation, the public that responds to climate change is brought into being by the work of narrative gathering with a range of other forces and material things. As such, it is neither a permanent or pre-existent entity: it comes to be, according to Michael Warner, 'by virtue of being addressed' (67). Gay Hawkins' account of the POOO (People Opposed to Ocean Outfalls) protests of the late 1980s—which were a response to the high levels of human waste pollution along Sydney's

beaches—demonstrates the ways in which a temporary public, called up by ‘a vision of a contaminated world’ (Hawkins 5), conditionally enables ecological citizenship, rather than impressing it as a sign. The protests saw discursive spaces of real relations and political possibilities emerge, where issues of infrastructure and social organisation assembled with the ocean, the sand, the air, and an embodied, visceral response to a smelly beach.

Thinking about ecological citizenship as produced by a contingent gathering of humans and non-humans has strong implications for the representative role of humans in an environmental democracy—that is, to speak and act on behalf of its non-human constituency. In the terms of environmental management and the commonly understood imperatives of ecological citizenship, the environment is a non-citizen that we represent. We determine the framing and limits of environmental rights: it is about what rights *we* extend and police. But an ecological citizenship in the expanded, materialised and more-than-representational sense indicated by the POOO protests collaboratively produces a new political vision.

The possibilities for new models of democratic participation are something that concerns natureculture research as it foregrounds new alliances between human and non-human interests and poses questions regarding how political spaces are constituted. This is also what a rethinking of representation enables. Natureculture theorists (for example, Latour, Hinchliffe, Whatmore and Hawkins) are challenging humans to form ‘government’ with the non-human world, and to recognise the capacity for ‘co-fabrication’ (Hinchliffe and Whatmore, ‘Living Cities’) in human/non-human alliances as a strategy for innovative political and environmental futures. If we understand reality as a co-production of human and non-human forces, then the ‘knowledgeability’ of nonhumans is something that the political process cannot ignore: to quote from Hinchliffe *et al*’s work on post-representative political ecology, they become ‘fellow subjects rather than performed objects’ in the making of the world (Hinchliffe *et al*, ‘Urban Wild Things’ 653).

Allegories

I want to end with a final reflection on the tension that I have highlighted between how the world emerges and what we demand of representation. The hidden geographies of assembling reality cannot be captured by representation, but they can be materialised as a discursive trace, for instance in the fleeting emergence of publics that can manifest response to environmental change. Law articulates these possibilities when he insists upon the allegorical aspect of empirical work that manifests, as he explains it, as an ‘alternative politics [which] softens and plays with the boundaries between what is Othered and what is made manifest’ (93). Allegory, as a poetic practice, offers a particular and unsettled way of investigating the world. It gives us important glimpses of the

multiple sites of 'out there'. As a trace, allegory points to other traces rather than to absence. It is an active agent, shaping what we know: a tool that enables us to read 'between the lines' of any apparent reality (94) in ways that acknowledge the multiplicity of presence—what is gathered together in this assemblage. Never attempting to fully capture or present a situation or relation, allegories make manifest realities '[that] do not necessarily have to fit together' (Law 90). They keep the possibility of alternate meanings always in play.

Take the ecological footprint. As a sign, the ecological footprint is an impression upon the earth. It represents a fixed boundary between human and non-human life. It is a narrow, single-voiced story of how things are, and it refuses the messy relations of scientific and poetic practice. It is non-processual and irrevocable—until, of course, we smooth out the ground erasing all traces: the only alternative provided. As a trace, however, it records a point in an ongoing entanglement; it becomes, instead, a witnessing that is part of a shifting ecology. In this sense it is an impression made in the midst of a gathering, not outside of it. What is made manifest is something partial, something on the move, and something that gathers with a multiplicity of presences.

Approached allegorically, the footprint becomes part of a pattern: it calls up the ground, the tread of the shoe, the ripple of motion, the air, and surrounding sounds—these presences made manifest forbid a single account of how things are. The belief that reality is coherent defuses the productive and uncertain potential of representation. This is the difference between viewing the world as product or process. Text doesn't just mediate the world, but is active in its making. At the same time, of course, we know the world in more than textual ways. We live materially, we run up against non-human recalcitrance, and we respond to environmental textures. The demands of environmental change expose the limits of representation but they also inspire different ways of thinking about how we come to know. Through a revised approach to representation we can keep a host of realities in tension as we seek to find meaning. This won't mean that we know climate change and its impacts in any final way. It might mean, however, that we have registered its composing complexity, and taken a stake in what it will be.

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Social Construction for the Twenty-first Century: A Co-Evolutionary Makeover

Zoë Sofoulis

Introduction

What do we do when good ideas reach their use-by date? The social constructionist thesis was valuable to me as a young 1970s feminist. It provided a platform from which to question, critique and change ‘naturalised’ views of gender and social position. Through engagement with feminist ideas, as well as structuralism, semiotics and discourse theory that emerged in the 1970s and 1980s, I became committed to notions of how categories of gender, race and class, and their associated social and economic functions, were not essential or natural, but were products of historical and material arrangements and power/knowledge formations. There was a liberatory appeal to social constructionist arguments—such as those inspired by Peter L. Berger and Thomas Luckmann; Erving Goffman and Michel Foucault. The specifically gendered social constructionist arguments of Simone de Beauvoir were also significant, especially her asseveration that women were made not born. If things were socially constructed, they could be re-constructed: social change was possible. By changing people, we could change society; conversely, by changing society (which is understood as equivalent to language, or discourse), we could change the kind of people society constructs. For example, the Sapir-Whorf hypothesis (Whorf, Sapir)—that the worlds we perceived were bound by the limits of our language—was an inspiration for a feminist social experiment to construct a different social reality by resisting sexist language and inventing alternative forms.

Social constructionism was the weapon of choice against the traditional idea that, for those with gestational capacity, ‘anatomy [or biology] is destiny’. Anti-biological-determinist arguments became entangled with political and legal anti-discrimination struggles that sought formal equality and choice for women and ethnic minorities, and remain relevant wherever repressive economic, political and religious agendas target populations because of their supposedly ‘natural’ or ‘given’ characteristics.

However, that a certain standpoint is or once was politically useful, necessary, or expedient does not guarantee its continued relevance as realities change, complexities emerge, and new concerns arise. Some limits to social construction became apparent in the early stages of the ‘corporeal turn’ of the 1980s, when the emphasis was on how the body was represented, and/or inscribed by society.

Phenomena of ‘embodiment’ or experiences of the ‘lived body’ were overshadowed by theories of the body as a social construction (Crossley; Turner, ‘Embodiment’, ‘Body’). These tensions were played out within and around the work of Judith Butler, whose *Gender Trouble* mobilised Foucaultian discourse analysis to unravel the sex/gender distinction (one version of the nature/culture dualism) into mutually defining co-constructions, whilst also re-animating the liberationist spirit of social construction through a performative theory of gender. Although Butler’s *Bodies that Matter* responded to critiques of the earlier book’s lack of attention to materiality and embodiment (Osbourne and Segal), many felt it was still too dependent on discourse and representation and did not sufficiently grapple with ‘the in-itself of matter’ (Kirby, *Telling Flesh* 107-08; see also Fiaccadori and Kirby, *Judith Butler*); more thoroughly physicalist accounts of bodies and their interactive performances were needed (and were developed, eg. by Diprose).

The insufficiently corporeal focus of social constructionist accounts of the body had left many feminists with ‘a sense of disappointment in the failure really to engage with the materiality and flesh of the body’, according to Keane and Rosengarten (202). Their discussion of ‘the biology of sexed subjects’ canvasses examples of drugs, organ transplants, intersex and transsexuals to highlight the complexities and ambiguities of interactions between nature, physiology, genes, culture, technologies and human and other species bodies as understood in the twenty-first century—complexities to which Haraway’s ‘Cyborg Manifesto’ had alerted feminists a decade and a half ago, and which have been explored in a number of fields (see Sofoulis, ‘Cyberquake’)—including in conjunction with Butler’s performative perspective (eg. Hird, Giffney and Hird). People might possess organs or body parts from other people or species, or in the form of technological implants and prostheses; sex can be changed through surgery and hormones. The formerly clear scientific distinctions between mind and brain or mind and body have become thoroughly blurred (see Damasio, and for feminist implications, Elizabeth Wilson). So too the genes versus environment dualism: epigenetics¹ is now recognised alongside genetic mutation as a source of variations in cells and bodies: genes may be switched on or off in response to changing external or internal environments. Moreover, new biomedical techniques can unpredictably alter the relations of self and other along with genotype and phenotype, as illustrated by the case of a young Sydney woman

¹ The term was coined in 1942 by geneticist C.H. Waddington to refer to vectors in developmental landscapes and complex systems (Waddington, *Tools*). During the 1990s, ‘epigenetics’ began referring to ‘Nuclear inheritance which is not based on differences in DNA sequence’—contrasting with the prior ‘dogma of the invariance of somatic cells’ and models that only recognized mutations in DNA (genotype) as the source of changes in cells and bodies (phenotype)—but by 2001 it was understood that some environmentally-induced as well as developmental changes could produce changes in cells’ nuclear material, some of which could be heritable (Lederberg). More recent research has identified the precise chemistry, and revealed that some so-called ‘junk DNA’ is involved in switching genes on and off.

whose blood type and immune system inexplicably changed to that of her organ donor nine months after receiving a liver transplant (Alexander et al.).

'Social construction' was appealing in the 1960s and 1970s because society was considered mutable, whereas 'biological determinism' was anathema because biology was seen as an unchangeable, ahistorical given. But as social studies of sciences proceeded, it became increasingly apparent that the apparent fixity of biological categories (such as strictly dichotomous gender schemata) was largely an artefact of discourse that arose because scientific narratives were thoroughly pervaded by socially normative ideologies (as shown in Emily Martin's classic study; see also Oudshoorn, Hird). Moreover, for many scientists themselves, themes of mutability, indeterminacy, complexity, contingency, interactionism and context-dependency began to predominate over earlier certainties and predictabilities in knowledge of organisms and environments. As an anonymous reviewer of this paper noted, it is not only scientists of the 21st century who understand biology and anatomy as mutable: nowadays 'it is an everyday experience of ordinary people who take anti-depressants, eat GM food, use reproductive technologies, etc'.

The current anthropogenic wave of extinctions and climatic disruptions dramatically demonstrate that 'nature' is no longer a 'given' but a 'taken'. Atmosphere scientist and biogeochemist Paul Crutzen has defined a new geological era, the 'Anthropocene',² in which human activities that alter carbon, nitrogen, phosphorus, sulphur, silicon and water cycles, and remove productive lands, forests and fisheries have accelerated to 'become a global geophysical force' (Crutzen) that is likely to remain effective 'over the next 50 000 years' (Steffen, Crutzen and McNeill, 615). Public health statistics are pointing to the health and economic costs of phenomena such as extreme weather, water shortages, reduced biodiversity and lifeless oceans. All these effects result from complex multifactorial interactions that may be anthropogenic but now exceed any purely 'social' construction. These contemporary realities starkly remind us that our fates as humans are inextricably connected to the health of the world and the many non-humans on which we depend. With these drastic changes in knowledge and reality, is vehement opposition to 'biological determinism' still tenable? What is there left to fear in acknowledging that our social beings also

² Geologists had dubbed the last 10-12 (post-Ice Age) millennia as the 'Holocene' ('recent whole') period but Crutzen dates the start of the Anthropocene as coinciding with James Watt's design of the steam engine in late 18th Century, from which point 'analyses of air trapped in polar ice showed the beginning of growing global concentrations of carbon dioxide and methane'. Steffen, Crutzen and McNeill suggest we are nearing the end of the second stage Anthropocene, the post-World War II 'Great Acceleration' of human activities with deleterious but unrecognised or disregarded impacts on the planet, and are on the brink of the third stage, where at least there is recognition of impacts, but no certainty that mitigation strategies will avert dangerous climatic tipping points—leading the authors reluctantly to raise the frightening and controversial prospect of deliberate atmospheric modification to deflect more sunlight away from Earth.

express our genetic, hormonal and neuro-physical selves,³ and our epigenetic responses to contingencies in our changing social and material environments—however degraded and precarious?

Because my primary intellectual interests have centred around humans, bodies, technologies and (ir)rationality, and have been underpinned by environmental concerns, I have been increasingly drawn to constructionist frameworks that are not founded on a dichotomy between the social and the material or biological worlds. Three decades ago, Gregory Bateson helped me take first steps on a path that was later continued in readings of Donna Haraway, Don Ihde, Bruno Latour, and other actor-network and sociotechnical theorists through whom I have come to appreciate perspectives that are unafraid of acknowledging the active roles bodies and non-human entities play in our socialisation as humans (see collections by Bijker and Law, Cockburn and Fürst-Dilic, Gill and Grint, Law and Hassard, Ihde and Selinger, Latour and Weibel). According to actor network theory (ANT), human and non-human elements of systems are entities that are ‘bound together in networks [and] are at the same time, constituted and shaped in those networks’ (Bijker and Law 13); properties, capacities and powers to act are distributed across human and non-human agents. Terms like ‘material-semiotic’, ‘actor-network’, ‘sociotechnical’, ‘bio-social’, ‘co-constructionist’, ‘interactionist’ and ‘co-evolutionary’ signal post-dichotomous ways of viewing, investigating, describing and theorising the interplays of social, technical, biological and environmental factors in shaping the fates of individuals, genders and populations. Perspectives informed by systems thinking, complexity theory and notions of co-evolution (or co-construction) have emerged or been adopted across a range of fields that increasingly evade the old modern disciplinary divide between social and natural sciences lambasted by Latour in *We Have Never Been Modern*. In human geography, which has traditionally payed greater attention to heterogenous and spatialised assemblages than the more purely social sciences, some recent ‘non-essentialist materialisms’ (Anderson and Braun xiv⁴) include Nigel Thrift’s ‘non-representationalist’ thought, and Sarah Whatmore’s ‘hybrid’ or ‘more than human’ geographies.

Many readers of *AHR* will no doubt be familiar with some of these transdisciplinary paradigm shifts (including in the social sciences; see Law). However, traditional disciplinary commitments to human-centred modes of inquiry make some in the humanities and social sciences reluctant to entertain these ‘more-than-human’ perspectives, while younger scholars familiar with ANT and related ideas may not appreciate their kinship with earlier forms of

³ Including of course our ‘natural’ disposition to be social!

⁴ Anderson and Braun introduce their recent collection of human geography essays on the theme of environment with an illuminating review of successive materialisms influential within the field, citing Gilles Deleuze, Donna Haraway, Alfred Whitehead, Michael Serres and Bruno Latour as contemporary inspirations (xiv). See also Whatmore, ‘Materialist Returns’.

social construction. This paper is primarily aimed at helping both kinds of readers find bridges between human and more-than-human versions of social construction.

Viewed in the light of contemporary knowledges and material realities, social construction is looking rather outdated. To borrow the vocabulary I learned from Meredith Jones' dissections of makeover culture (*Skintight*, 'Mutton'), social construction has come to resemble a 1970s celebrity who is not 'ageing well': she's become a repetitive and unconvincing grumpy old woman who arguably needs a conceptual makeover to stay attractive and relevant. Can she once again inspire re-constructions of people, languages, practices and worlds? It is possible for her to enjoy what Jones calls a 'stretched middle age' and be re-capacitated as an ally for twenty-first century movements and policies supporting sustainability and diversity in both nature and society? I am not entirely sure.

One persuasive thinker for whom conventional forms of social constructivism seem irretrievably passé is the physicist and feminist theorist Karen Barad, who argues that both sides in 'the hackneyed debate between scientific realism and social constructivism' shared commitments to representationalism which assumed rather than questioned the ontological distinguishability of signs from their represented entities. The only question that debate left open was whether the signs represented real world things (e.g. objects in 'Nature') or were social products (805-06). Barad pursues an alternative 'onto-epistemo-logy' ('The Study of Practices of Knowing in Being' 829) that accords far more active, formative and (*pace* Butler) performative roles to matter, corporeality and the non-human. Drawing explicitly on themes of indeterminacy and interactivity from physicist Neils Bohr's epistemology, Barad pictures an ontological equivalence between real world things (including apparatus), the traces of events and phenomena that could become signs and knowledge (such as scientific data and charts), and those knowers who would seek to observe and understand these entities and traces. These co-arise and co-generate each other in 'intra-actions', defined as 'causally constraining nondeterministic enactments through which matter-in-the-process-of-becoming is sedimented out and enfolded in further materializations' (823). Intra-actions produce *phenomena* and establish the very possibility of objects and prospective knowers of objects coming into being and relating to each other—a precondition for any subsequent representational relationship.⁵ We might imagine Barad dismissing even an extreme makeover of social construction as a merely cosmetic or 'phenotypic' change. Why bother,

⁵ Thus, to caricature both authors, whereas Latour creates a 'more than human' polity by turning non-humans into quasi-human political subjects, with representatives, rights and political claims upon us, Barad's 'post-human performativity' pictures interactions (and 'intra-actions') amongst humans and non-humans as akin to indeterminate quantum events.

when her brave new 'onto-epistemo-logy' performs radical mutations and hybridisations to generate an entirely different kind of creature?

Nevertheless, driven by a mix of nostalgic loyalty towards the old trouper, a spirit of experimentation, and an ethic of 're-use', I am proposing here to leave aside Barad's intriguing approach, and attempt a renovation of the social constructionist framework. The first stage of the procedure has already begun: excavating and highlighting the interesting and complicated 'stuff' that abounds amid the ruins of old modern dualisms. The second stage is a Latourian opening up of 'the social' to admit a greater variety of socialised and socialising agents. The last procedure is reconstructive work on the idea of 'construction' to make it flexible enough to fit into a co-evolutionary model. Finally, the 'reveal': the re-vamped model is tried out with reference to issues of urban water cultures, technologies and systems, highlighting the socially shaping effects of urban infrastructures.

Procedure 1. Complex connections

Latour's polemic against the old modern project (*We have never...*) taught us to be suspicious of neat dichotomies of modern disciplines and concepts that separate human from non-human, facts from values, the material from the semiotic, and nature from culture. Those efforts at 'purification' overlook the messy hybridities, human/non-human entanglements and 'in between' states of 'naturecultures' where 'real stuff' happens. Surely I am not the only humanities academic to have experienced a queasy dissociation about teaching undergraduates how to critique Enlightenment thought and the old modernist dichotomies, even as these were collapsing in practically all branches of science, and were exceeded in everyday life by the strange experiences, metamorphosed bodies and new knowledges enabled by technoscience. Such phenomena enjoin us to acknowledge complexity and interconnectivity in what counts as nature, human, social or self; they challenge us to worry less about defending disciplinary boundaries, and do more to cultivate points of connection with other knowledges and frameworks around matters of common concern, the 'things' that matter to a larger public and that co-constitute us as members of a more-than-human polity (see Latour and Weibel).

Procedure 2: Opening up the 'social'

Humans for a few millions of years now have extended their social relations to other actants with which, with whom, they have swapped many properties, and with which, with whom, they form a *collective*. There is no sense in which the notion of a *human* can be disentangled from the nonhumans into whose fate it has woven more and more intimately over the ages. (Latour, 'Pratogonies' 793)

Latour's imagined 'parliament of things', where even non-human actants have rights and forms of representation, is predicated upon a refusal of the old modern disciplinary divide between human and physical and natural sciences, and a radical redefinition of 'society' or 'the social' to include the multifarious non-humans we live with and which sustain us. Or perhaps assault us. For as Stephen Muecke reminds us in his meditations on house dust mites, allergies and treatments, researchers ought not be too hasty or short-sighted when drawing a boundary around the list of actants relevant to a problem: 'let's not foreclose too soon on possible actors or causes in the assemblages that make up matters of concern'. In this perspective, the process of social construction includes formative interactions with the non-human entities—like house dust mites—that are also part of our everyday social lives.

It is worth remembering that Latour and Woolgar produced their early version of actor-network theory out of social constructionist research into the social and discursive construction of scientific facts. As well as revealing how facts and artefacts are so constructed, their studies also disclosed how matter, machines, and organisms may resist conforming to humans' semiotic frames, and how these non-human agents also shape and organise human groups, knowledge, and realities (See Latour and Woolgar; Latour, 'Pragmatogonies'; Haraway, *Simians; Modest; Dugdale; Law*).

Latour has routinely critiqued conventional sociology for having neglected the role played by non-human entities in constructing, stabilising and supporting social systems (Latour 'Pragmatogonies'), and for holding too fixed a view of 'society' as a fully-formed structure or set of institutions and forces, a macro-sociological agent that constructs humans and shared realities. His actor-network theory seeks to understand 'society in the making': the processes of 'heterogeneous engineering' through which facts and artefacts, personages, social categories, and societies are constructed from the ground up through practices and interactions amongst a variety of types and scales of actors, not all of them human or even animate. Mike Michael characterises Latour's approach as a microsociology that avoids 'such macro terms as institutions, the state, class, race, patriarchy' and is more interested in 'how these complexes attain coherence, consistency and uniformity across time and space' (Michael 31). He contrasts Latour with Haraway, who 'is not averse to drawing upon the traditional terms of macrosociology — ideology, multinationals, sexism, racism and so on' and who sees these structures 'as conditions and products of networks', whose effects are indirect, mediated, and difficult to empirically demonstrate. However, this macro/micro binary cannot be maintained, especially as Latour's more recent textbook on ANT relaxes this polemic and concedes there are indeed social phenomena, categories and artefacts so firmly entrenched and 'stabilised' that the microsociological study of '[X] in the making' is inappropriate (*Reassembling* Ch. 3). The key point is that networks are heterogeneous and include entities

and sub-networks of different scales and types, and members of micro-networks inevitably have connections with 'meso-' as well as 'macro-' level formations.

With non-humans included in the social domain, and society understood as a heterogeneous assemblage of humans, plants, animals, technologies, infrastructures, natural entities and contingent events, the idea of 'social construction' can be unfolded to encompass a more complex set of processes, and a more diverse set of actors and practices, than sociologists and cultural researchers conventionally consider. For example, whereas social theories of gender conventionally centre on human agents (language, kinship structures, norms of masculinity and femininity), a sociotechnical approach would examine how specific variants of gender are constructed, performed, and exceeded in interactions with non-humans: toys, clothes, adornments, grooming technologies, domestic spaces, plants and animals; machines and workspaces, as well as surgery, hormones or drugs. One difference between conventional and 'more than human' versions of social construction is that while the latter seek to understand 'gender in the making', they do not presume that all interactions with non-humans are subsumed by or reproduce the symbolic and social orders of gender: interactions with non-humans include contingent 'intra-actions' (see Barad) and have specific material, corporeal, pre-representational or non-representational effects.

Expanding the social to include non-humans means that to understand how I have been socially constructed, in addition to considering interactions with social institutions like family, school, social norms and laws. I would also examine the roles played by the foods, drinks and other substances that I (or my mother and grandmothers) have eaten or overeaten (i.e. epigenetic factors), the animals I have encountered as pets or as meat on my plate, as well as the material objects with which I have interacted, from childhood toys to car and laptop. My social identity as a worker who can show up on time in a presentable state is enabled by interactions with numerous fittings, appliances and products for timekeeping, personal hygiene, and laundering, as well as the infrastructures of water, electricity and transport, all of which could be understood as 'progenitors' or 'co-agents' of my acculturation into a shared way of life.

Procedure 3: Reconstructing 'construction'

'Construction' implies a process of bringing together, and by association with building may connote intentional processes of design, planning, coordinating, assembling and finishing. A crucial move in sociotechnical or actor-network thinking is to de-couple the notions of action and agency from the notions of intentions or intended effects. For example, a car that won't start, or a doorsill we stub our toe on, do not have malevolent intentions but they do have effects. On the other hand, the ways artefacts are designed and deployed may have human intentions 'baked into' them, and have moral effects in that they carry certain injunctions to action and script roles for their users (Latour, 'Missing

Masses’). ‘Shaping’ may be a better word than ‘construction’ to suggest a more contingent and partly random process with a number of agents involved, not necessarily fully coordinated by some maestro conductor. The term ‘co-construction’ is meant to suggest a process in which these mutually formative—though not necessarily planned—interactions between a number of heterogeneous agents have effects upon these agents and upon the network(s) in which they participate.

From understanding ‘construction’ as a form of ‘co-construction’, we can begin to contemplate the dynamic processes of ‘co-evolution’, where actors and ‘products’ (or entities) in networks continually interact with and mutually shape each other, meaning that each ‘construction’ is a dynamic co-construction that changes over time or in successive iterations, along with other elements in the network that together ‘co-evolve’.⁶ Elizabeth Shove has outlined one version of a basic sociotechnical co-evolutionary system in the form of a triangle whose three poles are the habits and expectations of users (or ‘user cultures’), the technologies and objects they use, and the collective conventions and arrangements associated with large-scale social structures and technocratic infrastructures (Shove, *Comfort* 48; see also Sofoulis and Williams 54). Two-way arrows between each pole indicate co-constitutive interactions between user cultures, technologies, and systems, each of which adaptively changes and evolves in response to interactions with the others.

A minor example of co-evolutionary change is furnished by low-flow shower heads in Sydney. Householder expectations about the convenience and comfort of showering have been shaped by the existence of urban water infrastructures, as well as technological devices like showers and hot water systems. When the water utility first promoted water-efficient shower heads, some users were disappointed that the new showers did not deliver the expected water flow and sensations of wetness, or were not stylish enough to suit their bathrooms. A co-evolutionary change arguably occurred when the water utility expanded its range of rebate-attracting shower heads to include ‘wetter’ models and prestige designs. The ‘co-evolution’ aspect here is not locatable simply in the technological innovation, but the shift in user-utility relationship it mediated: instead of persisting with a typical top-down and engineering-centred approach to water efficiency, the utility actually listened and responded to users’ expectations about sensations and aesthetics.

⁶ Co-evolution is a term used in evolutionary biology, mainly to describe how changes in one organism may prompt or be accompanied by changes in another; for example how flower shapes co-evolve with specific features of particular insects and birds involved in their pollination or seeding. Describing the dynamics of change within sociotechnical systems as ‘co-evolutionary’ might be considered metaphorical as no biological or genetic change is immediately involved. However, the lesson of the early Anthropocene is that sociotechnical systems are not ultimately separable from planetary life support systems, and result in new genetic and epigenetic pressures on organisms to either change and adapt, or suffer extinction, the death of future evolutionary potential.

4. Co-evolution and urban water

In its 1970s version, social construction helped us understand how persons were products of social structures. Its makeover has turned it into a model of sociotechnical (or socio-natural-technical) co-construction, and of change via co-evolution. This enhances its relevance for addressing current issues, including how we are shaped by technologies and infrastructures as well as our fellow living entities, and how we, our technologies and infrastructures need to co-evolve into different configurations in order to mitigate climate change and other forms of environmental instability.

So now I could describe myself as a sociotechnically constructed water consumer who has been shaped by interactions with technologies like the tap and the drain. These non-human actants, along with habits and practices encouraged by parental injunctions, school and workplace rules, popular media, have helped 'co-construct' me as a citizen and water consumer. These ordinary plumbing fittings are part of a sociotechnical assemblage that produced me as a 'clean and proper' citizen who can knowledgeably use water services to accomplish this self-presentation. Municipal water and sewerage infrastructures have 'baked into' them certain kinds of intentions (and 'non-intentions') about heroic engineering, civilization, public health and municipal order (Sofoulis). They enabled technologies like flushing toilets, hot water systems and automatic washing machines to flourish. My interactions with them have built up my expectations about levels of comfort and convenience with which I can achieve socially normative standards of cleanliness and freshness (Shove *Comfort*; Medd and Shove). These inherited technologies and infrastructures were designed with abundance not sustainability in mind, and so possess 'saver-unfriendly' features that prevent people like me from routinely using less water (Allon and Sofoulis).

There is growing recognition of the urgent need for changes in our ways of life, including how we use water, what kinds we will use, and what new systems of urban water service provision might evolve. However, unlike postmodern science, urban water management is still conducted in old modern disciplinary terms. Water behaviour, attitudes, values and socio-economic status are all categorised as 'social' or 'human', while water management and supply and associated devices are categorised as factual, technical, natural—'non-human'. With such stringent 'purifications' dividing the humans from the non-humans, no wonder water industry people refer to the problem of how to change human behaviour as 'the hard stuff'. Instead of studying water practices, the industry has exhaustively investigated individual attitudes and population demographics via methods blind to the messy in-between zones where humans, social norms, water, technologies and infrastructures all interact, and where new practices and water cultures may be found 'in the making'. By contrast, in a recent project

on urban water demand management,⁷ we argued for a ‘meso-’ level approach to changing water culture norms and diffusing alternative technologies and practices, by engaging people in peer-based and practical learning about conservation via formal and informal social organisations based outside the home (eg. in the street or neighbourhood, through sports clubs, faith-based organisations, community groups, etc.).

In their study of contemporary household projects, Shove and her collaborators (*Design*) elaborate on the practice-centred theory at the heart of the co-evolutionary approach. Theories of practice ‘require an analysis that goes beyond the realm of symbolic communication, and beyond the actions of seemingly autonomous individuals’ (11). In the domestic context, the practicalities of doing things like making a meal ‘generally involve the active orchestration of an array of material artefacts’ that are ‘brought together in a spatially and temporally structured arrangement’ (142). The co-evolutionary model suggests that the most effective pathways to new water consumption cultures will involve the ‘active orchestration’ of an array that includes material artefacts (eg. water-collection or saving technologies) and new practices, as well as people, organisations, and large-scale systems.

The co-evolutionary model implies that strategies aimed at changing just one actor or set of (inter-) actions in a co-evolutionary network might not succeed, or they could precipitate unintended or unwelcome changes in other actants and interactions in the network. For example, in response to tight restrictions on outdoor water uses in Sydney, many householders started diverting washing machine and bath water onto their gardens. Additionally, disgust at using drinking water to flush toilets helped prompt a shift in etiquette and standards of hygiene and privacy, and people flushed their toilets less frequently. A couple of years on, the water utility was advertising for specialist engineers to cope with the increased odour and accelerated corrosion of sewerage pipes that were carrying significantly lower volumes of water and more concentrated wastes. This situation had the potential to make visible the normally unmentionable facts that the sewerage system itself was not designed for frugality, that it has its own built-in ‘demands’ for water (normally disguised when utilities define users as wholly responsible for demand), and that it becomes fragile when those otherwise unacknowledged systemic demands are not met. It illustrates how through their well-intentioned and unpredicted conservation practices, users could potentially damage infrastructures.

⁷ This project *Demand Management through Cultural Innovation: User Models* was undertaken as a partnership between the Centre for Cultural Research, University of Western Sydney and Sydney Water Corporation in 2005-07, and the support of these two institutions is gratefully acknowledged. The research team comprised the author with Dr Carolyn Williams, Marnie Campbell and Dr Penny Rossiter, with research assistance from Justine Humphry and Jude Twaddell and management support from Dr Peter Wejbora.

A co-evolutionary approach suggests alternatives to current urban water demand management planning, where existing historical, technical and cultural norms of water use are typically taken as a baseline, and much effort is focussed on meeting these demands by delegating responsibility for water saving to more efficient technologies (eg. low-flow showerheads, dual flush toilets). These efficiency solutions achieve some savings in resource use without requiring changes in either consumption norms or large-scale systems and infrastructures of consumption (van Vliet, Chappells and Shove, 16). They are therefore only 'weakly' co-evolutionary.

A more deliberate co-evolutionary approach could accelerate change for sustainability by working directly on renegotiating consumption norms and requirements while new technologies and infrastructures co-evolve to support them. A 'strong' co-evolutionary approach would help communities to coordinate interactions and alignments amongst key actors in heterogeneous networks that support water-saving as well as co-provision (Chappells). For example, well-designed waterless toilets exist but are not widely adopted in Australia, largely due to lack of intermediary businesses equivalent to those available for supporting backyard pools (Fam). No matter how good the technology, it cannot spread far beyond hard-core enthusiasts without appropriate infrastructures and user support services. In a stronger co-evolutionary approach, ordinary water users can become more than mere conscience-stricken vectors by which houses acquire water-saving devices: they can become co-responsible for water saving and be active and adaptive agents in changing water cultures and expectations about water services. In concert with appropriate technologies (like rainwater tanks or greywater recycling devices), and their own resourcefulness and inventiveness, water consumers might co-evolve new identities as water collectors, recyclers and savers (Sofoulis and Williams, 55). One effect of such actions, especially in concert with adoption of new water technologies and techniques (such as rainwater collection and greywater recycling), is to alter the existing user-provider relationship, as users change from dependent 'customers' to active 'co-providers' and 'co-managers' of water—changes which Medd and Chappells (47-8) observe are often resisted by water authorities. For like its 1970s predecessor, this revamped constructionism is animated by a libratory spirit that encourages critical questioning of authorities (both technical and social), along with encouraging invention, experiment and reconstruction to co-create a better (or less worse) world.

Conclusion

The 1970s version of social construction was inspirational for its de-naturalising of gendered representations and identities based on ideologies of 'anatomy is destiny'. In the updated social construction proposed here, anatomy still isn't destiny— though the body is more agentic, mutable and adaptive (even more

so for Barad). ‘Society’ is a heterogeneous collectivity where humans socialise and are socialised by natural elements, technologies and infrastructures that establish certain basic habits and expectations of levels of convenience and resources available for accomplishing diverse tasks. ‘Construction’ is a ‘co-construction’, a multilateral configuration involving distributed agency and co-evolutionary interactions that help stabilise and maintain—or alternatively, potentially destabilise, mutate or extinguish—networks and their heterogeneous actors.

Whereas the earlier version of social construction called attention to the structuring forces of social institutions as products of history not nature, this twenty-first century sociotechnical update draws our attention to the inconspicuous and backgrounded technologies and infrastructures that support daily social and bodily life. Making those infrastructures and our habitual relations to them more visible and accountable is an important step towards co-evolving more sustainable infrastructures, cultures and identities. The new systems, infrastructures and technologies that emerge will demand and facilitate new kinds of practices, different sets of relations (e.g. among and between humans and infrastructures) and in turn co-construct different kinds of people.

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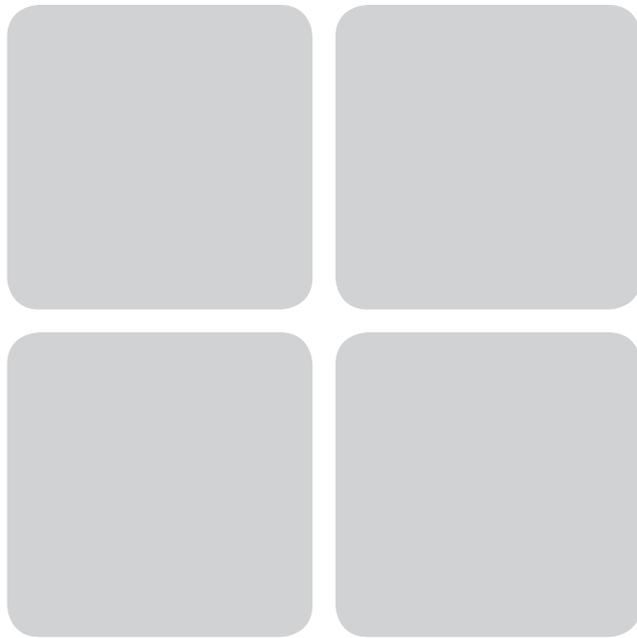
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THE ECOLOGICAL HUMANITIES

Introduction

Deborah Bird Rose

Three of the four articles in 'Ecological Humanities' engage dialogically with the work of the late ecofeminist philosopher Val Plumwood. The first, 'A Postcapitalist Politics of Dwelling', initiates a dialogue between the ecological humanities and community economies, forming links and connectivities that honour Val's work and extend it in ways that she had hoped might happen. The second, 'Genetic Conservation in a Climate of Loss' examines gene banking and conservation, engages questions of what counts as nature, and offers a critical 'rethink' of the kind Val was urging. The third, 'Dancing with Disaster', takes up issues of exponentially increasing climate disasters, and seeks an ecosophical *ratio* that may equip us generously to meet the challenges of climate change as ethical partners within the multi-species communities that are, and increasingly will be, experiencing climate chaos. The 2009 Victorian bushfires have brought climate chaos to us incredibly vividly, reminding us that much that we speak of in the future tense is actually in process at this moment.

The fourth article, by Val Plumwood, is a work that was in progress at the time of her death. The ideas she presents in the article were first formulated as a speech for Melbourne Writers' Festival in 2006. In editing this article for publication I have kept to Val's text other than to correct errors and standardise the format. 'Nature in the Active Voice' offers a succinct account of Val's thinking as a way of laying out the basis for two main points that are articulated from her position as a 'Philosophical Animist'. The first is a critique that discloses the connections between reductionist science and creationism. The second is a call for poets and other writers to join in a rethink 'which has the courage to question our most basic cultural narratives'. She calls for writing that is 'open to experiences of nature as powerful, agentic and creative, making space in our culture for an animating sensibility and vocabulary'. This, she says, is a major task facing the humanities today.

Genetic Conservation in a Climate of Loss: Thinking with Val Plumwood

Thom van Dooren

In February 2008 the Svalbard Global Seed Vault had its official opening. The vault is a co-operative project: while its construction was largely funded by the Norwegian Government, its management also involves the Global Crop Diversity Trust and others, and its seed samples are being provided by governments and organisations all over the world. The vault is located in the Svalbard Archipelago, and has been dug into a mountainside. The project's architects hope that the location's remoteness—alongside a thick layer of rock and permafrost—will ensure the survival of the seed samples in the face of any political conflict or environmental catastrophes that may occur elsewhere in the world. In short, the facility aims to provide seed insurance in a time of uncertainty, instability and change. According to accounts in the press, this bank is a 'doomsday vault carved into a frozen mountainside on a secluded Arctic island ready to serve as a Noah's Ark for seeds in case of a global catastrophe' (Mellgren).

This paper explores this practice of gene banking, which has become increasingly important to conservation efforts—particularly for agricultural diversity—in recent decades. In the current 'climate of loss', in which biological diversity of all kinds is disappearing—whether it be Asian vultures, polar bears, or varieties of vegetables—how we do conservation has taken on a new level of importance. Informed by the life and work of environmental philosopher Val Plumwood, this paper takes up her work in an effort to think through these important issues.

The dual imperative

One of the central themes of Val's work was a rethinking of what counts as nature for us today. In particular, Val sought to undermine the many dualisms on which a great deal of Western thought has been based, dualisms that she argued were responsible for our hyper-separated conception of 'nature' and human beings—and consequently our failure to 'get on' successfully and sustainably in our more-than-human world. In place of a view of nature as, by definition, the non-human, Val's work attempted to include humans within the sphere of nature—while being very clear that this was always going to be far more than a linguistic project. That is to say that this redrawing of lines was not just about changing what we mean by the term nature, but rather about challenging how we both think about and live in the world. Centrally, for Val, I think that this project aimed to resituate 'humans in ecological terms at the

same time as it resituates non-humans in ethical and cultural terms' (Plumwood, 'Animals' 2). In current work I am interested in how we might do conservation like this, a question that this paper begins to take up with specific reference to *agricultural* plant diversity.

Seeds as genetic resources

Agricultural conservation efforts really began in a formalised way in the 1960s and 70s after it was internationally acknowledged that crop diversity was being lost at an alarming rate. Although crop diversity exists in all agricultural environments, it is heavily concentrated in several 'centres of diversity'—often called Vavilov centres, after the Russian botanist and geneticist Nikolai I. Vavilov who identified these various sites.¹ It is important to note that these sites are entirely within what is today the 'developing' world, and as such often (but not always) within areas that are dominated by less industrialised, lower-input agricultural systems—perhaps even those of subsistence or semi-subsistence farming communities. In a climate of crisis, the conservation efforts that began in the 1960s primarily took form around the *ex situ* storage of germplasm (primarily in the form of seeds) in genebanks, as opposed to attempting to conserve plants within these environments and farming communities—called *in situ* conservation (FAO, 'Report' 20). This banking-work is still the central part of international agricultural conservation efforts and in its genetic form is becoming an increasingly influential practice for conservation more generally (Haraway, 'Cloning'; Turner).

Today, there are an estimated 6.1 million agricultural plant accessions held in approximately 1,300 facilities worldwide. These accessions are primarily seed, but some are also held as pollen, DNA samples, or *in vitro* tissue samples. As the UN Food and Agriculture Organization's 1996 report on the *State of the World's Plant Genetic Resources* has pointed out, however, there are numerous problems with these facilities around the world. In particular, many of them do not have long-term storage capabilities, and a large percentage of the accessions (perhaps as many as 1 million) held by many other facilities are in desperate need of regeneration—the process whereby seeds are planted, cultivated and recollected to keep them viable (FAO, 'Global Plan' Art. 10a). It was in large part to serve as a backup to these problematic facilities that the Svalbard Global Seed Vault was designed and built. In reality, however, there are a variety of problems with seed banking in general that will not be overcome even by this new facility—for example, the fact that plant varieties whose genetic material is banked are in some sense 'frozen' and so not able to adapt to changing climatic and other conditions (Hawkes *et al* 13).

¹ The Vavilov centres of diversity are often thought to have been the sites at which these crops were domesticated, but this is a somewhat problematic position (Smith 5-6). They are nonetheless the sites that contain the greatest amount of genetic diversity of crop plants.

One of the last conversations I had with Val was about Svalbard and gene banking more generally. We talked about the inadequacies of the ‘reductionist’ understanding of nature that underlies this kind of approach to conservation-as-banking. As in so many cases, my thinking on this issue is informed by both conversations with Val and readings of her work. Stated simply, my position is that in *ex situ* banking projects genes, seeds and reproductive material more generally, are being used as a kind of ‘proxy’ for the plant varieties or species that are being lost. As Bronwyn Parry points out—drawing on Bruno Latour’s work on ‘inscription devices’ (Latour, *Science in Action*)—by definition, a proxy is not equivalent to that which it ‘stands in’ for. For Parry, a proxy is a representation or a part of an object or organism that is more readily useable for a specific purpose (i.e. storable, tradable, transmissible) and that reproduces some aspect/s of that thing in a reliable, or at least acceptable form (Parry 22-3). In other words, the proxy is a ‘good enough’ embodiment or representation of something else for some given purpose. If *ex situ* collections of genetic and reproductive materials are being utilised as proxies—as ‘good enough’ representations—of organisms, varieties, and species, the question remains: *what exactly are they ‘good enough’ for?*

In an effort to answer this question I have turned to the two relevant international conservation agreements, namely: the 1992 *Convention on Biological Diversity* (FAO, ‘Convention’) and more specifically in the case of agricultural plants, the 2001 *International Treaty on Plant Genetic Resources for Food and Agriculture* (FAO, ‘Treaty’). The first thing to note about the Treaty is that what it explicitly aims to conserve are not real embodied organisms involved in processes of growth and evolution (called ‘biological diversity’ in the CBD (Art. 2)). Instead, the focus of the Treaty is on conserving and providing access to the *genetic materials* found in organisms. In both the CBD and the Treaty, genetic materials are clearly distinguished from the biological components of the organisms within which they are found. Both agreements define ‘genetic materials’ as any material containing ‘functional units of heredity’ (FAO, ‘Treaty’ Art. 2; FAO, ‘Convention’ Art. 2). It is these materials that the Treaty aims to conserve and equitably share (Art. 1.1). In contrast, ‘biological diversity’ is not even defined within the context of the Treaty. The term is only used twice, and then only in the context of its relevance to the sustainable use and conservation of *genetic* resources (Art. 6).

In contrast to *in situ* conservation projects in which genetic resources are conserved within the ‘biological diversity’ that they represent, the dominant *ex situ* strategy reduces what must be saved down to its most essential features. Partly for reasons of cost, partly for ease of access, and partly because we cannot hope to conserve all of the world’s vanishing agricultural diversity, the way in which *ex situ* genebanks ‘do seed’ highlights a series of priorities. In particular this approach to biodiversity separates off what must be conserved from the expensive and unnecessary biological components within which it is normally

found. Seed, pollen, vegetative propagation materials and DNA are all utilised as vessels for genetic resources in these *ex situ* projects. These tangible vectors are used to embody or 'capture' the genetic information of the plants that they come from or will grow into, in various forms that are reasonably easy and economical to store and access. Bert Visser *et al* clarify an important part of this situation when they point out that the CBD:

distinguishes three integration levels of biodiversity, including agrobiodiversity, i.e. '*the diversity within species, between species and of ecosystems*' ... Only genetic resources, i.e., the biodiversity at the lowest integration level, can be conserved *ex situ*, at a site distant from the original occurrence of the conserved material. Diversity between species and of ecosystems, as well as the indigenous knowledge relating to agrobiodiversity can only be effectively maintained *in situ*, in the agricultural production context in which these are functional. (13)

In the banking of seeds, therefore, it is not biocultural, or even biological, diversity in its fullest sense that is to be conserved, but rather genetic diversity. The meaning of the term 'diversity' changes here in a subtle but important way. Within the context of *in situ* conservation, diversity is a relational concept that captures co-evolutionary interactions within a field of biosocial complexity. In the case of genetic conservation *ex situ*, however, diversity has become purely a numbers game. More types equals more diversity. Thus, even while genes are conserved *ex situ*, both biological organisms and the relationships which comprise these environments cannot be. There is clearly something important missing here. In addition, as Visser *et. al.* acknowledge, in the case of agricultural diversity these are *biosocial* environments that include humans and non-humans in relationships built around evolving sets of knowledge-practices, none of which can be conserved *ex situ* either.

It should be noted, however, that in recent years the important role that *in situ* conservation might play in agriculture has been increasingly acknowledged—for example in both the CBD (Art. 8) and the Treaty (Art. 5.1(d)). Despite this acknowledgement and a lot of dedicated work—by both small NGOs and larger organisations—current international conservation efforts are very clearly weighted in favour of *ex situ* projects like Svalbard. In Stephen Brush's terms:

The current [1994] status of *in situ* conservation policy is best characterized as benign neglect ... Virtually all public resources for conservation are directed to *ex situ* methods. While *in situ* conservation might be acknowledged as possible and perhaps necessary, there are exceedingly few efforts in any region of crop evolution to plan or implement *in situ* conservation. (6)

While this situation may have changed a bit since 1994, it has not changed significantly, and multimillion dollar projects like the one at Svalbard highlight the ongoing dominance of this approach to agricultural diversity conservation.

In the world of biodiversity, however, this distinction between the biocultural and genetic components or organisms needs to be understood alongside another distinction, namely that between ‘genetic materials’ and ‘genetic resources’ (the latter being a subset of the former). This distinction is made in both the Treaty and the CBD. Nigel Maxted and Shelagh Kell draw out the central relevant issue here when they remind us that:

The goal of plant genetic conservation is primarily direct use through exploitation for crop improvement. We expend resources on the maintenance of genetic, species and ecosystem diversity because of their immediate or potential utilization value to humankind. (Maxted and Kell 450)

Within this context, it becomes clear that these international agreements do not aim to *conserve* agricultural biodiversity at all, but rather aim to protect *and make readily available for use* a unique kind of instrumentalised genetic life. This focus has, however, meant that the banking of the genetic information contained in organisms now often takes centre stage at the expense of conserving the ‘messy, thick organisms’ (Haraway, *Modest_Witness* 246) themselves, let alone the environments and co-evolutionary interactions within which these organisms are themselves produced and nourished.²

In these banking practices the biological components of organisms and their environments (the other two types of diversity noted by the CBD) are completely unimportant, and it is only genetic diversity that must be conserved. Additionally, we have seen that genetic diversity is further split into that which is of potential or actual value, and a residual and expendable category which, like the more biological members of the ‘diversity community’, is deemed not to be important enough (or perhaps just too expensive or impractical) to conserve. As a conservation-proxy, therefore, seed is only being used (and to an important extent only *able*) to ‘stand in’ for agricultural plant varieties and ecosystems in a very limited way. In other words, it isn’t really ‘good enough’ for conservation.

Quite simply then, seed has remained a ‘good enough’ proxy for conservation from the 1960s to today because these banking efforts have only ever aimed to make genetic resources available for human use, not to conserve agricultural environments and diversity in any fuller sense of these terms. In order to use seed in this way, the nature that has to be imagined is one in which non-humans, or at least agricultural plants, exist solely for use in human projects. In Val’s

² I take this usage of Haraway’s notion of ‘messy, thick organisms’ in this context from Parry, *Trading the Genome*.

terms there is an important reductionism and 'instrumentalisation' of non-humans going on here (Plumwood, *Feminism* 52-3), one that attaches no real or essential value to their living for their own sake, or to the broader ecological relationships that comprise agricultural environments. It is only through this deficient and economically convenient understanding of 'nature' that the conservation carried out in *ex situ* banking projects and mandated in agreements like the Treaty can look like *conservation* at all.

Ecologically embodied conservation

Val and I never got around to discussing the specifics of what was wrong with this brand of reductionist conservation. I think though that Val would want to highlight what is missing in these banking projects, what *is* not and *cannot* be saved like this, and consequently what will slip out of the world despite multi-million dollar banking projects like Svalbard. As we have seen, biological organisms are missing here in an important sense, as are the relationships between them that produce functioning and resilient ecosystems.

This is a situation in which non-humans are only valued as resources for human projects. As Val argued in much of her work, there is certainly nothing wrong with—and in fact no way to avoid—using non-humans (Plumwood, 'Animals'). The central ethical issue, however, is in *how* they are used. In particular, that they be allowed to *exceed* this use. In this case, that we do not fail to appreciate all of the diverse ways in which plants and other non-humans are *more* than genetic resources for our projects. I think that this is a central aspect of the second part of Val's dual imperative that I mentioned above—namely, that we resituate non-humans in ethical and cultural terms. This project is in part about acknowledging that non-humans are valuable in and of themselves, that they very often possess their own 'cultures', their own ways of relating and living that should be respected in as much as it is possible to do so. At the same time though, this resituating is also about acknowledging the way in which non-humans contribute vitally to our own ethical and cultural worlds. In an agricultural context there are numerous examples of communities in which crop plants hold highly significant cultural, religious and even familial roles (Gudeman and Rivera; Maffi; van Dooren, 'Terminated Seed').

The second part of Val's dual imperative is to resituate humans in ecological terms. I take this to mean that we should both understand ourselves to be, and actually live with a recognition that we are, a part of the broader more-than-human community of life on which we all depend. In an important way I think that seed banking already does this. Despite all of the reductionism and dualistic thinking that underlies genetic conservation projects like Svalbard, at their core they are all about the deep interdependence between people and crops. Here, agricultural genetic conservation is not just concerned with keeping plants 'alive', it is also quite explicitly about keeping humans alive. It

acknowledges that if something should happen to our crops—a doomsday event that could include severe climate change, nuclear warfare, escaped GM traits or any manner of other sci-fi-esque, but perhaps all too familiar, scenarios—it would not be enough for *people* to make it through. Our long term survival would require that we make it through with at least a handful of seeds, with enough genetic diversity to re-seed agricultural practices. As far as acknowledgements of human/crop interdependence go, one really couldn't ask for a better one than this multimillion dollar project (BBC News; Mellgren).

This is a very techno-scientifically mediated version of human/plant interdependence, but its core is still very much focused on all of the ways in which people and crops plants need each other. Perhaps Val and I would have parted ways at this point—we never quite managed to sort out our differing tolerances for techno-science. Despite this fact, I think that we would perhaps both end up moving in a similar direction from here, to focus on the political questions raised by 'seed banking'—I can no longer in good conscience call it 'conservation'. In fact, this is one of the central movements that I have taken from Val's work; namely, her commitment to exploring and exposing the ways in which specific understandings of 'nature' and organisations of human relationships with non-humans might draw upon and reinforce particular power dynamics.

In simple terms, what I think is relevant here is the way in which this reductionist practice of gene banking ties in to modern plant breeding and engineering projects in such a way that adaptation—the possibility of dynamism in the face of change—becomes completely centralised (and in most cases is able then to be driven primarily by profit). Instead of focusing on keeping diverse plant genetic materials within agricultural communities so that they might have some breeding resources to adapt to changing conditions—caused by climate change, the market, or any number of other factors—*ex situ* banking ensures only that these resources are available to bona fide plant scientists or researchers (van Dooren, 'Banking Seed').

And yet, in the context of the current incredible loss of the diversity of life, we cannot really afford to do away with any of the 'conservation' options open to us, however limited they may be. We need these banking projects—perhaps now more than ever. We need them both as a risk mitigation strategy in a world that is starting to look more and more like a badly conducted science project, and as a resource for adaptation in the face of the massive environmental change that humankind is now causing. What this paper points to, however, is the fact that no matter how dire the situation, the need to conserve diversity cannot be allowed to cover over more critical discussions about *how* and *for whom* this 'conservation' work is to be done. These discussions must inevitably lead towards a radical restructuring of this dominant agricultural conservation agenda: a

restructuring in which the seed banks are no longer primarily stockpiles of genetic resources, but rather become central hubs in a project of conservation as diversity *sharing* (van Dooren, forthcoming). Ultimately, however, there are no simple answers here. As always though, I find Val's work instructive in thinking about what is wrong with the present, how we got here, and what kinds of values and relationships might be important in our efforts to build something better.

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Nature in the Active Voice¹

Val Plumwood

Need for a thorough rethink

It seems increasingly possible that our immediate descendants, and perhaps many of those now living, will face the ultimate challenge of human viability: reversing our drive towards destroying our planetary habitat. Two important recent books, one by Jared Diamond (2005) and the other by Ronald Wright (2004), show how cultures that have been unable to change a bad ecological course have gone down. The appearance of ecological crises on the multiple fronts of energy, climate change and ecosystem degradation suggests we need much more than a narrow focus on energy substitutes. We need a thorough and open rethink which has the courage to question our most basic cultural narratives.

Imagine this scenario: The northern tribe of Easter Islanders never question the desperate religious cult that has devastated their section of the island as they try to placate with tree sacrifice the angry gods who withhold the rain. Instead, their leaders look around for new sources of trees, casting their eyes perhaps on the still-forested lands of the smaller tribe to the south. Meanwhile, their clever men, their scientists, are set to search for tree substitutes—other types of vegetation perhaps. But the need to consume the trees, given by the religion, is never questioned.

Most public discussion in our society is dominated by the tyranny of narrow focus and minimum rethink. A rethink deficit is a poor rational strategy in a situation where so many cracks are appearing in the empire, where multiple ecological problems are compounding and converging. Strategies that limit us to casting about for simple substitutes are dangerous. We revamp those hazardous sources good sense has led us to resist so far—nuclear fuels for example. Rethink deficit strategies do not encourage us to question the big framework narratives that underpin our extravagant demands or the associated commodity cult of economic growth. Or to question our right, as masters of the universe, to lay waste to the earth to maintain this cult's extreme lifestyle.

So, getting back to my case study, where could my putative Easter Islanders go to find intellectual help? In my scenario, science does what it is told by power, and scientists are not encouraged or intellectually equipped to address the bigger

¹ At the time this paper was written, Val Plumwood was a Visiting Fellow at the Centre for Resource and Environmental Studies (now the Fenner School of Environment and Society), Australian National University.

questions. So the Islanders need more than science, and maybe a different kind of science. The Islanders of my scenario obviously need people with the courage to look about them and speak up for change. They need ecological knowledge and memory to help them recognise how nature supports their lives. Most crucially, they also need people who can open their culture to self-criticism, make them think harder about their big assumptions, such as their high-consumption religion, and its suitability for their very limited support context.

Perhaps what my Easter Islanders need is a college of philosophers, backed up by a full choir from the humanities? Supposedly, the subject area with the brief for the full rethink is philosophy, whose best traditions have claimed to hold everything open to question. As a feminist philosopher, I would say that philosophy does not always live up to these ideals, and itself has a significant self-reflection deficit. Much of it is far too uncritical of the canon, to which I myself feel very little loyalty. (My own allegiance is to certain kinds of philosophical argument and methods but not to the canon.)

Obviously philosophy with an excessive respect for tradition won't help the Islanders' rethink problem. They might get help though from the more radical strand of philosophy that, in Foucault's words, 'endeavour[s] to know how and to what extent it might be possible to think differently, instead of legitimating what is already known' (8-9). Could the recent area of environmental philosophy help the Islanders to 'think differently' about the dogmas that are ruining their island?

Environmental philosophy

First appearing in academia in the area of value theory in the early 1970s, environmental philosophy has now made itself felt across the whole discipline of philosophy, taking in core areas such as political philosophy, justice ethics, history of philosophy, moral epistemology and metaphysics. In all these areas philosophers have exposed the dangerous logic of current frameworks that devalue and background the non-human world. Some have argued that our human-centredness weaves a dangerous set of illusions about the human condition right into the logic of our basic conceptual structures (see Plumwood, *Environmental Culture*).

Environmental philosophy remains marginal, many would say, in academia.² There have been some great recent contributions to environmental philosophy (for example Mathews, *For Love of Matter; Reinhabiting Reality*) but my overall

² I'm not happy about confining the term 'philosophy' to academic or written philosophy, as some want to do. Arguably environmental philosophy is not just a recent academic invention but at the heart of the life practice of indigenous people in Australia for whom relations with the land were at the centre, not the margin of life.

assessment from over thirty years of involvement is that the discipline needs re-commitment and renewal, and presently is not sufficiently addressing our planetary ecological crisis or providing us with adequate guidance. (Perhaps the increasing influence of money in our learning systems would help explain why this area has been neglected.) Certainly environmental philosophy no longer holds the premier place it held in the 1970s and 80s among non-science disciplines. In Australia, the area has faced neglect or outright hostility from conventional philosophy, and has receded. In the humanities, the baton has been picked up by emerging stars—eco-politics, eco-anthropology and eco-criticism in literature. I'll have more to say about their important contributions later.³ Is this a race against time to remake the culture? You wouldn't think so from the low priority of these areas in the humanities and in philosophy programs and discussion.

Perhaps one reason the Easter Islanders may not get much guidance from environmental philosophy is because the college has been conventionally divided since the early 70s into the shallow and the deep sections, depending on whether their concern is with humans or non-humans. Australian environmental philosophers have contributed in a major way on both sides. John Passmore argued in 1974 for the adequacy of a 'humans only' tradition, and was balanced by local theorists from the same period on the deep side. Deep Ecology and Deep Green Theory were major brand names that emerged in the 70s. Themes of respect for nature, critiques of human arrogance and human-centredness, debates about intrinsic and instrumental value appeared in 1970s papers. Deeps focused on a better deal for non-humans—with other human-oriented ecological issues counted as shallow.⁴ Many argued for an expansion of ethics to non-humans, or for their inclusion in a larger ethical community, with very different views about how to constitute it. People like Peter Singer (*Animal Liberation*) wanted to extend the ethical community minimally to those most like humans (certain animals), while others, including myself, wanted a much larger, less humanised community, with an ethic of respect and attention needing no stopping point.

On the other, 'shallower' wing, philosophers like Passmore argued that a position considering only human interests would be enough to get us by, that it is

³ The emerging transdisciplinary area of the ecohumanities has some important contributions to environmental thought, but also some problematic ones, the latter emerging especially from forms of postmodernism. Indeed, the humanities harbours its own forms of reductionism and idealism about nature that maintain human self-enclosure and hinder the rethink. For example, a major recent humanities preoccupation has been developing idealist concepts and arguments that reject all concepts of nature as presenting limits and treat nature as a human construction. These sorts of positions are unlikely to help the Easter Islanders come to terms with their major problem of recognising how nature supports their lives. For a critique of these tendencies, see Val Plumwood 'Towards a Progressive Naturalism'; 'The Concept of a Cultural Landscape'.

⁴ Major cultural shifts were required. Many studies supported the idea that the past and present lives of Indigenous people showed what could be done in the way of decreasing demands, living less conflictually with nature and giving respect to the natural world (contraction and convergence strategy).

dangerous to question human supremacy; they advocated minimum rethink—a cleverer instrumentalism was needed. Non-human harm only matters when humans suffer too. I would argue against this minimising rationality of instrumentalism that genuinely sustainable systems cannot be ones that allocate merely minimum resources for providers' survival, as egoist economic rationality currently dictates. They must encourage greater levels of consideration for providers' long-term well-being. This rules out instrumental, servant or slave-like relations as well as competitive market relations (to name a few of those that encourage us to cut costs at the provider's expense), and rules in mutualistic forms of rationality.

This is why I think the conventional deep/shallow division is a pernicious false choice. A rigid division that makes us choose between human and non-human sides precludes a critical cultural focus on problems of human ecological identity and relationship, and is also bad for activism. It assumes a fallacious choice of self/other, taking an us-versus-them approach in which concern is contaminated by self-interest unless it is purely concern for the other. Most issues and motivations are double-sided, mixed, combining self/other, human and non-human interests, and it is not only possible but essential to take account of both. Both kinds of concerns must be mobilised and related.

Philosophy, I think, must understand humans as immersed in a medium that is both deep and shallow (although not in the same place). Our shift into a mixed framework enables us to see that human-centredness can have severe costs for humans as well as non-humans. Global warming is a case in point. Humans will lose, and so will non-humans. I think a more promising approach is to redefine what is 'deep' as that which challenges human-centredness. Then we can address both kinds of issues, human and non-human, in a deep way. Human-centredness is a complex syndrome which includes the hyperserparation of humans as a special species and the reduction of non-humans to their usefulness to humans, or instrumentalism. Many have claimed that this is the only prudent, rational or possible course.

I argue contrary to this that human-centredness is not in the interests of either humans or non-humans, that it is even dangerous and irrational.⁵ My argument is that one of its results is a failure to understand our embeddedness in and dependency on nature, that it distorts our perceptions and enframings in ways that make us insensitive to limits, dependencies and interconnections of a non-human kind. Where mind is taken as coincident with the human, hyperseparation is expressed in denying both the mind-like aspects of nature

⁵ Our shift in framework enables us to see that human-centredness can have severe costs for humans as well as non-humans. Under the old criterion of depth, in which consideration of costs to humans is inevitably 'shallow', it is not possible to consistently raise the question of how far human-centredness is a disadvantage to humans themselves.

and the nature-like aspects of the human: for example, human immersion in and dependency on an ecological world. When we hyperseparate ourselves from nature and reduce it conceptually, we not only lose the ability to empathise and to see the non-human sphere in ethical terms, but also get a false sense of our own character and location that includes an illusory sense of agency and autonomy. So human-centred conceptual frameworks are a direct hazard to non-humans, but are also an indirect prudential hazard to Self, to humans, especially in a situation where we press limits.

This is one of many places where insights drawn from feminist theory can be helpful. Male-centredness (a good parallel in some ways to human-centredness) can be damaging to men as well as to women. It makes men insensitive to dependencies as interconnections, as well as devaluing women. It has to be tackled from many sides, by changing men and by changing women, changing individuals and changing institutions. Human-centredness is similarly double-sided, and we have to see the denial of our own embodiment, animality and inclusion in the natural order as the other side of our distancing from and devaluation of that order. Human-centred culture damages our ability to see ourselves as part of ecosystems and understand how nature supports our lives. So the resulting delusions of being *ecologically invulnerable*, beyond animality and ‘outside nature’ lead to the failure to understand our ecological identities and dependencies on nature.

This failure lies behind many environmental catastrophes, both human and non-human. The inability or refusal to recognise the way non-humans contribute to or support our lives encourages us to starve them of resources. It has justice aspects because we refuse to give other species their share of the earth, and it has ethical aspects because we fail them in care, consideration and attention. This means that our ‘deep’ human-centred ethical failures and our ‘shallow’ prudential failures are closely and interactively linked.

Nuclear power

A corollary is that a deep analysis that challenges human-centredness can have much to say to human sustainability. The deep aspects come from the need to see ourselves as more limited beings, constrained by the ecological needs of the larger biospheric community. There is definitely a deep side to the energy and climate issues, although we don’t hear much about it.

A classic example is nuclear power. There are major concerns about human welfare, but the issue definitely has a deep side, both in terms of ecojustice for non-human lives and systems, and in terms of technological overconfidence and the approach to risks and limits. I think the illusion of ecological invulnerability appears in the way advocates of nuclear power fail to imagine or take seriously its enormous ecological risks and costs—the risks of storing radioactive wastes

for up to half a million years, for example, and the enormous risks involved in transport and storage.

We get nuclear instead of rethink. Nuclear advocates would inflict a horrendous burden of waste disposal and other risks on many future generations of humans *and* non-humans, none of whom will benefit or be consulted (see Routley & Plumwood, 'Nuclear Energy'; 'Ethics of Nuclear Power'). Why? So we can put off the inevitable rethink for another fifty years and continue the energy extravaganza that derives from seeing ourselves as masters of the universe. The deep aspect of climate and energy issues is the need to rethink ourselves as more limited and responsible beings in the biosphere. This also implies rejecting technologies that demand future human invulnerability and perfection, such as perfectionist forms of nuclear and genetic tinkering.

Reductionism and human/nature dualism

Contemporary human societies seem to have many similar problems to the Easter Islanders: failure to understand our ecological situation, being out of touch with what is happening to our ecological world and with ourselves as ecological beings. Can environmental philosophy perhaps help us understand how we got into this situation? I think it can. We need to understand the history and the logic of some key concepts to see how the trap we are in has been put together. Then there is a chance we might work out how to get out of it—although, sadly, causative insight provides no guarantee of escape.

The hyperbolised opposition between humans and the non-human order I call human/nature dualism is a western-based cultural formation going back thousands of years that sees the essentially human as part of a radically separate order of reason, mind, or consciousness, set apart from the lower order that comprises the body, the woman, the animal and the pre-human (see Lloyd; Plumwood, *Feminism*). Human/nature dualism conceives the human as not only superior to but as different in kind from the non-human, which is conceived as a lower non-conscious and non-communicative purely physical sphere that exists as a mere resource or instrument for the higher human one. The human essence is not the ecologically-embodied 'animal' side of self, which is best neglected, but the higher disembodied element of mind, reason, culture and soul or spirit.

The other side of this is the reduction of nature that is part of the dualist formation. On the one side of this hyperseparation, we set ourselves sharply apart from everything else as essentially mindful beings. On the other side we get the concept of nature as dead matter, all elements of mind and intelligence having been contracted to the human. The idea of nature as dead matter, to which some separate driver has to add life, organization, intelligence and design, is part of human/nature dualism.

This ideology of dualism and human apartness can be traced down through western culture through Christianity and modern science. With the enlightenment, human apartness is consolidated and augmented by a very strong form of reductionist materialism, whose project, in Descartes' formulation, is 'the empire of man over mere things'. This framework identifies mind with consciousness, solidarises the human species as uniquely conscious agents, and reduces non-human forms to 'mere matter', emptied of agency, spirit and intelligence. Reductive concepts that restrict even the vocabulary of mindfulness and moral sensibility to humans naturalise the treatment of non-humans as slaves or mere tools—making it seem natural that they are available for our unconstrained use and are reduced to that use (are 'resources').

Reductionism, as an important cultural development associated with modernity, actually relies on a reified separation that took place a lot earlier, through a process of splitting and a hegemonic construction of agency and identity. According to a typical hegemonic pattern, the most general form of mind/body dualism, matter itself (chaos) is not creative, but is silent and formless. Being is split into an uncreative, featureless material part *and* a hyperseparate, externalised and often dematerialised 'director' or 'driver', usually intelligence, mind or reason, on the other side. The 'driver' is the real author of change, as a separate mechanism or intelligence driving the materially-reduced organism from outside, and it is to this external driver that true agency and respect is attributed. Plato plays this out in the *Timaeus* with cosmos (rational principle) as driver of chaos—itself prior, formless, empty and inchoate matter.

It is important to understand how the reductive materialism that defines modernity derives from this older construction that splits mind from matter and devalues the material. It is not a bold new beginning, launching out into the void in an explosion of brave new rationality. It simply affirms universally one side of this older dualism, denying the spirit side of the original dualism completely or confining it to humans (or gods). That is, the reductionist materialism that is regarded as the new beginning to modernity is actually just a truncated dualism which preserves at its heart the original splitting and reducing process, stripping mind, intelligence and agency out of materiality and awarding it to a separate driver. It represents nature as passive and uncreative, real creativity coming only from (various) mind-identified drivers, usually humans or humanoid. Modernity's philosophical contribution so understood is less impressive: a contribution that kills off the driver without questioning the reduced concept of materiality that was its other side. This truncated dualism is what underpins the empire of man over mere things, what propels its commodity spirituality.⁶

⁶ I argued the case that reductive materialism was a truncated dualism in *Feminism and the Mastery of Nature*. This analysis also explains why it is a mistake to locate the entire problem in modernity, as

Modernist reductionism is highly relevant to the ecological crisis. This ideology has been functional for western culture in enabling it to colonise and exploit the non-human world and so-called 'primitive' cultures with less constraint. But it also inherits the dangerous illusions that deny human embeddedness in and dependency on nature. It generates modernity's dominant narratives of scientific progress, unconstrained commodity culture and unlimited growth. By consolidating the narratives of the empire of man over mere things, reductionist rationality removes key constraints at the dawn of commoditisation and capitalism. This is no coincidence of course. I think we do have to understand philosophy in social terms, not as a collection of individual philosophical ideas.

Science consolidates the empire

Science is crucial in consolidating the Empire of Man over Mere Things. In the new scientific fantasy of mastery, the new human task becomes that of remoulding nature to conform to the dictates of reason to achieve salvation—here on earth rather than in heaven—as freedom from death and bodily limitation. The idea of human apartness emphasised in culture, religion and science was, of course, shockingly challenged by Charles Darwin in his argument that humans evolved from non-human species. But these limited insights of continuity and kinship with other life forms (the real scandal of Darwin's thought) remain only superficially absorbed in the dominant culture, even by scientists. The traditional scientific project of technological control is justified by continuing to think of humans as a special superior species, set apart and entitled to manipulate and commodify the earth and other species for their own exclusive benefit.

This world is conceived as an aggregation of material objects, meaningless in themselves and only given meaning or form by their driver. This has been called 'the death of nature' (Merchant). The organismic idea of nature as a realm of creative and self-organising systems has to be killed off by capitalism/reductionism because nature in the active and intelligent voice cannot so easily be backgrounded, appropriated and destroyed for human gain. Scientific reductionism assumes a mindless meaningless materialist universe open to endless unrestricted manipulation and appropriation: nature is the suppressed slave collaborator—a mere resource, or transparent enabler of projects.⁷

Now most modern philosophy has supported this materialist reductionism in the name of defending 'hard-headed' scientific rationality. Australian philosophers, many operating under the rather misleading label 'empiricism',⁸ have been in the lead, insisting that no other rational possibilities exist.

many green thinkers do. I think we must go further back and draw in an older range of positions, such as monotheism. This means that the crucial development marking modernity is not the loss of Christianity or some other monotheistic faith, but the adoption of such a secondary reductionism.

⁷ On the knowledge model involved here, see Plumwood *Environmental Culture*, chapter 2.

⁸ And behind them stand many other English-speaking philosophers.

Alternatives are debunked as involving superstition and primitivism, even animism, in contrast to science and rationality. I think it is a serious mistake to identify science and rationality with materialist reductionism. More respectful forms of science are not only possible but are better forms of rationality.

This minimising rationality makes the least of the non-human other; it is not materialism in the sense that it respects the material order or works generally in its favour, and in my view it should not really be called 'materialism' at all. Of course, some materialist philosophers concede that often it is a better predictive assumption to think as if there were some mindfulness to the non-human world (what Dennett calls the 'intentional stance' (*Intentional Stance; Kinds of Minds*)), but they add that we don't really have to take that mindfulness seriously—it's all just a metaphor! This way we can preserve the exploitation benefits of reduction without all the costs of sacrificing knowledge and order. As a Philosophical Animist, I argue that this is doublethink, and that we do have to take the intentional stance quite seriously for non-humans.⁹ We will lose the justification for empire—an empire of growing human, cultural and biological poverty—but can open another door to a richer world, and can begin to negotiate life membership in an ecological community of kindred beings. This is a better rationality.

Creationism

This analysis casts the contemporary position known as creationism in an interesting new light. I see creationists as affirming the original reductionist split that deprived nature of creative power, meaning and mind. Creationists say things like:

I'm not a mere accident.

I am not 'a cosmic accident of a chaotic medium'.

I am not just a 'fluke of nature'.

I'm a product of unnatural selection, not natural selection, the product of a designer, a creator.

I'm not the descendant of apes. I was put here by a designer.

It [nature] couldn't have got there by itself. It needed a designer.

Several interesting things are happening here: an insistence on human apartness, and an insistence on nature's blindness and lack of mind. Apartness forces creationists to deny the fluidity of the human that the evolution story requires, its flowing on into the non-human, both at death, and in historical, evolutionary terms from non-human as well as human ancestors. The Creationist Museum in Kentucky, for example, denies the existence of 'missing link' fossils, asserting

⁹ See my argument in Plumwood *Environmental Culture*, chapter 8.

that humans have always been as they are now. Supposed 'missing links' are actually deformed people (see Bates).

It is clear that in rejecting the 'random selection' of evolution and calling for a designer, creationists are affirming the very same reduced concept of material order as 'mere things' posited by reductive materialism. Nature is an accidental, chaotic and basically meaningless sphere lacking genuine creativity. In this impoverished creation narrative, mere things have no creativity, only an external designer can have it. Creationists are endorsing the reductionist, debased, 'mere matter' concept of nature supplied by reductive science, following in the Platonic footsteps. Creationism is about re-affirming human apartness and the reduced concept of matter associated with it (including the mind/matter split), together with a project to reinstate the original driver/father, or something very like him.¹⁰

Creationists distance themselves from the meaningless 'mere things' they see science as revealing, as well as expressing the faith that the missing meaning will be returned by an all-powerful creator in the future paradise to come. Creationism is very much a reassertion of human apartness, plus the assimilation of the world of nature to the mindless and meaningless sphere left after the external driver is done away with. Nature—portrayed as random, heartless and lacking—is reduced to mere accident, a chaotic sphere evolving through blind chance and meaningless accident, and thus incapable by itself of delivering the culmination of history—the human mind, as uniquely exhibited in our own species! Meaning, intelligence and communicativity belong to the external driver, who is to be found only in the human or humanoid sphere (see Plumwood, *Feminism* 110). At bottom creationism buys the very same reduced framework as reductive materialism. *We can see contemporary creationism as a reaction to and as conceptually parasitic on reductionism.*

Of course creationists are right in wanting to reject the meaningless universe, but wrong in endorsing the driver/materiality split or in demanding restoration of the original defunct driver. Both positions are guilty of the same fault of denying and suppressing nature's own mindfulness and creativity. Science has been busy generating wondrous narratives (usually told by the scientific community in very inhibited, mind-evacuated vocabularies, and in mutually-censoring ways) about this self-creativity (see Noble). These narratives are usually much richer and more attentive to the world around us than the simplistic patriarchal narratives of the Creationists in which the world is the recent invention of a humanoid god.

¹⁰ The parallel here is an Aristotelian-style theory of reproduction, involving the suppression of the female party and the promotion of father as true creator. (Suppression means use plus denial.) The narrative that underpins these concerns links women, nature and materiality.

But science is severely hampered in countering the creationist worldview, and in representing and celebrating the creativity of nature it discloses, by its traditional identification of rationality with reductive materialism. In a way, reductive forms of science have themselves to blame for creationism. A sufficiently stripped-down, dualised machine nature demands an external, anthroform designer. So reductionist science has helped produce the demand for a designer through its own mistaken reductionist and mechanistic stance.

So to the creationist, the Philosophical Animist would say: Your story of creation is really impoverished compared to the incredible, infinite complexity of the real earth story written in the rocks and in the bodies of living things, species diversity and evolution. Without the draining out of spirit and creativity from matter and its centralisation in your god figure, we have creative, active and mindful matter all around us.¹¹ In an intentional universe we *can* have it both ways, a dispersed creativity and a decentralised intentionality. For this, we need to spread concepts of agency and creativity more widely into what we have thought of as the dead world of nature.

Thinking differently

So reductionism (reductive materialism) represents a very incomplete rejection of the original spirit/matter dualist framework. A genuine rejection would be an enriched materialism that puts back the mindful and creative properties that had been stripped out and handed over to the defunct driver. However, the debate usually assumes a false choice of reductive materialism versus creationism, with conventional science calling on us to defend the extreme reductionism and human hyperseparation that it so wrongly identifies with rationality.

The debate has assumed a false choice of creativity as the prerogative of the pinpoint agency of a singularised creator, versus creativity as confined to the human knower (culture) and stripped from non-agentic nature. The real alternatives are not creationism versus reductionism, but creationism/reductionism versus animism (as enriched materialism), where

¹¹ Monotheisms have much to answer for here too. Monotheisms have long aimed to expel the creative from all but their chosen pinpoint of reverence, and they have been able to conspire together to represent this as the normal orientation of religions. Creationist theory posits god as an external creator concentrated into a single, minimum point of intentionality and agency, a personally-responsive mind who can provide salvation from the mortal estate if properly invoked or placated. But many so-called 'primitive religions', as Vine Deloria (127) points out, have been profoundly different in acknowledging revelations of the sacred as appearing at many points and in diverse spheres. Further, according to Deloria, 'The eastern stream in which Buddhism, Taoism and Confucianism interact develops from forms of animism to the idea of a cosmic order, a way of balance and harmony following which brings stability and calm of mind, and peace and right order in society. In this stream, there is little stress on one Absolute being or God.' 'Hinduism, Buddhism and Shintoism lack one other distinction so fundamental for our Christian thinking: the belief in the basic essential difference between creation and Creator' (129 quoting Ernest Benz). ... 'Why the compulsive separation, which so many pantheist theologians have rejected? Why not be satisfied with saying: the world makes sense to us and we can operate safely within its rhythms' (130).

animism would spread mind and creativity out much more widely. That the opportunity is available philosophically to do this via openness to the intentionality of the world I argued in my 1993 book, *Feminism and the Mastery of Nature*. Monopolising mind may make us feel superior but it is not helping our accommodation to the earth.

An animist materialism has a different answer to creationism than reductive materialism identified with science (which really doesn't have an answer at all except self-promotion). It advises science to re-envisage materiality in richer terms that escape the spirit/matter and mind/matter dualisms involved in creationism. Forget the passive machine model and tell us more about the self-inventive and self-elaborative capacity of nature, about the intentionality of the non-human world. If the other-than-human world has such capacities, we don't need an external designer to put them in. It is its own designer, to the extent that design is in question.

Recent work in ecoanthropology supports this possibility for thinking differently. It finds that many indigenous cultures have much more animated, agentic and intentional views of the world of nature. Writers such as Graham Harvey, Tim Ingold and Deborah Bird Rose have shown how our concepts of rationality have misunderstood and misrepresented indigenous animism in our own dualistic terms. Colonial ethnocentrism saw 'animism' as holding that humanoid (often demonic) spirits inhabit and animate material objects as separate drivers, which could be welcomed, influenced or evicted. This ploy enabled them to read our own dualisms back into other cultures, and thus to present this major alternative to reductionism as primitive and anti-rational. In this way they were heading off the possibility of anyone (at least anyone rational) being able *to think differently*.

So the big question is: Can we think differently? Can what has been stripped out of our conception of the material world be put back? Can we begin to entertain the hypothesis that the world of nature around us may have many of the intelligent and creative powers the splitters hive off to the designer? Suppose that instead of splitting and denigrating the intelligence of the non-human world and attributing creation to an external deity or driver, we began to try to see creativity and agency in the other-than-human world around us. Although it helps to reveal the wondrous creativity of life, science has been doing an ambiguous job in conveying this message of evolutionary theory, because of its ideological commitment to reductionism and its mistaken identification of this narrow and human-centred outlook with rationality.

We need to rethink concepts of meaning and accident in relation to the non-human world, and to question the reductive and human-centred frameworks that depict places in nature, often rich in narrative, as the product of meaningless coincidence. Ancient places like the Stone Country of Arnhem Land confront

us sharply with the difficult knowledge of our own limitations as knowers, for in the complex and intricate narrative that explains the emergence of the correspondingly complex and intricate stone forms we see around us, we can as human observers never know a full story that matches the intricacy we observe. We can discern only a few of its broader outlines: that these extraordinary formations have evolved through the ancestral processes of sea, rain and wind that have sculpted them through deep tides of time. To save face, our instrumental culture conveniently dismisses the rest under the rubric of coincidence, contingency, accident, or formless chaos, belittling all complexities we cannot know or control.

Thinking differently is (in part) about recognising creativity and intelligence in nature and in evolution. Why can't we see evolution, for example, as a form of experimentation, of testing and learning, like trial and error, a form of wisdom? Why can we not consider evolution as a demonstration of mind in nature, of the intelligence involved in species differentiation and elaboration, the intelligence of forms, 'the wisdom in the wing' (Dennett, *Kinds of Minds*) in the form of the species body and its adaptation (via species difference and elaboration) to a particular creative ecological niche via a process of evolutionary learning? Dispersing creativity and agency, we can think the possibility of creative, mindful matter. We don't need to make the choice between materiality and meaning the creationists create.

Philosophical alternatives that discern wisdom and intelligence in the material world can help move us from the monological to the dialogical, from domination to negotiation with our very material ecological context. They make possible respect and renarrativisation, as ways to combat the regime of anonymous commodities, and have an important role to play in reducing overconsumption. We need new origin stories that can disrupt the commodity regimes that produce anonymity by erasing narratives of material origins and labour, and replacing them by narcissistic dreams of consumer desire and endless, consequenceless consumption and growth.

The Role of Writing

The enriching, intentionalising and animating project I have championed is also a project that converges with much poetry and literature. It is a project of re-animating the world, and remaking ourselves as well, so as to become multiply enriched but consequently constrained members of an ecological community. Opportunities for re-animating matter include making room for seeing much of what has been presented as meaningless accident actually as creative non-human agency. In re-animating, we become open to hearing sound as voice, seeing movement as action, adaptation as intelligence and dialogue, coincidence and chaos as the creativity of matter. The difference here is intentionality, the ability

to use an intentional vocabulary. Above all, it is permission to depict nature in the active voice, the domain of agency.

The path has a mind of its own but a body shared by hundreds. It is a way through the woods, a way made by the five-toes, the four-toes, the cloven hooves and a few big clodhoppers like mine. This is a path with a memory, a remembrance of passings, and it offers itself to the future for those who recognize a way worth taking. A raven rasps its rapid cries into a strong, south-westerly wind, which rakes through treetops of ash, small-leaved lime, beech and oak. In holly thickets the wind stirs goldcrests and they sing like jingling pockets of change. Old hulks of crashed elm speak of an older wood. When they were alive, a track to take out timber and charcoal cut across the slope. The elms are long fallen and so are the woodsmen whose ghost road leads nowhere. The path only slides down the steep bank to glance along old fragments of the track and then swerves back into the trees, as if deciding it a bit too unsafe to follow the abandoned way.

The path touches on the history of the hedge bank too: its mound and ditches perhaps medieval, maybe older, are also under lost trees that have shaken loose of the hedge and risen 15m into the air. And above them a pair of crows play in the updraught, tumbling through the wind, snapping at the strings of their own ways through the sky. Midway, between the canopy and the ground, a hard whirring sound: a hornet, slow in the cool air, finds its hole in the hollow lime trees and closes itself into the darkness there. On the narrow, wandering line below, gouged out of clay by hoof, pad, claw and the occasional boot, I follow—a passing thought.

(Evans 22)

Notice that in this passage there are many active, agentic subjects, which give the passage its life. Every sentence except one is in the active voice, and all involve intentionality. Although none of these subjects is human, we can all understand the passage quite well, and it does not cultivate the gothic or strike one as outlandish. I think most of us would find it beautiful.

Writers are amongst the foremost of those who can help us to think differently. Of course, artistic integrity, honesty and truthfulness to experience are crucial in any re-discovery of 'tongues in trees'. I am not talking about inventing fairies at the bottom of the garden. It's a matter of being *open to experiences of nature as powerful, agentic and creative, making space in our culture for an animating sensibility and vocabulary.*

But there are certain critical concepts that are used to stop us thinking differently, that are used in inhibiting and delegitimizing any new or old animating

sensibility. The concept of anthropomorphism, of ‘presenting non-humans illegitimately as more like humans than they really are’ plays a major role here. This charge of anthropomorphism is often invoked when someone is found guilty of presenting the non-human world in more agentic and intentional terms than reductionism allows.

Anthropomorphism is a very tricky concept, with many functions. But one of its main recent roles is that of policeman for reductive materialism, enforcing polarised and segregated vocabularies for humans and non-humans. Its covert assumption is usually the Cartesian one that mentalistic qualities are confined to the human, and that no mentalistic terms can properly be used for the non-human. Attempts to apply intentional terms for the non-human can then be said to involve presenting them in unduly human-like terms.

For example, in reviewing the recent movie about king penguins *The March of the Penguins*, many critics took particular exception to the film’s intentional description, to the idea that the king penguins could be said to ‘love’ one another. In terms of the cluster of behavioural criteria for applying the term ‘love’, such as being willing to suffer in major ways for the loved one, the application of the term to the penguins seems well warranted. True, penguin lovers may move on next breeding season, but why require permanence? A high redefinition of love as lasting forever would certainly rule out most human loves.

Of course this charge of anthropomorphism completely begs the question of non-human minds. That has become its major function now, to bully people out of ‘thinking differently’. It is such a highly abused concept, one often used carelessly and uncritically to allow us to avoid the hard work of scrutinising or revealing our assumptions, that there is a good case for dropping the term completely.¹² Stop hiding behind that wall of Greek, and try saying what you mean in simple direct language! If your thesis is to be stated as: ‘This film/book presents non-humans as much more like humans than they really are’, be prepared to be asked: ‘In what respect’? If your reply is: ‘Only humans can have minds, or the capacity to love’, be prepared to defend this indefensible claim, which is now out there in the open for all to see and engage in counter-arguments with.

Otherwise, my advice is: Free up your mind, and make your own contributions to the project of disrupting reductionism and mechanism. Help us re-imagine the world in richer terms that will allow us to find ourselves in dialogue with and limited by other species’ needs, other kinds of minds. I’m not going to try to tell you how to do it. There are many ways to do it. But I hope I have

¹² I believe there are some valid uses of the term, such as pointing to failures to respect non-human difference, but these uses are now so enmeshed with the problematic ones that they are best stated in other terms. For a more extended discussion of the concept, see Plumwood *Environmental Culture*, chapter 2.

convinced you that this is not a dilettante project. The struggle to think differently, to remake our reductionist culture, is a basic survival project in our present context. I hope you will join it.

Val Plumwood (1939-2008) was a founding intellectual and activist in the global movement that came to be known as ecofeminism. She published three major books as well as over a hundred articles and encyclopaedia entries, and her work has been translated into numerous languages. In February 2008 she died of a stroke at her home in the bush, aged sixty-eight.

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Dancing With Disaster

Kate Rigby

In light of the appalling suffering caused by the bad run of major natural, or more accurately, socio-ecological disasters that have assailed various parts of the world in recent years in the guise of sundry cyclones, earthquakes, tsunamis and wildfires, my title might well strike some readers as offensively glib. *Dancing with disaster?* Surely this is a metaphor that only someone who has not had to bear the brunt of such catastrophes in their own lives could come up with! I am uncomfortably aware that this might well be the case: certainly, the closest that this kind of disaster has come to my door has been in the relatively benign guise of the odd fallen bough from a gum tree in the garden and occasionally flooded lounge room, thanks to recent wild winds and dramatic downpours in the Dandenongs; that, and the alarming aroma of smoke and cinders wafting in from the bush during fire-prone summers, such as the one that has already wrought such grief and devastation in Victoria, and that is, alas, not over yet. I am nonetheless emboldened to tarry a while with this trope and see where it leads us, not least out of respect for my friend Val Plumwood, herself once such a keen dancer, who expressed great enthusiasm for it when I proposed it as the title for an Earth Philosophies Australia gathering that was to have been held at her home on Plumwood Mountain in the spring of 2006. Sadly, that event did not take place, and it is no longer possible to explore with Val herself the implications for thought and action that might be encoded in the image of 'dancing with disaster'. In retrospect, I think that it appealed to her not only on account of the alluring alliteration, but also because it suggests a way of responding to ongoing crisis and catastrophe that departs from those mainstream environmental management strategies that are underpinned by the ultimately self-defeating standpoint of human-centred rationalistic mastery. As I will argue below, I believe that the metaphor of dancing could prove helpful in articulating and enacting a different kind of rationality, an ecosophical *ratio*, which might better equip us for safeguarding life in a perilously warming world. First, though, I would like to indicate why I consider the question of how we deal with disaster to be so urgent in the present: that is to say, more precisely, in the context of climate change.

Briefly (all too briefly), then, it is beginning to seem highly unlikely that greenhouse gas emissions will be kept below the level necessary to avert catastrophic climate change, especially if that is as low as some scientists now believe i.e. around 325 to 350 parts per million of carbon dioxide in the atmosphere, according to the prominent American climatologist James Hansen

(Hansen *et al*). As the Executive Director of ANU's new Climate Change Institute, Will Steffen, has recently observed, since carbon dioxide concentration already stands at 383 ppm, 'according to Hansen, we are now in overshoot and thus need to become not only a zero-carbon emission global society, but a carbon-absorbing global society' (Steffen). While higher concentrations of CO₂ might still be compatible with keeping the global temperature rise below 2 degrees Celsius, our continuing failure to put a brake on emissions, let alone going into reverse, suggests that we could well have to reckon with much higher temperatures by the end of this century, as disappearing ice-caps reduce the cooling effect of reflection at the poles, while thawing permafrost and warming oceans begin pumping ever greater quantities of stored greenhouse gases back into the atmosphere. Just how cataclysmic this would be is hard to say, but it would certainly include the inundation of low lying coastal regions and skyrocketing extinction rates. Even if the direst prognoses turn out to be wrong, the degree of warming that has already been set in train is sufficient significantly to alter global weather patterns, increasing pressure on human food production as well as wildlife habitats, raising sea levels, spreading tropical diseases, and increasing the incidence and severity of what climatologists quaintly refer to as 'weather surprises', including wildfires, droughts, floods, cyclones, hail storms, tornadoes, and heat waves. The consequences of such climatic changes will be all the more worrisome where they are experienced in combination with other stressors, such as military conflict, economic hardship, political repression and habitat destruction. There is a very real danger, moreover, that we could become caught in a vicious circle, whereby our responses to the threat or impact of climate change engender further military conflict, exacerbate economic inequity, heighten political repression, and/or escalate habitat destruction. Indeed, at least two of the current strategies for climate change mitigation, namely biofuels and nuclear energy, both of which are clearly designed to safeguard business-as-usual, harbour one or more of these risky potentials. Clearly, then, there is an urgent need to figure out how we might best adapt to life in a perilously warming world in ways that are mitigation sensitive, environmentally sustainable, socially just, and, I would add, compassionate towards non-human as well human others. Crucially, that means learning how best to safeguard more than only human life in the midst of ongoing crisis and catastrophe.

If, as Val Plumwood argued persuasively in her last book *Environmental Culture*, what the so-called environmental crisis actually manifests is a 'crisis of reason', then anthropogenic climate change discloses this crisis in a particularly stark manner. At the same time, though, it also reveals the absolute indispensability of reason, if we humans and many of our Earth others are to have a chance of continuing to live, and potentially living abundantly—that is to say, freely, justly, equitably, sustainably and, from time to time, joyously—on this planet. It is, after all, scientific reasoning that has uncovered the immediate causes of

global warming and produced the prognoses of its consequences upon which, belatedly, some governments, businesses, communities and individuals are beginning to act. And we are going to need a fair bit of technical reasoning in order to find alternatives to the products and processes that are currently heating things up. That does not mean to say that science and technology hold all the answers, as some scientists, including Will Steffen, erstwhile Director of the ANU's Centre for Resource and Environmental Studies, where Val was a research associate, have come to recognize (see e.g. Fischer *et al*). In this context, it is important to recall that the target of Plumwood's critique is not reason *per se*, but a particular historically contingent construction of rationality, the continued adherence to which is looking increasingly irrational. Not unlike Jean-Jacques Rousseau's essay 'On the Origins of Inequality', penned amidst the philosophical ferment that preceded the French Revolution; Theodor Adorno's and Max Horkheimer's *Dialectic of Enlightenment*, written in the midst of the unprecedented horror of World War Two; or Jacques Derrida's post-1968 deconstruction of '(phal)logocentrism', Plumwood's work is best seen, in my view, as a contribution to the continuing self-critique of the eurowestern enlightenment project. It is not in any sense a celebration of un-reason, advancing a sentimental ethos of the (feminine-coded) 'heart' over the (masculine-coded) 'head': to do that, as she argued in *Feminism and the Mastery of Nature*, would simply leave us trapped in the cavern of 'uncritical reversal' (31-4). Rather, her undertaking entailed a philosophically rigorous—that is to say, rationally defensible—reckoning with the perilous irrationality of imagining that reason was confined to self-conscious human thought and that its application should be directed towards the mastery of the merely material realm of other-than-human 'nature'. Climate change highlights the pitfalls of this standpoint of mastery by disclosing the blindness of assuming said nature to be a more-or-less passive background to human endeavour, fully knowable and infinitely manipulable.

Two qualifications need to be made at this point. Firstly, as a glance at Peter Marshall's *Nature's Web* (1994) readily reveals, such a view has never been uncontested, even within eurowestern modernity. As recent ecocritical research has indicated, the legacy of Enlightenment and Romantic thinking about nature is particularly complex and contradictory (e.g. Sitter; Williams; Hutchings). Secondly, the construction of nature as a more-or-less passive background to human endeavour has not been without a certain historical legitimacy. That is to say, it is not a matter of mere make-believe that can easily be dispelled by education in 'the facts', as rationalist empiricists naively insist, or the invention of a new and better story, as latter-day idealists fondly imagine. Rather, in the way of all sturdy ideologies, the standpoint of mastery emerged out of, and subsequently reinforced, particular historically contingent patterns of relationship both among human groups and between humans and Earth. Within the historiography of ecocritique, estimates as to when this occurred, and why,

vary considerably. Carolyn Merchant, for example, points to the Scientific Revolution of the seventeenth century, stressing that among the various philosophies of nature that were in circulation at this time, those that legitimated unlimited human power over a disenchanted realm of brute matter proved most congenial to a capitalist modernity in the making. Some years previously, however, Lynn White Jnr. had argued that the crucial shift actually occurred in the early Middle Ages, in the wake of the invention of the heavy iron plough in northwestern Europe, which altered patterns of land-use and land ownership and fostered a more aggressively human supremacist interpretation of the biblical creation narrative in Genesis 1. In *Feminism and the Mastery of Nature*, meanwhile, Plumwood went back further still, showing how Plato's historically influential 'philosophy of death' was informed by the dissociation from the necessities of corporeal existence in the production and sustenance of life afforded privileged men in the patriarchal and slave-owning society of ancient Athens. As I have argued elsewhere ('Writing After Nature'), I think that an even longer historical bow can be drawn, namely to the emergence of the very concept of 'nature' as distinct from 'culture', which cannot be pinned down precisely, but which evidently postdates the development of agrarian civilizations in the Middle East, China and Meso-America. Certainly, no such distinction is made within Australian Indigenous languages, while the English word 'country', as it has come to be widely used within Aboriginal English, signals a continuing resistance to the settler Australian assumption of a nature-culture divide (Rose, "'Moral Friends'").¹

If the construction of 'nature' as a more-or-less passive background to human endeavour does indeed have as one of its necessary, if not sufficient, historical preconditions the invention of agrarian civilisations, then it is also worth bringing to mind the environmental preconditions for this momentous alteration in the pattern of human relationships with one another and with Earth. Among these were the existence of a stable climate with a reasonably regular seasonal cycle and fairly reliable rainfall, as well as the availability of domesticable animals and plants, along with nutrient rich soils on which to raise them (Diamond). Such conditions, by and large, have apparently never existed in Australia, which is presumably why Aboriginal people have generally chosen to cultivate a non-agrarian way of life better suited to what the land and sea of this climatically unruly yet biotically abundant continent afforded. In those parts of the world where such conditions did exist, it was on the basis of the agricultural and subsequently urban and industrial ways of life, which they facilitated, that it

¹ To point to the historical contingency of the concept of nature is not necessarily to argue against the deployment of this heavily freighted term, although Bruno Latour (2004) and Timothy Morton (2007), for example, have both provided strong ecopolitical grounds for doing so. Although I also consider this a highly problematic term, I am sympathetic to Plumwood's view ('Nature as Agency') that it still has purchase in some contexts, and so I am not among those who would proscribe it entirely.

became possible to conceive of such a thing as ‘nature’ in the first place, and in eurowestern modernity in particular, to construe said nature as a more-or-less passive background to human endeavour, fully knowable and infinitely manipulable.

From the perspective of this very long history, then, the standpoint of mastery can be seen to have been premised, among other things, on the experience in some parts of the world of a high degree of climatic stability. Is it then not deliciously ironic that our very endeavours to extend human mastery—by, among other things, ensconcing ourselves in climate-controlled built environments, as well as defying distance with high-speed transportation and denying the night with countless electric lights—are undoing the very environmental preconditions that rendered such a project conceivable, and, to a degree, achievable? This irony, moreover, is no mere quirk of fate. Our failure to reckon with the potential impact of climate change when we embraced a fossil-fuelled economy at the time of the industrial revolution should not be seen simply as a regrettable contingency that could have been avoided with greater knowledge of climatology. For this is but one—undoubtedly the most monumental and momentous—of a whole series of unforeseen adverse outcomes of particular techno-scientific advances, such as the unhappy invention of what turned out to be carcinogenic pesticides and herbicides and ozone-depleting coolants and propellants. Such instances should not just be brushed aside as random cock-ups, for they betray a systematic tendency to over-estimate the extent of human knowledge and control. They are predicated on the premise of predictability, whereby predictability implies that you are in possession of all the relevant facts that are needed to predetermine the consequences of a particular course of action. Time and again we have discovered that things were far more complex than we had assumed. Yet the premise of predictability continues to underpin much techno-scientific research, including genetic engineering, the potential benefits of which I would not dispute, but which is likely to be no less feral in its unforeseen outcomes than the invention of biocides and CFCs or the combustion of vast quantities of variously fossilized and liquefied ancient plant and animal matter. Some of the more Promethean proposals for countering global warming, such as the deployment of an array of mirrors in space to deflect some of the sun’s rays, manifest this same fatal tendency to overestimate human knowledge and control to what should be seen as a patently absurd degree. That such proposals are instead seen by some as worthy of serious consideration, despite all the stuff-ups of the past, including the monumental and momentous stuff-up of global warming itself, should alert us to the fact that what we are dealing with here is not a rational belief, but rather a deeply held assumption operating largely below the level of consciousness to uphold certain notions of human identity, along with certain patterns of relationship both among humans and between humans and Earth. What climate change discloses, then, in a

particularly powerful way, and not without a potentially tragic irony, is the crisis of a way of thinking and acting that has long laid claim to the mantle of reason, not entirely unreasonably, but that can now be seen to constitute an ideological and ultimately irrational foreshortening of the promise of rational inquiry and reflection.

That promise, we should recall, was not simply one of mastery, but also of human freedom and right relationship, both among humans and, in some variants, between humans and non-humans (which for most of Western history were assumed to include heavenly as well as earthly others). During the European Enlightenment, at least up until the time of the Great Lisbon Earthquake of 1755, that promise was frequently tied to the concept of Providence—that is to say, the optimistic belief, inspired by the physico-theology of William Derham and Lord Shaftesbury, that the natural order, as it was beginning to be disclosed by rational inquiry, manifested the wisdom and goodness of its divine creator, commonly referred to as ‘God’. Thus, for example, English Catholic poet Alexander Pope could exclaim in his influential ‘Essay on Man’ of 1733:

Who finds not Providence all good and wise,
Alike in what it gives, and what denies?
[...]
All Nature is but Art, unknown to thee;
All Chance, Direction, which thou canst not see;
All Discord, Harmony, not understood;
All partial Evil, universal Good:
And, in spite of Pride, in erring Reason’s spite,
One truth is clear, ‘WHATEVER IS, IS RIGHT’.
(Pope, lines 205-6; 289-94)

That last line should not be taken to refer to worldly relations: Pope is not necessarily saying that all is well in state and society. What he is claiming, however, is that what monotheists (or, in the case of Christians such as himself, Trinitarians) call Creation, specifically as manifest in the *oikos* of Earth, possessed its own rightness, its own rationality, even though this was only partially visible to human understanding. While the trope of the Book of Nature is an old one, what is new here is the critique of human presumption that accompanies its redeployment by Pope: the Pride to which he is referring is that of assuming that human Reason is capable of discerning what is valuable in Nature and what is dispensable or in need of correction. Because we are ourselves a part of Nature, we cannot see it as a whole (60). Moreover, we tend to evaluate other parts of the whole from a very biased perspective, namely in relation to how they might

serve or hinder what we consider to be our own interests. In treating the Earth as if it were intended only for our 'use' (132), we risk damaging the natural order that makes our own existence possible: 'From Nature's chain whatever link you strike,/Ten or ten thousandth, breaks the chain alike' (245-46).

For Pope, God is not only the guarantor of the goodness and wisdom of creation with which we meddle at our peril. God is also conceived as entering into creation on the model of Renaissance neo-Platonism, namely as the 'soul of the world':

That, chang'd thro' all, and yet in all the same,
Great in the earth, as in th' aethereal frame,
Warms in the sun, refreshes in the breeze,
Glowes in the stars, and blossoms in the trees,
Lives thro' all life, extends thro' all extent,
Spreads undivided, operates unspent,
Breathes in our soul, informs our mortal part,
As full, as perfect, in a hair as heart;
As full, as perfect, in vile Man that mourns,
As the rapt Seraph that adores and burns;
To him no high, no low, no great, no small;
He fills, he bounds, connects, and equals all.

(269-80)

Within Pope's new epistle, not only all men, but all things, human and otherwise, were made equal by a panentheistic deity, that is, one that dwells at once within and beyond the physical world. Importantly, though, they were not made alike, and Pope is eager to honour the diverse qualities and capabilities of God's 'people', human and otherwise, such as the 'sagacious' hound's keen sense of smell or the 'spider's touch, how exquisitely fine!' that 'Feels at each thread, and lives along the line' (213-18). These varied sensual and mental powers are viewed hierarchically by Pope, and he does reserve a special place for Reason, which marks out 'Man's imperial race' (209), but without being claimed for him exclusively (the elephant, for instance, is said to be 'half-reas'ning' (222)). To the extent that Pope privileges human intellectual and moral capacities, though, it is to the end of enjoining responsible rulership, based on respect for the integrity of creation and the diversity of God's creatures. Our vocation is not to act as 'the Wit and Tyrant of the whole' (50), but to become that divinely favoured being who 'cares for all' (57). By expanding the realm of human understanding by means of rational inquiry into Nature's laws, coupled with an ethos of care, we might have a better chance of living in greater harmony

with the rest of Creation, as well as with one another: this, then, was the promise of the Age of Reason, and its guarantor, for believers like Pope, was God.²

Contrary to those who accuse Christianity of engendering ecological crisis, one could well argue on the basis of the historical evidence (although I will not be able to do so in detail here) that it was precisely the loss or marginalization of this perception of Nature as God's wondrous creation in the following centuries that smoothed the way ideologically for the industrial ravaging of an increasingly disenchanting Earth. As I have shown elsewhere ('Discoursing on Disaster'), the Earth itself played a part in denting the kind of faith in Creation evinced by Pope, namely in the guise of the Great Lisbon Earthquake, which led many European intellectuals, among the most prominent of whom was Voltaire, to ditch physico-theology for a moral humanism within which the other-than-human realm of mere materiality is stripped of both communicative capability and ethical considerability. In the longer term, though, the suppression or circumscription of reverence for creation (in effect, its confinement to aesthetic experiences enjoyed after work) was driven largely by the imperatives of modern state formation and capital accumulation. While it is doubtless true that most versions of Christianity have always tended to privilege the human to a greater or lesser degree, as well as construing other-than-human nature as intended, again to a greater or lesser degree, for human use, it was only within the political economy of industrial modernity that the countervailing tendencies of wonder and care were side-lined in favour of more ruthlessly exploitative attitudes and actions.

Something similar, it must be said, has been true of the sciences, both 'human' and 'natural', the division of which has itself contributed to the ecological crisis of reason, not least by rendering it so very difficult adequately to diagnose and remedy. Clearly, though, this does not mean for one moment that we should reject science, any more than the historical failings of the churches imply that Christians should abandon their faith. As I averred at the outset, we are going to need the very best science and the greatest technical ingenuity that we can muster both in moving towards a post-fossil-fuel economy and in preparing ourselves for the potentially catastrophic climate change impacts that are now already inevitable. However, climate change is not just a technical problem requiring a technical 'fix'. Both in its causes and effects it is also a socio-economic, political, cultural, and ethical problem. Just as people of different faith communities are increasingly finding common ground in caring for creation, as indicated for example by the commitment of Parliament of World Religions that is meeting in Melbourne next year to 'Make a World of Difference' by 'Hearing

² For an extended discussion of God and Nature in Augustan verse, see Sitter. Linda Williams also provides a lively defense of Enlightenment discourses of nature, which runs counter to Merchant's rather one-sided historical reconstruction.

Each Other Healing the Earth' (Parliament of World Religions), so too tackling climate change, along with other ecosocial woes, demands the development of more integrated forms of multi-disciplinary and cross-cultural knowledge. Importantly, moreover, these new forms of knowledge will need to come from a different epistemological, ontological and ethical place from that afforded by the standpoint of mastery. What is required, then, are not only new forms of technology and knowledge—*techne* and *logos*—but, more fundamentally, a new *ethos*, and perhaps also a new *eros*, as Freya Mathews has suggested: a mode of relating to others, human and otherwise, that is enlivening and dialogical rather than objectifying and dominological.

And that returns me, at last, to my title. Climate change challenges us to explore ways of thinking and acting that depart from the mainline of modernity, calling us into relationship with others across the boundaries of 'race', class, religion, nation and, as Deborah Rose (2006) has insisted, species: unless we can respond to this call on a collective level, we are likely to descend into the most appalling barbarism. Additionally, it demands that we accustom ourselves to living under far more violent and chaotic climatic conditions than most of the world has known for some 10,000 years. Under these conditions, the premise of predictability, which has for the past few centuries enabled great technical feats, but at a great and growing cost, will be rendered increasingly dysfunctional. In particular, in the face of more frequent and extreme weather events, we will need to get a good deal better at contingency planning, recognizing that we might need to change tack at any moment in response to unforeseen eventualities. As one of Australia's leading climate scientists, Amanda Lynch, observed in a recent talk in the Faculty of Business and Economics at Monash University, '[w]e keep on looking for a big one-off solution when I think we need to expand our thinking to include more modest policy initiatives: we should be allowing ourselves to fail many times while we harvest what works. While we don't allow ourselves, and our politicians, to fail, we are robbing ourselves of potential opportunities' (Lynch). Rather than seeking to be always in command of our environment, one that has only grown more unruly as we have endeavoured to bend it our will, we would do better to learn how to adapt ourselves to the surprises that it has in store for us, recognizing that we will never have all the facts that we need to predict with confidence the outcome of any one course of action: in other words, we need to hone our skills of 'dancing with disaster'.

The kind of 'dance' that I have in mind here is not a formal dance, whether ballroom or barnyard, where everybody knows the steps in advance. It's more improvisational than that. But nor is it the quasi-solo style of improvisation that I learnt to engage in, alluringly, or so I thought, in my teens. It's more like the practice of 'contact improvisation', about which one of my doctoral students, Hellene Gronda, wrote a brilliant thesis a few years back. In this kind of dance, you cannot enjoy the comfort of distance, but are obliged to endure the risk of

constant touch. To do it well—and nobody can do it perfectly—you need to be responsive, but not passive; ready to take the initiative, but able to go with the flow; strong, but flexible; and, above all, you need to know how to fall in a way that causes minimum harm both to yourself and your partner.

Now, there are people in this country who have had plenty of opportunity to hone their skills of contact improvisation with an environment that has long been prone to the kind of climatic variability with low predictability and frequent extremes that is currently going global: in this land of fire, flood and drought, weather surprises have always been the rule rather than the exception (Rose, 'Rhythms'). In my view, the rest of the world would do well to look to the eco-cultural attitudes and practices of Indigenous Australians, as well as those of our more land-wise farmers, if they want to get an idea of what it might mean to dance with disaster in a perilously warming world.

Take drought and fire, for example, both of which are expected to become more frequent and severe in much of south-eastern Australia as a consequence of climate change. Hailing from the least fire-prone continent on the planet, and generally from regions that enjoy frequent and regular rainfall, it is hardly surprising that Euro-Australians have tended to construe drought and fire as enemies to be conquered at all cost. The amateur poet who published under the name of 'Bushman' (aka Joseph Kelly, a school teacher) in the *Queanbeyan Age* in the 1860s exemplifies this view in his poem 'Drought', in which this settler's scourge is mythologised as a dragon: 'Fiery and hot, like a dragon's breath,/Bloweth the parching north-west gale'. Kelly's metaphorical demonisation of drought is reinforced in the following lines in the image of the 'red sun' that 'sinks in a sea of blood,/With an angry and ominous frown', while 'lurid pillars of vivid light,/In tow'ring column o'er the tree-tops rise' and a 'low sad moan from the flame-capped hills,/Like the plaint of one who in sorrow grieves,/Creeps through the woods and by silent rills,/And waketh the wail of the withering leaves'. Having recalled the toll that the drought had already taken on stock and crops, bringing famine, sickness and death upon embattled farming families, Kelly devotes his final three stanzas to exhorting his readers to pin their hope of salvation on 'That Holy One whose blood was spilt/To cleanse us from sin and its loathsome slime'. Kelly's imagery positions the naturally arid and fire-prone country of the Canberra area within the frame of a cosmic battle of good and evil, as articulated through the emphatically British myth of St George and the dragon. In so doing, this Australian place is assimilated to a European cultural imaginary in a manner that militates against any accommodation to its old ways, such as might have been facilitated by entering into a respectful dialogue with the colonised people and their land.

For Kelly, drought and fire can only connote disorder, and the response that he recommends implies a flight from the earthly, insofar as this is construed as

afflicted by evil and conducing to sinfulness. The counterpart of this metaphysical solution to the hostility towards human godliness assumed to inhere in the physical world is the quest for technological mastery. Indeed, this response too is inherent in Kelly's evocation of the dragon, for although he calls his readers explicitly to prayer, implicitly his poem awakens the desire for a slayer. The persistence of this mythic urge is evident in some of the responses to the Canberra firestorm, notably in the call for more aggressive burning and even logging of the dense forests in which the fires took hold (similar calls are of course also now being heard in Victoria). In Plumwood's view:

The demand for ruthless and extensive fuel reduction to prevent fires in extreme drought years is [...] nothing more than a fantasy of a malleable, obedient land in which we can somehow intervene, even in extreme conditions, to substitute more 'convenient', cooler bushfires that do not impinge so much on our areas of possession. (Plumwood, 'Wide-scale')

Far from being a rational belief, I would add, this fantasy is ghosted by the mythos of Kelly's fire-breathing dragon that can and must be slain. Against this dream of dominion, Plumwood recommends an ethic of negotiation with the land: instead of seeking to slay the dragon, then, we would do better to follow the Indigenous example of entering into partnership with it. Such an ethic of partnership is all the more urgently needed as we face the climatic changes set in train, ironically, by our previous attempts to refashion the environment for our convenience. If we could learn how to dance with fire in the increasingly arid and combustible regions of this land, we might be better placed to minimise the disastrousness of those climatic changes that we have inadvertently brought upon ourselves and our Earth others.

In the case of major flooding and cyclones, both of which are also on the rise, other dance steps will be required: here it is more a case of learning how to enhance our flexibility and mobility with a view to simply getting out of the way, fast. Indeed, as the appalling death toll from the Victorian firestorm shows, getting out in a timely manner might also be preferable in the face of this kind of mega-sized, super-hot, fast-moving blaze. The agile dodging movements learnt in various martial arts could serve as an apt model for dancing with such overwhelming forces. However we seek to improvise our *modus vivendi* with these and other potentially devastating manifestations of encroaching climate chaos, though, it is in my view ethically imperative that we also endeavour to partner other-than-human creatures in the dance: for example, by safeguarding and extending the habitat corridors and connectivities that will enable those species who can do so to migrate to more congenial climes; and by supporting and expanding the efforts of those who seek to come to the rescue of animals caught up in the catastrophes that we have brought upon them. With direct

reference to the Victorian bushfires, the Ecological Humanities research community:

acknowledges the entangled accountability of human beings in this, and other, anthropogenic 'natural disasters'. We are brought into a space of grief: for the suffering and loss across so many kinds of living beings, and for our own involvement—sharing the suffering but also acknowledging our very real responsibilities. (Victorian Bushfires)

While such events summon us into mourning, they could also spur us into action, both to prevent a more dire degree of warming than we are already in for, and to discover ways of responding creatively, compassionately, equitably and sustainably to those potentially catastrophic impacts of climate change that can no longer be forestalled. In this context, cultivating the art of ecosophical contact improvisation might help us to 'travel hopefully', as Martin Mulligan puts it, on a doubtless difficult journey, the destination of which has become profoundly uncertain, but which we can be sure will be full of surprises—most, but perhaps not all of them, unpleasant—along the way.

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A Postcapitalist Politics of Dwelling: Ecological Humanities and Community Economies in Conversation

Gerda Roelvink and J.K. Gibson-Graham

Introduction: How do we live together with human and non-human others?

If our species does not survive the ecological crisis, it will probably be due to our failure to imagine and work out new ways to live with the earth, to rework ourselves and our high energy, high consumption, and hyper-instrumental societies adaptively. We struggle to adjust, because we're still largely trapped inside the enlightenment tale of progress as human control over a passive and 'dead' nature that justifies both colonial conquests and commodity economies. The real threat is not so much global warming itself, which there might still be a chance to head off, as our own inability to see past the post-enlightenment energy, control and consumption extravaganza we so naively identify with the good, civilized life—to a sustainable form of human culture. The time of *Homo reflectus*, the self-critical and self-revising one, has surely come. *Homo faber*, the thoughtless tinkerer, is clearly not going to make it. We will go onwards in a different mode of humanity, or not at all. (Plumwood, 'Review' 1)¹

This powerful statement opens Val Plumwood's review of Deborah Rose's book *Reports from a Wild Country: Ethics for Decolonisation* published in the *Australian Humanities Review* in August last year. We begin this essay with it because we wish to engage with the ideas of Plumwood, Rose and other feminist ecological humanities scholars as we ponder the question of how to live together with human and non-human others.

Plumwood's call follows anthropogenic crises that have become all too familiar. A BBC documentary 'Global Dimming' demonstrates the overflowing nature of such crises and provides a shocking wake-up call about global responsibility. It tracks how the Ethiopian famine that killed ten million people in the early 1980s resulted from the failure for more than a decade of the yearly monsoon. This catastrophe was caused as the water-laden tropical air mass was prevented

¹ Recent scientific evidence suggests that Plumwood is perhaps too sanguine about our chances of heading off global warming (Flannery).

from moving northward by Europe's spreading pollution haze. A PBS documentary 'Dust Busting' tracks how dust blowing across the Atlantic from the Sahel desert has produced coral reef death and marked increases in rates of asthma in the Caribbean, a condition suffered particularly by children. In a sinister parallel to the Amazonian butterfly whose flapping wings contribute to a distant tornado, driving cars to get to work to make a living, support a family and produce profits for the corporate sector in northern Europe has resulted in Ethiopian farmers being deprived of a living and increases in childhood and coral sickness in the Caribbean.

Capitalist industrialization the world over, but predominantly in the global north, has extracted vast quantities of surplus value from working people, and comparably vast quantities of non-renewable resources from nature. 'Drunk on oil', as Gore Vidal describes the wasteful extravagance of the last century, our economies have depleted the natural environment upon which life depends and damaged the ability of distant others to sustain non-capitalist livelihoods. Those of us who have benefited from increased consumption have been shielded by our geography from the worst effects of the drawdown of our environmental commons—though we have only to open our eyes to see species extinction at our back door.

Contemporary eco-economic crises suggest that we can no longer think about economic growth as an infinite human project. The scientific evidence for, and widespread popular acceptance of, global climate change is a daily reminder that the drive for economic growth, fuelled by capitalist profit-making, is not sustainable. Examples of complex interdependence, such as those above, could be multiplied many times over if we cared to turn our minds to the task. Perhaps we don't because of the dismay this exercise produces, or the guilty paralysis it induces. J.K. Gibson-Graham argues that these emotions of resistance stand in the way of reparative action that generates hope and engages new possibilities (*Postcapitalist Politics*). Plumwood urges us to abandon *homo faber* and become *homo reflectus*. We ask here, what might it take to become the different kinds of humans/humanity that are required for ethical living in the anthropocene?

Val Plumwood died last year and was buried on her beloved land a few metres from the coastal escarpment directly east of Canberra. For a number of years we had been dreaming of a workshop in which a group of feminists interested in rethinking economy would sit down with the Australian 'goddesses' of feminist ecological rethinking to explore our connections and inspirations and thereby extend and strengthen our parallel projects—all of which circulate around the question raised above. Dreams get forgotten, and though this one was never far from our minds, it was waylaid by ill-health and circumstance—much to our regret. But as Val was lowered into the earth, a butterfly hovered over the grave and the baton was handed on. It was time to move forward with these questions

and the conversation between her work and ours that had already begun in so many ways.

In this essay, we document the beginnings of this conversation and suggest where it might go. We start by demonstrating the ways in which ecological thinking has already informed the project of rethinking economy and, in particular, the work of J.K. Gibson-Graham. We continue the conversation by making explicit the connections between Plumwood's understanding of place and our idea of the community economy. We then draw inspiration from ecological humanities scholarship to develop a post-humanist perspective on community economies that might help us participate in economic life in a way that recognizes and responds to implicated human and non-human others.

Ecology and economy

A conversation between economic and ecological scholars has been central to feminist rethinking of the economy. Concerned by representations of capitalism as naturally hegemonic, Gibson-Graham embarked on a project to deconstruct capitalocentric representations that construe all economic practices 'as being fundamentally the same as (or modeled upon) capitalism, or as being deficient or substandard imitations; as being opposite to capitalism; as being the complement of capitalism; as existing in capitalism's space or orbit' (*The End of Capitalism* 6). The project draws on the work of other feminist economic scholars including Nancy Folbre ('A Patriarchal Mode'; *The Invisible Heart*), Hazel Henderson and Marilyn Waring who highlight the invisible economies of care, informal market and non-market activities, and gifts of nature that make up our economic existence. Gibson-Graham's alternative representation is a 'diverse economy' comprised of many different

- market, alternative market and non-market **transactions**,
- ways of performing and remunerating **labour**, and
- **enterprises** with distinctive ways of appropriating and distributing surplus labour (including capitalist, feudal, communal and independent businesses).

'Diverse economies' is a performative research programme that opens up a wide range of possibilities for experimentation and ethical debate about the provisioning of individual and social needs (*Postcapitalist Politics*; 'Diverse Economies').

Ecological thinking with its central acknowledgement of eco-diversity has provided creative inspiration for this re-presentation. Scholars of diverse economies have been especially interested in using new ecological thinking to challenge the ways in which economic dynamics of change are theorized. In particular, theories of complexity and non-equilibrium systems call into question unidirectional and essentialist assumptions about economic development. In thinking about alternative development dynamics, for example, Gibson-Graham

(‘Diverse Economies’ 625) draws on Jane Jacobs’ extension of ecological thinking to the economic domain. Jacobs asks us to abandon the economists’ view of the ‘supernatural’ economy and to recognize economies as akin to natural systems that ‘require diversity to expand, self-refuelling to maintain themselves, and co-developments to develop’ (Jacobs 143-44). This has led Gibson-Graham to foreground

- economic diversity (including diverse class processes and forms of surplus appropriation) as a possible way of strengthening the resilience of local economies, and
- ethical choices, rather than structural imperatives, as key drivers of economic transformation.

In exploring the practicalities of local economic development in the context of research interventions in the Philippines, Gibson-Graham (‘Surplus Possibilities’) has also been influenced by Rose’s thinking about the impacts of human actions on the resilience of nature. We can apply this thinking to consider the resilience of diverse non-capitalist economic practices. Rose distinguishes

- anti-resilience actions that destroy ecosystems—such as dams, plantation forests, monoculture;
- engineered resilience that forces nature to behave as humans like—such as fire suppression in protected forests; and
- resilience facilitation that enables ecosystems to flourish—such as when place is left alone or when there is active engagement to resuscitate ecosystems (Rose 48).

In the economy, these actions are mirrored by

- anti-resilience actions that destroy the diverse economic practices that sustain well-being directly—such as imposing taxes or fees that must be paid in cash on subsistence livelihoods or appropriating land and forcing people to seek paid work;
- engineered resilience—such as defining diverse community practices as ‘social capital’ and using them as an input into micro-finance schemes or capitalist enterprise development; and
- resilience facilitation that supports the diversity of community-based economic practices of gifting, sharing, reciprocity and cooperation that deliver material and emotional support directly.

These three mirrored courses of action toward nature and economic diversity reveal some of the ethical choices we are faced with as we confront the question of how to live today.

In thinking about a diverse economy, we have been preparing the ground for a consideration of how to live together, or what we have called the ethical

dimensions of economic practice. In parallel with feminists in ecological humanities, we are interested in acknowledging and developing an ethics of care. Such an ethics is concerned with the question of how to enact our interdependence with each other and with nature in a manner that respects the other in all of its forms.

Place and the community economy

We have approached our ethical concerns through the lens of the ‘community economy’ as theorized by Gibson-Graham and discussed at length in *A Postcapitalist Politics*. The community economy is a performative project that reconstitutes the economy through ethical practices of coexistence that recognize and constitute the commonality of being. As a guide to economic ethics, Gibson-Graham extends a reading of Jean-Luc Nancy’s work on community as the ‘commonality of being’ (*Postcapitalist Politics* 81-2). For Nancy, the community is best approached not as a model, identity or essence but as the relationship of ‘being-in-common’ and the togetherness inherent in any notion of singular ‘Being’ (Gibson-Graham, *A Postcapitalist Politics* 82). The community economy is thus not an economic form but rather the praxis of co-existence and interdependence.

Gibson-Graham specifies four coordinates around which being-in-common is economically negotiated:

1. what is *necessary* to personal and social survival,
2. how social *surplus*² is appropriated and distributed,
3. whether and how social surplus is to be produced and *consumed* and related questions about personal *consumption*,
4. how a *commons* is produced and sustained (*Postcapitalist Politics* 88).

The first three coordinates of coexistence and interdependence are informed by a Marxian account of surplus labour production, appropriation and distribution—the economic processes and flows that support and make possible a complex society. Under varying conditions surplus labour is extracted from producers and distributed to non-producing workers, pre-producers, post-producers, injured producers and others (Gibson-Graham, Resnick and Wolff 2000). Marx employed the concept of surplus to keep track of the invisible labour that supports lives, highlighting in particular the exploitative nature of surplus labour extraction within the capitalist class process. In performing a community economy the interdependence of different kinds of labour is a matter of consideration in all economic decisions. The fourth coordinate involves the interdependence between humans and nature and draws attention to the socially

² The term social surplus has been proposed as a way of thinking about the aggregation of various forms of surplus labour produced within all the different class processes making up a society (capitalist, communal, independent, slave and feudal) (DeMartino 2003; Gibson-Graham *Postcapitalist Politics*).

mediated relations of access to and care of the environmental commons. The Marxian tradition's preoccupation with a labour theory of value has made it difficult to account for the contributions to society's survival made by a range of non-labouring humans and non-human 'others'. Yet a community economy must be able to acknowledge that what appears to be surplus is often constituted, in part, by drawing down the environmental commons, often of those in distant places.³ This is a point that Val Plumwood helps us to think about ('Shadow Places' 3).

Our understanding of the community economy as a relationship between 'Being' and 'being-in-common' resonates with eco-feminist reworkings of the idea of bioregionalism, especially Plumwood's work on an ethics of place ('Shadow Places'). In her posthumously published essay 'Shadow Places and the Politics of Place' she takes us beyond the dualist separation of materially supportive places and places of personal attachment. She asks us to think about attachment to place not in terms of a particular identity or group but as an attachment to all that supports one's life. In 'Shadow Places' Plumwood directly contrasts a "'community" version of individualism' with her vision of the 'community in relationship with others' ('Shadow Places' 7). Drawing on indigenous concepts such as 'country' that convey this sense of place, Plumwood asks,

What is the effect then of starting from the other, materialist end and taking this indigenous concept of country...as a criterion of 'your place', so that *'your place' is those parts of the earth that 'grow you', that support your life?...*The indigenous criterion reveals, as *denied or shadow places*, all those places that produce or are affected by the commodities you consume, places consumers don't know about, don't want to know about, and in a commodity regime don't ever need to know about or take responsibility for. ('Shadow Places' 6; emphasis in the original)

Plumwood provides an approach through which an ethics of place can be practiced. She calls on us to 'honour' all that supports our life:

Think what it would mean to acknowledge and honour all the places that support you, at all levels of reconceptualisation, from spiritual to economic, and to honour not just this more fully-conceived 'own place' but the places of others too. Such a program is politically radical, in that it is incompatible with an economy of privileged places thriving at the expense of exploited places. Production, whether from other or self-place, cannot take the form of a placed-degrading process, but requires a philosophy and economy of mutual recognition. ('Shadow Places' 7)

³ This is true for exploitative and non-exploitative enterprises—including capitalist firms, worker collectives, and independent producers. Because the contributions of the environment are not taken into account, in practice (though not conceptually or in Marx's philosophy) they end up in the residual we identify as 'surplus'.

She offers the principle of recognition as a guide for the ethical consideration of interdependence. Applying this principle to the practice of everyday life, she considers the question of meeting our daily needs:

a judicious combination of local and non-local production and care seems the most likely as well as the most sustainable outcome. This means sourcing more of our needs from local land, using forms of discount for the local perhaps, and extending public and political forms of care and value to those non-local areas our production and consumption impact upon—for example by giving value and standing to distant land and its ecological services and taking some social responsibility for its maintenance. But we have many options other than self-sufficiency for the mix here.

To envisage these options, think about the difference between the ideals of growing all your own vegetables in your own garden, versus participating in a community garden, in Consumer Supported Agriculture, or in a cooperative working for trade justice, as contrasting and potentially complementary routes to place accountability. ('Shadow Places' 7-8)

Recognition of interdependent economic action involves accounting for both the labour of others, as well as the places/'country'/environments/non-human others that support our lives. We are interested in developing an ethics of surplus that takes these hidden constituents of production and survival into account. Eco-feminist research helps us to extend the community economy coordinates to include relationships between human and non-human 'earth others'.

Toward a post-humanist ethics of community economy

Our rethinking of the community economy acknowledges the blurred boundaries of humans, the natural environment and others that make life possible and shape the character of life. We have begun to rethink the community economy in a post-humanist way, seeing it as a performative outcome of an array of interdependencies, between humans, environments and non-human entities. This reframing displaces humans as the sole agents of ethical decision-making. Yet how to include non-humans into processes of decision-making remains a central challenge.

Eco-feminist scholarship has supported us in extending our analysis of the diverse economy to recognise the hidden constituents of surplus production, appropriation and distribution. Through this extension, we have reframed the coordinates of the community economy to take into account the intertwined entities involved in living together—what geographer Sarah Whatmore (159) has termed 'relational ethics'. Here we pull out some of the ethical actions that

might be a precondition for living in the world in a 'different mode of humanity' (Plumwood, 'Review' 1).

Necessity

Decision-making about *necessity* must not only be relevant to the human body and its culturally conditioned needs but also must consider the needs of other entities that are part of the overdetermined process of production in a community economy. Research in the ecological humanities has enabled us to recognize and consider some of these diverse forms of necessity. Jessica Weir (2008), for example, represents rivers as an active force capable of replenishing themselves provided they are not denied water. She suggests that agricultural production in South Australia take into account the water that is necessary for river systems to sustain themselves. When the food needs of humans conflict with the needs of rivers, the ability to sustain agriculture is undermined.

Deborah Rose documents how Aboriginal peoples' needs for water and their ability to replenish themselves were denied by colonial pastoralists who predicted Aboriginal people would 'die out or be assimilated, and thus did not expect to have to share land, politics and history with them' (Rose 84). Rose shows how in conflicts over water in Australia, colonial pastoralists were able to recognize the co-implication of water, cattle and colonial settlement while at the same time believing that their society could not coexist with Aboriginal peoples (84). While Aboriginal peoples were figured as less than or non-human, cattle were seen as 'non-human members of these conquering societies' and "'clearing the land" in the context of colonising pastoralism meant eradicating or subduing the natives in order to make room for cattle' (84). The needs of cattle in production were thus privileged over Aboriginal needs. Rose's account suggests that we can see cattle as 'agents of colonisation in their own right as they impact on the ecologies they encounter', bringing enormous changes such as land degradation and threats to ecological resilience (85). Careful consideration of the diverse labours involved in economic life shows the way in which some needs (such as those of cattle) are provided for while others are undermined (such as those of rivers and Aboriginal peoples). A post-humanist reading of economic activity extends the right of compensation to a range of human and non-human others.

A post-humanist community economy might also imagine different ways of meeting diverse needs. Plumwood's essay 'Decolonising Australian Gardens' (2005) offers wombat lawn-mowing as an example of 'interspecies garden ethics', but it could also be seen as an example of a community economic practice that recognizes non-human needs, values non-human economic inputs and places a brake on consumption. In her garden Plumwood welcomed wombats to graze and as a result did not need a motorised lawnmower. 'Making a space for wombat lawnmowers', she wrote, 'is an example of adaptive and mutually beneficial gardening mode which negotiates with a prior presence, since what benefits the

wombats also benefits me' ('Decolonising' 7). Might there be other interspecies production activities that provide for diverse needs and foster respectful interdependence?

Surplus

Non-human others and non-labouring others are also implicated in the production and appropriation of *surplus*. The contributions of the environment to industrial agriculture, manufacturing and services are rarely taken into account, yet these 'gifts' turn up in the residual surplus that is left over after the direct (labour) and indirect (machinery and raw materials) costs of production have been met. Underpinning the production and appropriation of surplus is the unremunerated exploitation and degradation of the environment. Rose's research in New South Wales shows how the clearing of forested land for intensive agriculture threatens the existence of a number of communities—the Aboriginal community whose life is intertwined with the forest, the 'self-supporting' farming community that 'collapsed' as farming was scaled up and intensified, and the animal and plant ecosystems that form forest communities (Rose 205). These 'costs' (or 'externalities' in the language of mainstream economics) are rarely accounted for, yet they contribute to the magnitude of the surpluses generated by agricultural production.

One farmer who values the interdependent relationships between diverse plant, animal and human communities has chosen to leave a large proportion of land uncleared, though it reduces his cash income (Rose 204). This farmer is making an ethical decision to recognize and respect the place, along with its human and non-human others, that supports his living. Accepting a lower economic return on investment, he gains reciprocated respect from the human and non-human others with whom he shares a dwelling place. Like this farmer, pastoralists are currently reorienting away from 'maximum extraction' of water from river systems (and maximum surplus generation and profits) to 'working with' the flows of floods and dry periods so that their agricultural production process can be rebalanced with natural processes (88). By recognizing nature's gifts and the thefts that contribute to surplus generation we are able to make ethical decisions about what levels of surplus production are environmentally healthy, socially and naturally just and sustainable. Bringing these considerations to the fore is part of occupying place through a different mode of humanity.

Consumption

The coordinate of *consumption* highlights the different ways that surplus and other wealth might be consumed by both businesses and individuals and the implications this has for human and non-human others. The pressure to produce profits pushes capitalist producers to limit so-called 'productive' consumption, that is, inputs into further production. Whatmore shows how cost-cutting on

animal food, animal care and housing to maximize profits can result in diseases, such as Bovine Spongiform Encephalopathy/Mad Cow Disease-Creutzfeldt Jakob Disease, which threaten entire industries and undermine the broader health commons. The quality of animals' consumption and living conditions are increasingly informing human consumers' decisions over which kinds of products to purchase, such as free range and organic foods (Whatmore 164). Whatmore's study of mad cow disease suggests that markets have been reframed by a new ethical concern for animal wellbeing, with organic and GM-free markets as examples of this reframing.

Fair trade networks are another example where First World consumers are beginning to take into account the quality of life of distant others and the relationship between cheap products and the survival needs of Third World producers (Roelvink 155). Worker-owned cooperatives often practice a relational ethics by consciously distributing some profits (surplus) to the community that supports their existence. The Big Carrot was established as a worker-owned cooperative supermarket in 1983 and is today 'Toronto's largest worker owned natural food market'. The cooperative is guided by a 'commitment to both natural foods and the building of a democratic workplace' (Big Carrot). Sally Miller relates how in 2000 the Big Carrot co-operators decided not to stock genetically modified foods. This decision emptied an enormous amount of food products from the shelves. Despite reducing the food available, the decision was a commercial success with consumers making the ethical choice to support the Big Carrot and foster the production of non-GM food (Miller 2008).

A post-humanist community economy brings the intertwined nature of economic life to the foreground in decision-making around consumption. This enables the social and environmental implications of individual, enterprise and social consumption to be explored and ethically negotiated.

Commons

Finally, as the other areas of economic coexistence demonstrate, our rethinking displaces the human as the sole caretaker of the *commons* and leads us to consider the role of non-humans in making and sharing a commons. The 'self-repairing' actions of the natural environment (Rose 207) are surely part of the making of a commons. And the symbiotic relationship between humans and non-human entities are surely a sharing of the commons. A post-humanist community economy recognizes nature and non-human entities as actively participating in making and sharing a commons (Gudeman 27) and thus constituting community alongside humans.

Conclusion: Choosing a reparative stance and a posture of openness

Our project to rethink the community economy in a post-humanist way, seeing it as a performative outcome of a collective of interdependencies including nature and non-humans, requires a different approach to ethics. Eco-feminist scholarship has aided us here in thinking about an ethics that recognizes intertwined entities living together. Such an ethics requires a sensitivity to all that is implicated in economic performances, a sensitivity that has a number of dimensions. Plumwood, for instance, highlights the importance of stance and posture in how we relate with others (*Environmental Culture*). This resonates strongly with Gibson-Graham's work to cultivate herself as a 'theorist of possibility' by consciously adopting an open stance:

the kind of choices we continually make about *what to do* and *how to act* in particular situations are also required of us as thinkers. These include the stances we adopt, the affective dispositions—that color our thinking and impinge on consciousness as feeling—practical curiosity and openness to possibility, for example, or moral certainty and the acceptance of constraint. (*Postcapitalist Politics* xxix; emphasis in the original)

Gibson-Graham inhabits a reparative stance that 'welcomes surprise, entertains hope, makes connections, tolerates coexistence and offers care for the new' (*Postcapitalist Politics* 8). She suggests that such a stance is useful for enlarging economic possibilities and our possibilities of connecting with others.

Plumwood's work helps us extend the connection with others to 'earth others':

What is required in order to be 'a receiver' of communicative and other kinds of experience and relationship is openness to the other as a communicative being, an openness which is ruled out by allegiance to reductive theories. To view such differences as simply 'theory choices' is to overstate the intellectualist and understate the performative aspects involved, which is captured somewhat better in the terminology of posture or stance. Is it to be a posture of openness, of welcoming, of invitation, towards earth others, or is it to be a stance of rejudged superiority, of deafness, of closure? (*Environmental Culture* 175-76)

Stance is a vital part of Plumwood's communicative ethics in which communication is broadly understood to encompass a range of sensitivities. Putting the receptive stance into practice involves being sensitive to the intentionality and agency of others (*Environmental Culture*). An open, receptive stance allows for the appreciation of the great variety of beings our economies enable, not just humans but all 'earth others'.

Leo Tolstoy wrote that 'Everyone thinks of changing the world, but no one thinks of changing himself'. Feminism actually has thought about changing the self, and Val Plumwood's life was led by changing herself in accordance with her evolving beliefs. She is a guide for us as we continue to navigate living together.

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J. K. Gibson-Graham is the pen name of Katherine Gibson and Julie Graham, feminist economic geographers who work, respectively, at the Australian National University and the University of Massachusetts. They are the authors of A Postcapitalist Politics, The End of Capitalism (As We Knew It) and Class and Its Others.

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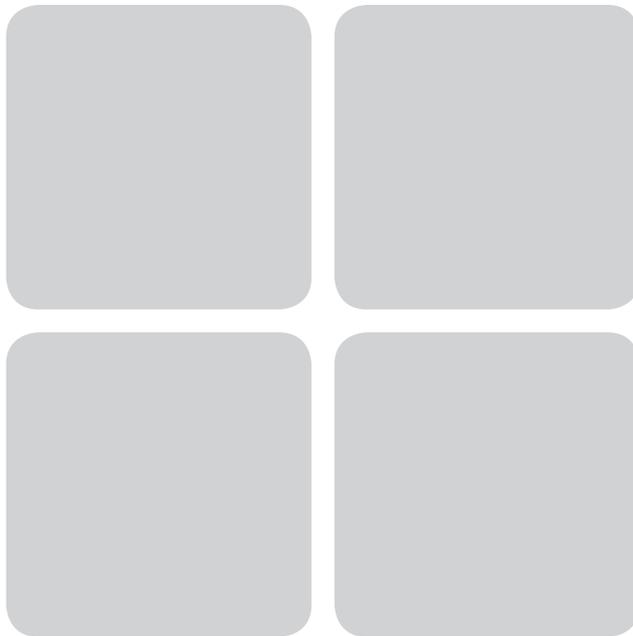
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BOOK REVIEWS

How to write history about Australia that is ugly

The Summer Exercises

By Ross Gibson

University of Western Australia Press, 270pp, \$24.95, 2008.

ISBN: 978-1921401-20-6

Reviewed by Simon Robb

This is an ugly sort of book that you wouldn't leave lying around for some kid to see.

If you're the sort that likes photos of dead people you don't even know, be my guest.

Maybe you fancy a dead man lying on his bed in a squalid room with disgusting curtains and an old wireless and walls that look like they've never been cleaned and words about a 'Slow decay', 'Living into dying', 'Leaching' and something about a bang and a whimper.

W.B. Yeats' death scene? No. Just a poor dead mug.

There are dead mugs and plenty of mug shots of criminals here if you like that sort of thing.

Maybe you like the idea of a seamy old Australia. It's here if you want it.

There's a real stink here that emanates powerfully of filth, poverty and ignorance.

There's also a fictional stink. Cops and robbers. A priest doing confessional writing. Investigating the real and its materiality, its poetics and spirit, that's a story about detectives and priests.

This is a book leaden with materiality.

This is a good book for people who want to imagine walking through a museum of fading, decomposing, infested, archaic Australian society.

Australians, cop your own filthy ugly historical things.

This is an Australia where a steak and salad dinner meant a slab of meat with couple of slices of tomatoes and some diced lettuce. Those salad days are gone. You don't have to worry about those days anymore, unless you're a cop, or a priest, or poor, or homeless, or young and on the streets. If you are you might want to avoid this book, or you might want to carry it with you, as a guide.

This is a collection of stinking zombies aka white Australia 1946-64. Zombies populating Sydney, trying to look like normal citizens on bad hair days.

The story doesn't matter so much. It's a story about a priest working with some Sydney detectives and following them to crime scenes. He also does some of his own investigations. Follows the traces of a woman who fled from her boring life to seamy Sydney night clubs and porno films made somewhere in the bush. The story doesn't matter so much because it's really something to hang the pictures on. Pictures need walls to hang on. The story's like the walls of a museum. And these walls hang the pictures pretty well.

The priest's narrative hangs on an idea that's Christian and old. It's the idea of writing as a spiritual exercise. Finding out about your relationship to God by interrogating the ways of the world, the way you read the world, and what's really inside your spirit. This is the wall the priest's narrative hangs on.

This is a book that will tell you how to write history about Australia that is ugly. If you find yourself with photos of a past thing, an historical thing (take for example the mean-streets of post war Sydney), and you decide you want to *do* something with them, then you have to choose, why this one, why that one? That's a hard choice to make and we don't know what motivated the choices in this particular instance because we don't know what's going on inside the head of one Ross Gibson.

There are pictures here of streetscapes exploding in ethereal light, and other sublime instances. We might say they resonate aesthetically, which is an inadequate way of saying they are beautiful. We don't have to say why we choose beauty, if we don't want to. But we need to make the choices work. This photo, because it's beautiful, that's an aesthetic choice. This photo because it's needed, that's a practical choice, and this process goes on and on until we get to making the historical things work.

Historical things can hang on a wall but no one will notice them unless they are hung right. The right way to hang historical things is with the right words. The words in this book are good and right. They hang the historical things so they can be seen in the pure light of day and the pure darkness of the night.

That's why there's a priest who writes and sees. He's there to do the sublime and aesthetic work that's needed to hang the historical things up right. And if he's also grounded in the cop view of things, that's for the materiality of things to be present and accounted for, as things always are, on the mean streets.

A museum without walls used to be an interesting idea. But all the things fall to the ground when there's no walls. Or they blow away. Or get rained on. Or burnt to the ground. If you want to show the old things because they engulf you with a desire to live, or because they glow with the life of another world, then you need to hang them on something like a wall made from good words.

There are good words here and there are good walls made from words to hang the historical things that will help you to read history about Australia that is ugly.

Simon Robb is a writer interested in experimental histories. He is currently a Research Fellow at the University of South Australia working on ideas of hopefulness, youth and marginality. His previous publications The Hulk (Post Taste, 2003).

Beneath the discontinuity...

Disciplining the Savages, Savaging the Disciplines: Exploring Inscriptions of Islanders in Western Systems of Thought

By Martin Nakata

Aboriginal Studies Press, 247pp, \$44.95, 2007.

ISBN: 0855755482

Reviewed by Robert Kenny

The Cambridge Anthropological Expedition to the Torres Strait Islands of 1898 is one of the landmarks in the development of modern anthropology. Until this point the great anthropologists of Britain, such as E. B. Tylor and James Frazer, typically stayed at home, and relied on correspondents to supply them with the information from which they formulated their theories. There had been works produced from the field, often by 'amateurs' or missionaries, such as R. H. Codrington, Lorimar Fison and A.W. Howitt, but these were primarily seen as raw material for the great 'armchair' theorists back home in Britain. The notable exception had been Baldwin Spencer's field trips to central Australia in the company of the Alice Springs postmaster Francis Gillen a few years earlier. But Spencer was based in Australia, and the Cambridge expedition, along with the contemporaneous expedition to northern America directed from the USA by Franz Boas, marked the beginning of what would become the norm of anthropological practice: practitioners of the discipline spending time in 'the field' to gather material directly to support their theories.

The expedition had been initiated by Alfred Cort Haddon, who had trained as a Darwinian zoologist before taking up a position in anthropology at Cambridge. Haddon led the expedition but its most important member, in some senses its co-leader was W. H. R. Rivers, a Cambridge neurologist and psychologist who had trained in experimental psychology in Jena, Germany, and had been a student of the British neurologist John Hughlings Jackson. Rivers recruited his two favorite psychology students to the expedition, C. S. Myers and William McDougall. Also on the expedition were the linguist S. H. Ray, the pathologist C. G. Seligman, and a photographer, Anthony Wilkin. The 'field trip'—the term was invented by Haddon—itself lasted seven months. It produced over six volumes of reports published between 1901 and 1935 and it established Rivers as one of the founding fathers of modern anthropology.

The expedition features prominently in Martin Nakata's *Disciplining the Savages: Savaging the Disciplines*—a work that subjects 'Western' disciplines such as anthropology, linguistics and psychology to uncomfortable scrutiny. Detailed descriptions of the methods, intentions, findings and—most importantly—the

premises of the members of the expedition take up five of the seven chapters of Part One, almost half the book. Only the first short chapter deals with early missionary activity in the islands, and the section's last chapter gives a short history of the premises and assumptions behind colonial administrative, church and commercial actions in the Islands over the past century or so.

Given—as Nakata himself points out—that the anthropologists stayed a short time and had little direct impact on the Islanders, while the missionaries and others came to stay and radically affect life in the Islands, the space devoted to the expedition of 1898 seems at first glance disproportionate. However, a central purpose of Nakata's book is to expose how much particular disciplines, particularly anthropology, represent knowledge systems which have imposed 'inscriptions' upon Islanders in a way that continues to influence policies and actions in the Torres Strait Islands and towards indigenous peoples in general.

Among other positions, Nakata holds the Chair of Australian Indigenous Education at the University of Technology Sydney. He has published extensively on issues related to Indigenous education. He is a Torres Strait Islander. He is thus placed in a position where he is confronted with a great reality. His own knowledge crosses from Islander experience to the 'Western' disciplines. He carries this experience into a context—that of education practice and policy—in which the problems of indigenous and settler-migrant Australians rise are critically present. Part Two of his book examines how these contemporary practices are informed by some of the disciplinary premises exposed in Part One. In the last part of the book, Nakata proposes some innovative theoretical approaches to deal with the difficulties he has identified earlier.

Because Nakata is writing as a Torres Strait Islander and as an educationalist educated within the disciplines of the 'Western' knowledge systems, his book is as personal as it is theoretical. Indeed, Nakata recounts how he was prompted to write when, as a mature-age undergraduate, he was told that he was not really Islander enough because he did not conform to the Western idea (1) of an Islander. That experience made him acutely aware that even among 'sympathetic' outsiders, his viewpoint was not simply misunderstood but ignored. Nakata decided to examine the 'inscriptions' of Islander that lay behind such a proposition: 'My task then was to know how such a knowledge system created a position for Islanders through which we have all come to view Islanders and their problems. Only then could I, a Torres Strait Islander, understand why my view point was never understood and how I could go about changing this situation' (11). This is why he devotes so much space to the 1898 expedition.

One aspect of the Cambridge Expedition that is evident in Nakata's detailing of it is how predominant psychologists were among its members. The psychologists themselves were informed by evolutionist ideas which had become increasingly important to the emerging discipline of psychology in the late nineteenth century.

River's mentor, Hughlings Jackson, under the influence by Herbert Spencer's evolutionism, had proposed that mental disorders such as aphasia could be understood as results of a reversal of evolution. Thus, to study 'less evolved' peoples was to gain insight into the development of the brain and its pathology. Proponents of evolutionary anthropology confidently asserted that to study 'primitive' peoples was to glimpse the past of man. Rivers and the rest of the Cambridge expedition carried such views with them when they travelled across the seas to the Torres Strait. Although Rivers would, a few years later, abandon this evolutionist model—which represented other cultures in terms of necessarily different stages of development—and would adopt a 'diffusionist' model which proposed that differences and similarities of culture were to be explained by the spread of ideas and technology.

One result of the evolutionist position was to view 'primitive' peoples as representing the 'childhood of man' and thus to understand indigenous peoples as akin to children. Such a position had great influence on educational policies towards that helped to limit the rights of, indigenous peoples throughout the world. Nakata's detailing of the suppositions behind the Cambridge Expedition helps us understand the attitudes that framed so much of the regulatory policies that continue up to the middle of the twentieth century.

It is taken as a given, particularly from within the 'disciplines', that between the condescending evolutionist ideas of the nineteenth century and today's practices there lies a fundamental conceptual discontinuity. Difference is no longer seen as signifying inequality and thus as something which will disappear when and if 'the primitive' reaches the level of the 'modern'. Now it is seen as indicating a 'separate but equal' identity. One outcome of this ideological shift is the development of regulatory policies that aim to preserve difference. But it is Nakata's point in Part Two of the *Disciplining the Savages*, and in the book overall, that this discontinuity can be over stated. If you step away far enough—and far enough for Nakata is to look from the position of an Islander—you can see some fundamental continuities from the nineteenth century to the present. Nowhere is this more evident than in the approaches to education policy towards Islanders over the past thirty years. The recognition that Islander difference is no indicator of inability has meant a major shift for the better in policy, but the emphasis on difference continues the 'inscribing' of who an Islander is by outsider disciplines. As Nakata puts it: 'We are not content with being subjected as 'Other' to everybody else' (162).

The overemphasis on preserving Islander difference works to deny much of the present reality of Islander existence and restricts Islander ambition and hopes. It is not that Nakata does not believe in the importance of Islander identity—he most adamantly does—but he argues that what must be recognized in that identity is that present social relations and life views of Islanders have changed

in response to over a hundred years of colonization and as a result of choices made by Islanders themselves in response to these irrevocable intrusions. Change has not simply come from above, from administrators, churches and commercial interests.

Two areas in education become pertinent sites for Nakata's exposition of these problems. One is the issue of language: In which language do you teach? and how do you teach language? Nakata dismisses the easy dichotomy between 'oral' and 'literate': 'Little is made of the fact that locating students within 'oral tradition' narrows down their presence in history to 'something' that is 'not' part of the literate traditions, and as separate and apart from the complex world of negotiating colliding historical trajectories over the past two hundred years' (172). The dichotomy repeats the all too easy separation of 'traditional' from 'modern': 'The oral and literate world are not separate but entwined ... and continue to evolve as traditions and artefacts of our engagements with each other; we all continue to live in times where there are oral traditions'. Teaching in Islander languages rightly preserves those languages, but Islanders want from education, and have wanted so for two hundred years, a means of negotiating with the 'white world' that continues to control so much of their lives. Learning English becomes not a denial of Islander-ness but a potent tool. This is a predicament not easily resolved. Nakata proposes no easy solution to the problem but argues for an approach that recognizes the complexities and reality of the situation.

The other concept that Nakata contends is that of 'culture'. Culture is the corner stone of the equal but different paradigm. Preserving culture has become a major function in much policy towards indigenous peoples. In these policies, what needs to be stemmed more than anything is the erosion' of culture. But, as Nakata puts it, erosion 'is a metaphor that begins from the perception of culture as a foundational and potentially static entity' which 'covers over the notion of culture as constantly changing' (179). The emphasis on culture draws activity away from confronting both political and educational realities: 'the recognition of 'difference' can amount to a resignation to 'difference' and thus:

As a disciplinary concept, culture has become a mode to identify with a position to assert rights, a guide to develop a future; and yet to conform with the cultural identity as an apolitical, ahistorical, docile subject of the past, the Islanders give up their standpoint on the material realities confronting their own situation. This is because culture constitutes simultaneously the premise where the Islanders can be disciplined, divided and marginalized. (180)

It is in this discussion of culture that the purpose of Nakata's concentration of the Cambridge Expedition becomes evident. Much present day policy still springs from the theories of Western disciplines rather than from the lived experience

of the Islanders. By placing at the beginning of this work a detailed expose over that expedition Nakata prepares us to recognize the continuities that mark the influence of the disciplines: 'Islanders have not essentially changed from inferior beings to equals, or from savages to culturally different people; the thinking around them has constituted them to cohere with the evolution of changes in a Western order of things' (196).

What Nakata proposes—and this takes up the third part of his book—is a theoretical framework which can 'take more account of Islander experience' and of the complex terrain of experiencing the various Western and indigenous 'knowledges'. He proposes a recognition that Islanders live in a 'Cultural Interface' where not only West meets Islander but that Islanders themselves can represent a great variety of experience and understandings. Nakata then further suggests a working towards an 'Islander Standpoint Theory' based on the Feminist Standpoint Theory proposed by Sandra Harding in the 1990s, which he hopes 'can help unravel and untangle ourselves from the conditions that delimit who, what or how we can or can't be, to help see ourselves with some charge of the everyday, and to help understand our varied responses to the colonial world' (217).

Nakata's book is of first importance in the current debate over policies towards indigenous education. It is a product of the cultural interface that Nakata describes and is an important contribution from a scholar and activist who is eminently qualified. Personally, I still came away with a sense that the material on the Cambridge Expedition, valuable as a reflection on the history of anthropology, could have been truncated in this context without losing its value. On the other hand, the issues raised in the second and third parts of the book could have been much expanded and a more direct line drawn between the disciplinary premises of then and now. Nakata importantly recognises how problematic the concept of culture is and the importance of understanding indigenous experience as more of a question of deprivation of political power than of cultural erosion. It would have been good if there had been space for Nakata to include more recent concepts (rather than a call to the worn and very Western ideas of Michel Foucault). Kwame Anthony Appiah's *Cosmopolitanism: Ethics in a World of Strangers* (2006), for instance, takes some of the points Nakata raises beyond the Western/Indigenous binary. Nevertheless, this is a book that all interested in the issues of culture and education should read.

In the last paragraph of the book, Nakata writes that we live in 'a world premised on difference'. Surely it is this premise that needs to be challenged. Is it not a premise that itself grows from the 'Western' disciplines, particularly anthropology? This is not to deny difference, nor to wish for a more homogenized world. But it is to challenge the idea that difference is the fundamental concept mediating our encounters with one another. As long as we make difference our

existential foundation, and not our shared humanity, we create walls not interfaces.

*Robert Kenny is ARC Research Fellow in the History Program, La Trobe University. His *The Lamb Enters the Dreaming: Nathanael Pepper and the Ruptured World* won the AHA Hancock Prize and the Victorian Premier's Award for History. His current research focuses on psychoanalysis, anthropology and the Pacific.*

Performing Country

Landscapes of Indigenous Performance: Music, Song and Dance of the Torres Strait and Arnhem Land

Edited by Fiona Magowan & Karl Neuenfeldt

Aboriginal Studies Press, 171pp, \$39.95, 2007

ISBN 978-0-85575-4-938

Reviewed by Samantha Faulkner

First published in 2005, *Landscapes of Indigenous Performance* is an eclectic mix of chapters on Northern Australia's Indigenous music, song and dance. Both Indigenous and non-Indigenous writers have been included. The contributors are mostly academics who have worked and studied in their respective fields.

The editors Fiona Magowan and Karl Neuenfeldt are well known in relation to the Yolngu and Torres Strait circles. Magowan is a lecturer in Anthropology at Queens University Belfast and continues to research Yolngu music and dance in northeast Arnhem Land. Neuenfeldt is Associate Professor in Contemporary Communication at Central Queensland University. He is active as a music researcher, musician and producer. Karl is probably best known for his work with Henry 'Seaman' Dan, a Torres Strait Islander jazz and blues performer.

The book consists of nine chapters which, overall, give equal weight to Torres Strait and Arnhem Land material. The chapters on the Torres Strait focus on a variety of cultural themes and practices, including the popular nursery song, *Taba Naba*; the music of the Torres Strait; Mabo, music and culture; and the development of the musical culture of Thursday Island from 1900-45.

Torres Strait Chapters

The first chapter, *From Navajo to Taba Naba: Unravelling the Travels and Metamorphosis of a Popular Torres Strait Islander Song*, is interesting and controversial. Here, Nakata and Neuenfeldt chart how a 1903 song from the United States of America may have evolved into the Torres Strait song *Taba Naba*.

This is followed by a contribution from Eddie Koiki Mabo on the *Music of the Torres Strait*. The Mabo family assisted with the chapter, drawn from an article in *Black Voices*, 1984. This adds a personal touch and encourages a stronger feeling of intimacy between the reader, the man and the music.

In chapter four, 'Mabo, Music and Culture', Noel Loos provides a background to Eddie Koiki Mabo's life and examines how music was important to Mabo,

both in a cultural sense and in terms of the role it played in his personal life. This is a lovely, written tribute and flows neatly from the preceding chapter.

Steve Mullins and Neuenfeldt's 'Grand Concerts, Anzac Days and Evening Entertainments' takes the reader on a journey to the music culture on Thursday Island from 1900-45. This is an informative and well written piece and the research is extensive. The photos of past ancestors and the unearthing of familiar names, in this chapter, prompted some reminiscing on my mother's part. This chapter also plays on the reader's emotion, especially when it references how Islanders spontaneously sang the 'Old T I' song when World War Two boats departed and returned with evacuees. 'Music helped mark their return just as it had helped mark their departure' (115-16).

Arnhem Land Chapters

The Arnhem Land chapters focus on several different themes: an ethnography of Yolngu musical performance in mainstream contexts; an exploration of Yolngu motion, ritual and cosmology in the Yirrkala Film Project; a Rally at Ramingining; the importance of opening up spaces for performing, teaching and learning Aboriginal performance traditions; and the interplay between metrical and real time in a Central Arnhem Land clan song series.

Chapter Two, titled 'Home among the Gum Trees', looks at the community of Gapuwiyak when in 1996 the community education centre won the *Burke's Backyard* competition for the program's theme song. Peter Toner refers to the writings of Mikhail Bakhtin to identify and better understand two dialogues: one amongst Yolngu performers and the other between Yolngu performers and a non-Yolngu audience.

With 'Dancing into Film', Fiona Magowan takes us to view films as 'a landscape where the numinous is in a continual dialectic with the phenomenal, as movement is both visible and invisible – seen in spatial patterns and body movements and concealed in song texts, rhythms and musical dynamics, each shaping the spiritual force of ritual' (58). She examines two films, *In memory of Mawalan* and *Djungguwan Ceremony at Gurka'wuy*.

Chapter Six, 'A Rally at Raminging' is an interesting and rarely considered area of Christianity in an Aboriginal community. Here, Ingrid Slotte describes a Rally held over a weekend in November 1990, and the preparations prior to, and during the Rally. It is both sensitive and touching in parts and it shows how the broader Aboriginal community adapted elements from English worship into its own spiritual belief system. However, each Aboriginal community—through their own dialect, language and dance interpretations—would place their own distinctive signature on their celebration.

Elizabeth Mackinlay, in 'Making the Journey In', looks at how elders from the Yanyuwa community in Borroloola incorporate their performance and knowledge

into the University of Queensland Indigenous studies. The way in which Mackinlay establishes her position with the reader is pivotal to her unfolding narrative and poses questions on power relations, risks and ethics. She also considers the relationship of cross-cultural engagement.

In 'Musical Times', Greg Anderson analyses a Central Arnhem Land clan song series called Murlarra. He examines nine musical types as well as their clapstick patterns, and the distribution of patterns, metres, tempos and metricality.

Landscapes of Indigenous Performance contributes to the current knowledge of Aboriginal and Torres Strait Islander arts, culture and history. It is both accessible and scholarly and it brings together new information on Torres Strait and northern-Australian Aboriginal performance. There is something for everyone in the book. It is a timely, interesting and informative publication.

Samantha Faulkner is the Academic Coordinator, Jabal Indigenous Higher Education Centre, Australian National University. She has written a biography on her grandfather's life, Life Blong Ali Drummond: A Life in the Torres Strait. Her current research interest is Torres Strait Literature.

The Senses and the Sense of Place

Making Sense of Place: Exploring Concepts and Expressions of Place through Different Senses and Lenses

Edited by Frank Vanclay, Matthew Higgins and Adam Blackshaw

National Museum of Australia Press, 2008, \$29.95, 340pp

ISBN 978-1-87694-451-3

Reviewed by George Main

Making Sense of Place is an edited collection of papers presented at the 'Senses of Place' conference held in April 2006 at Hobart. The conference organisers took the familiar term 'sense of place' as its central theme, and aimed to extend its scope. As the book's editors explain:

The conference, with its by-line of 'exploring concepts and expressions of place through different senses and lenses', sought to expand understandings of place by broadening the basis on which it is usually considered. A sense of place can be in the form of a cognitive consciousness (or intellectual abstraction), but full appreciation of the meaning of place can only be experienced through the senses—the smell, taste, feel, sound, sight and spiritual dimensions of place that we experience, whether we are aware of them or not. (vi)

Human centred processes by which places are encountered, imagined and represented are the focus of attention in this book. Chapters are arranged into four parts: 'Narratives on the experience of place', 'Understanding Indigenous senses of place', 'Making Places' and 'Analysing and utilising the sense of place'. Supplied with the book is a short DVD presentation of conference participants talking about their own relationships with places. *Making Sense of Place* is richly illustrated, enabling a better sense of the places under discussion.

Interpretations of the central theme vary widely. In his chapter 'Places of silence', historian and geographer Mike Gulliver considers the history of those 'deaf places of silence' known only to deaf people. He tells an extraordinary story of a vigorous deaf community in the late nineteenth century struggling for survival against the efforts of 'oralists' to eradicate sign language. Other chapters explore various patterns of human engagement with places in Australia and elsewhere. Greg Lehman, a descendent of the Trawulwuy people of northeast Tasmania, reflects on the practice of welcoming outsiders to country. Lehman locates the practice in its local historical context, and calls for critical reflection on the meaning and purpose of this tradition, its potential to acknowledge local histories of colonial invasion and Aboriginal death. Writer Merrill Findlay, in

correspondence with the book's aim to foreground cultural processes, writes of the power of storytelling to reshape places and lives:

No continent can be invaded, no massacre committed, no abuse perpetrated, no people subjugated, vilified or discriminated against, no land degraded, no wetlands drained, no climate changed, no species made extinct and no creeks or rivers despoiled by humans—unless stories make it so. The reverse is also true: people can be empowered, abuse ameliorated, wrongs righted, pain acknowledged, differences reconciled, land returned to its traditional owners, ecosystems restored and endangered species allowed to flourish—but first we need the stories to unleash these possibilities. (19)

Despite the intention of conference organisers and the book's editors to focus attention on the embodied and intellectual processes of human engagement with place, common threads are somewhat difficult to detect. The variety of perspectives and place related topics may be intentional. In the introductory chapter, Frank Vanclay explains that he and fellow editors made a selection from the many conference presentations that gave 'a broad base by which to understand the concepts of place and sense of place'. I wonder whether the chosen topic for the conference and book may have undermined possibilities for coherence. The term 'sense of place' is perhaps too loose and general a concept to meaningfully gather thought and discussion. Most chapters are, nevertheless, individually engaging and rewarding.

From the perspective of the ecological humanities, wherein connectivities between humanity and an active, expressive nature are often of prime interest, the framing of this book in terms of 'sense of place' and its making by humans is problematic. All places are defined by individual histories and lively particularities. Every place has a unique character. To speak of a 'sense of place' seems to honour not place, but the sensing human who has taken time to notice a place. Such a human centred approach is evident in the DVD presentation supplied inside the back cover of *Making Sense of Place*. In this artful and engaging production, individual conference participants talk mostly in abstract terms of their engagement with places. Names of places are not spoken, their located particularities obscured. Script floats across the screen: 'a showground', 'a forest', 'a bush shack'. To corral our concerns within human minds and bodies, to maintain an established cultural attitude of a pronounced opposition between people and the rest of nature, is a dangerous stance, argue scholars in the ecological humanities. At a time of global ecological crisis, when we need urgently to attend to the wellbeing of places and their living communities, we should take care not to reinforce habits of division.

Scope for escaping human centredness and for turning towards the particularities inherent in the rest of nature is emphasised by some of the authors in *Making*

Sense of Place. 'The land is always singing' observes sound artist and composer Ros Bandt. 'The wind is alive with the spirits of the dead, and the plants and animals are in constant communication with us about both our lives and theirs' writes Trawulwuy descendant Greg Lehman. Anthropologist and bi-lingual interpreter Diana James describes a profound transformation in her 'ontological sense of place' on hearing a song of the Ngintaka, the perentie lizard, inside a rock shelter on Anangu lands. Diana offers hope that humanity can indeed imagine and embed itself, responsibly and responsively, within dynamic patterns of history, life and place:

I am connected to the perentie lizard man, to the land he formed, to the generations of people who hold, tell, sing and dance that story. The land is singing and I am a note in the chorus of that song. (118)

George Main is author of Heartland: The Regeneration of Rural Place (UNSW, 2005), and works as a curator at the National Museum of Australia, Canberra.

The New Politics of Water

Fresh Water: New Perspectives on Water in Australia

Edited by Emily Potter, Alison Mackinnon, Stephen McKenzie and Jennifer McKay

Melbourne University Press, 221pp, \$49.95, 2007

ISBN 978-0-522-85424-4

Reviewed by Emily O’Gorman

The editors and authors of *Fresh Water: New Perspectives on Water in Australia* write straight into one of the most discussed and contentious issues of our time: fresh water. The book is an edited collection of eighteen essays, by twenty-seven authors from around Australia. The authors write from professions and perspectives ranging across the visual arts, academia, Indigenous First Nation organisations, and government natural resource management. The book’s origins lie in a two-day workshop held in Adelaide, supported by the Hawke Research Institute at the University of Adelaide, the Academy of the Social Sciences, and the Academy of the Humanities. The workshop’s focus on ‘water justice’ translates to the essays in the collection, which illuminate issues over ‘fresh water’ (mostly surface river water), with concerns for current, past, and future social and environmental (in)justice in Australia.

Fresh Water attempts to create interdisciplinary conversations about water in Australia by bringing together such diverse perspectives. Underpinning the diversity of views is a bass chord that resonates with each essay. In introducing the collection Emily Potter and Stephen McKenzie highlight the deeper connection between the chapters: ‘At the heart of the book is the relationship between humans and water: the tensions born of an intimacy predicated on our physical needs and a Western cultural history of environmental exploitation’ (3).

The strength of this volume is that the authors do not shy from the big issues, the political and social entanglements of water in riverine communities, injustice in access to water, and the need for change in government policy and non-indigenous conceptions of water more generally. Deborah Bird Rose (whose chapter ‘Justice and longing’ begins the book) calls for a ‘new ethos’ of water that is ‘cross-cultural and inclusive’. Rose argues that we need to live for water, ‘not just make a living *from* it’ (original italics. 8). Drawing on her experiences working with Aboriginal communities on land claims from 1982 to 2006, Rose explores Indigenous connections with water, and what they reveal about western water values, as articulated in science, legislation, and everyday imaginings of water in Australia. Ecologists, such as those who worked to prevent irrigation dams being built upstream from Cooper’s Creek, recognised the need to conserve

'ecological connectivity' in management practices. However, Rose argues that the idea that water needs to be 'managed', in essence conceptualises water as a utility. Such conceptions conceal the connections of water to all life and land (13-15). Instead, connections to water need to exist in a 'new ethos' which recognises 'that all living things are manifestations of water', including humans, and that debt needs to be honoured. Rose describes a ceremony at a site named Therreyererte in Central Australia, where Aboriginal women danced a song-line of Rain Dreaming. 'They are dancing life and they are dancing water, and it is all one dance. This is the basis of a living water ethos: the dance of life and the dance of water is the same dance' (18).

While Rose takes to hand this larger need for change in non-Indigenous Australians' understandings of water, many of the 'middle' chapters of the book deal with close case-studies of particular community engagements with rivers and the conflicts that arise over rights and access to water. Geographically, the chapters cluster around the rivers of eastern Australia, particularly the Murray-Darling Basin. More particularly still, many of the essays explore changing (while enduring) connections of Indigenous groups with the Murray River, with an emphasis on South Australia and the Ngarrindjeri people (perhaps reflecting the location of the workshop in Adelaide).

One such chapter is 'Reconciliation? Culture, Nature and the Murray River', written collaboratively by Robert Hattam, Daryle Rigney, and Steve Hemming. These authors powerfully describe the Ngarrindjeri people's historical and current struggle for water (and political, legal, and social) justice in a government framework that does not recognize their valuing of Ngarrindjeri Ruwe (country—land and water). The arguments in this chapter echo Rose's by drawing attention to different values of water between Indigenous and non-Indigenous Australians, where management frameworks reduce water to a utility. Water policies tend to write the Ngarrindjeri people (and other Indigenous groups) into the past. They are often barely included in management decisions and remain with limited rights to water. By relegating Indigenous peoples' connections to the environment to the past, the authors argue that management discourse, 'remains silent [about current Indigenous values and claims] and thereby excludes their intellectual, economic and political interests' (115-16). Although, 'Indigenous people have never ceded sovereignty of their land', the Ngarrindjeri nation has had to 'build relationships with governments, bureaucracies, interest groups and local non-Indigenous communities' in order to achieve a legal and political platform in water rights, and other natural resource debates and agendas (107 and 116). The chapter ends with the argument that, '[r]econciliation will only happen if and when non-Indigenous people begin to see their country in plural terms and as a regime of respect and toleration rather than one of assimilation, domination and control' (117).

Fresh Water also includes chapters that analyse non-Indigenous environmental values. Helen Cheney, Natalina Nheu, and Lorien Vecellio's chapter looks at community groups' attitudes towards the possible removal of four weirs by the government to increase environmental flows in the Hawkesbury-Nepean watershed. The authors present the results of social surveys and research, describing the conflicting views within the community and between the community and government. Their study emphasises the need for ongoing communication between those who live with the rivers (including irrigators, other industry water users, local residents, several Indigenous groups, and community groups) and government decision makers.

The authors place their study within an historical framework, locating some of their respondents' answers in a colonial context. The weirs were originally planned in the late nineteenth century to ensure the equitable distribution of water. The authors note that, '[a]t the time of their building these colonial structures represented water justice and, as we shall see, their legacy lives on' (190). Expectations of consistent river flows have continued, but more interestingly what comes out of the surveys is an attachment by some groups to the weirs themselves as structures. The weirs were also valued by many as a recreational space and for the fishing opportunities they created. They were also seen to be important to the health of rivers by providing a steady source of water to animals, fish, and vegetation. Further, the weirs supplied water to an irrigation industry that contributes to the local economy. Most wanted the weirs to stay, however some groups supported their removal. For example, one 'group in favour of environmental flows felt that the weirs were "not appropriate for this river system"' (197). The chapter presents some of the tensions with governments and within the community at a time of imminent local environmental change and in the midst of national and global environmental uncertainty.

Other chapters take readers to Western Australia, and stakeholder conflict over surface and ground water in Gingin shire, north of Perth; along the 'long community' of the Murray (Kay Lawrence and Nici Cumpston, 'A Story is Like a River: Weaving the Murray', 240); into the National Archives of Australia; to Federation Square in Melbourne; and briefly to New Orleans in the aftermath of Hurricane Katrina.

In the conclusion Alison MacKinnon and Jennifer McKay reflect on the fact that the authors 'spoke in different languages'; different professions and disciplines used different language and terminology. But amongst the semantics, authors 'agreed that certain key issues need to change' (273). There is a positive side to the language fissures: it is that the guts of some issues raised in one chapter, are taken up in others in a meaningful way. The authors have tried to understand each other. MacKinnon and McKay conclude that talking and listening across disciplines, cultures, communities, and bureaucracies is not an option, it is a

necessity. They also argue that it is important to consider 'water itself as a stakeholder' (274). This is a good point and aims to propose ways we might value ecologies in management frameworks (similar to current allocations of 'environmental flows'). However, the stronger point could be made that the idea of the environment or water as a 'stakeholder' is itself a problematic concept that perpetuates a management framework and discourse that Rose and Indigenous people have argued against. Instead, water (and environments generally) is (are) the basis upon which other interests are built and on which they depend. If issues of water justice in Australia are going to have a chance at equitable resolution, it is crucial that we try to see different perspectives than our own and consider our environments, to use Hattam, Rigney, and Hemming's term, as 'plural'. It is also important to consider the multiplicity of both human and non-human voices. By presenting different perspectives, *Fresh Water* is a positive example of its own arguments. The difference in the authors' language perhaps also points to another step towards water justice: the need to find a common language through which people can communicate across a range of disciplines, professions, and cultures.

Fresh Water is topical and largely addresses issues of water and water-justice head-on. It offers insights into a diversity of issues that confront Australia's river communities and the nation as a whole. In an era of environmental uncertainty, *Fresh Water* is all the more valuable.

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Chockers with Deadly Lingo

Stunned Mullets and Two-pot Screammers: A Dictionary of Australian Colloquialisms (Fifth Edition)

By G.A. Wilkes

Oxford University Press, 422pp, \$45, 2008.

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Reviewed by Ed Wright

Teaching a course on Australian popular culture this semester, with a section on archetypes such as the digger, the battler and the fair-go, has forced me to wonder what being an Australian actually means. While many of the values enshrined in these archetypes continue to resonate with me, it's nonetheless impossible to go past the fact that as an Anglo-Celtic male with five or six generations of settlement under his belt, these values are not just theoretical, but are part of my individual psychological make-up; transmitted not just through the study of Australian history at school, but also via the oral folklore of my specific family history. For my students, however, as for Australians in general, this is increasingly not the case. As I have taught the course, I have asked myself what is something all Australians share. We all inhabit the same geographical entity, of course, but other than that the only thing perhaps that truly identifies us as distinct from other nationalities is our language, the vernacular that makes our version of English unique.

Of course the state of the vernacular is in constant flux and in a world where someone is just as likely to call you 'dude' as 'mate,' it would be a mistake to impose some kind of nationalistic hankering over a slang that is absorbing new ways of saying things everyday. At the same time, it's hard to avoid the sense that the immense collective creativity of Australian colloquial language is an undervalued national asset.

The fifth edition of *Stunned Mullets and Two-pot Screammers*, Professor G.A. Wilkes's Dictionary of Australian Colloquialisms, is an excellent reminder of the riches to be found in Australian English. For a relatively slim volume (at least as far as dictionaries are concerned) it proves extremely comprehensive and along with the *Macquarie Dictionary of Australian Slang* is the best bet for those in need of a dictionary of this kind.

In his introduction, Wilkes notes that the first edition came out in 1978 and was the culmination of ten years' work. The fifth edition, therefore, is the product of four decades of work. The span of this constructive effort is patently clear. To begin with, the dictionary has a wonderful spread of colloquialisms, both

current and obsolete and from all walks of Australian life. The browser will learn that poddy-dodging is a kind of cattle rustling, that noodling consists of fossicking in the rubble of old claims for opals, that poached eggs and silent cops are the raised round metal disks (often painted yellow) that are sometimes used at corners to divide the sides of the road. While it was interesting to learn that the word 'bludger' originally referred to a pimp, it was more surprising to discover that a little Aussie 'battler', aside from its iconic meaning, could once have been used to describe a small homegrown prostitute. For those fascinated by the almost infinite variety of the scatological, there are few places where you can learn that bronza, bracket, freckle, clacker, blurter and crack (though 'chuffer' is lacking) refer to the same part of the human anatomy, or that a Gosford is a mid-thigh mini-skirt, so named because of its NSW central coast proximity to The Entrance.

It's unsurprising that much of the stuff here is crude: crudity and creativity are far from mutually exclusive. It's also interesting that in a culture known for its dry understatement and the tall poppy syndrome, colloquial language has been one place where excess and creativity have flourished. A phrase such as 'ugly as a hatful of arseholes', when you visualise it is simply surreal, as is 'sparrows flying out your backside' to describe the male orgasm, or a 'long streak of pelican shit' as a way of describing someone very tall. These are just some of the joys to be discovered in Professor Wilkes's dictionary.

Perhaps the most impressive thing about *Stunned Mullets* is the examples of usage that come with each entry. Each of these shows the date of the quote and who said or wrote it. For 'done like a dinner', for instance, there are six instances of usage quoted, beginning with the mid-nineteenth century, and finishing with a Greg Combet quote in 2002. These historical principles help give shape to the evolution of a colloquialism's meaning. The only drawback perhaps is that there is less actual explanation of how these terms came into being. This is a dictionary that tends to take the Common Law approach to language where meaning is inferred by usage, but unlike the Oxford for instance, the point at which a term has entered the language is not always provided.

Wilkes has taken his examples from an awesome array of sources. They are drawn mainly from literature and the press, those media in which the vernacular is preserved. Within these constraints the sourcing is wonderfully diverse: Patrick White, letters of colonial times, or tomes such as Patsy Adam Smith's 1969 *Folklore of the Australian Railwaymen*. Wilkes shows a predilection for Australian crime fiction, a genre which in turn has long been a champion of the colloquial. Peter Corris, Shane Moloney and Garry Disher are just some who are cited with regularity. Other authors notable by the frequency of their appearance in these pages are those who have chronicled the lives of the nation's underclasses

such as Kylie Tennant and Frank Hardy. While *Stunned Mullets* provides a history of colloquial usage, it's also a de facto history of Australian publication.

Although Wilkes was a long-standing university Literature Professor, the sources for *Stunned Mullets* go far beyond this with phrasal geniuses such as Rex Mossop and Barry Humphries featuring. In his introduction, Wilkes mentions the legions of people who have provided material for the dictionary, including his local butcher. Politicians also get a good run: John Howard has left us with the 'barbecue stopper' and his self-description as a 'cricket tragic', while Mark Latham, a politician who imploded, is nonetheless immortalized here for memorable utterances as 'a conga line of suckholes'. Paul Keating and Gough Whitlam are others who have added to our colloquial language in ways that are unlikely to be equalled by Kevin Rudd.

There are a number of other dictionaries of Australian slang and colloquialisms, all with their merits. But for reference or for the simple pleasure of browsing, *Stunned Mullets*, with its comprehensiveness and wonderful history of usage, is very close to being a national treasure.

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