The Humanities and an Environmentally Sustainable Australia

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Address to DEST Conference on
The Contribution of the Social Sciences and Humanities to National Research Priorities
Canberra, 28 March 2003

This is a critical and exciting time in environmental scholarship. It is not only because of an accelerating sense of global environmental crisis; it is also because we inhabit a promising moment in the evolution of disciplinary knowledge. Sciences and the humanities – so often separated in our training and thinking - are now turning towards one another with a grateful and urgent sense of opportunity and collaboration.

The rapprochement of science and the humanities

Why is such a fundamental scholarly re-orientation under way in environmental research? Over the past century, three intellectual revolutions have challenged an earlier, enduring conviction that nature and culture could be separated. One is that humans are elemental and animal: we are evolutionary beings made mostly of water and related viscerally and chemically to the whole natural history of the universe. Family history – across deep time – becomes natural history. The Darwinian revolution, which is still unfolding, revealed that culture is embedded in nature.

Another intellectual revolution is that in the second half of the twentieth century we discovered that nature is more changeable and dynamic than we have acknowledged, and more deeply influenced by human history than we knew. If history is evolutionary, then nature is also historical. The old idea of 'the balance of nature', of ecological equilibrium, has been discarded. 'Disturbance' is now found to be endemic in natural systems; it is not rare and external but essential and structural. So, for example, it is climate and not just weather that is changeable. And a landscape without humans no longer appears the norm.[1]

The third stream of new thinking about culture and nature emanates from physics. In the twentieth century, Einstein's theory of relativity famously destabilised Newton's clockwork universe. Mathematician and humanist, Jacob Bronowski, described the new scientific view like this: 'The world is not a fixed, solid array of objects, out there, for it cannot be fully separated from our perception of it. It shifts under our gaze, it interacts with us, and the knowledge that it yields has to be interpreted by us. There is no way of exchanging information that does not demand an act of judgment.'[2] In such a universe, nature can no longer be characterised as inanimate matter governed by external forces reducible to mathematical laws. Instead, nature seems holistic rather than reductive, creative rather than predictable. There are no atomic facts, and there *is* mystery. Being is inescapably relational, and knowledge is always partial, always contingent, always historical.[3]

The result of these three intellectual revolutions – that humans are animal, that nature is historical, and that the universe is mysterious – is that the relationship between culture and nature is now high on the western scholarly agenda. Scientists have again ventured into the traditional domain of humanists, offering exhilarating histories of the earth, long-term evolutionary sagas, and narratives of humans as a species.[4] And humanities scholars are being welcomed by natural scientists for their distinctive skills in analysing holism and complexity.

Three techniques of humanities research

Let me remind you of just three of those valued techniques of humanities research.

Scales of time and space

Environmental scientists often move between two timescales. One is a sense of history that goes back only five years, and the other is a sense of geological and evolutionary time that spans millions of years. The time scales in-between – those that represent a human lifetime or the centuries that characterise a society and its land-use practices – are the expertise of the humanities scholar. Century-scale environmental changes are now a vital area of Australian research as the latest issue of the *Australian Journal of Botany* shows.

Also, science can remarkably bring into focus the very distant and the microscopic, but is less expert at analysing the coherence of human-scale geographies. The humanities are constantly refining the tools of analysis for these middle-level environmental dimensions.

Storytelling

Story is sometimes underestimated as something that is easy and instinctive. But story is actually a piece of disciplined magic, of highly refined science. It is the most powerful educational tool we possess; it is learning distilled in a common language. It is also a privileged carrier of truth, a way of allowing for multiplicity and complexity at the same time as guaranteeing memorability. Story creates an atmosphere in which truth becomes discernible as a pattern.[5] And so I would argue that narrative is not just a means, it is a method, and a rigorous and demanding one. The conventional scientific method separates causes from one another, it isolates each one and tests them individually in turn. Narrative, by contrast, carries multiple causes along together, it enacts connectivity. We need both methods.

Scholars in the humanities know that stories change the way people act, the way they use available knowledge. The stories we live by determine the future. So, in harnessing the power of narrative, in listening to, rediscovering and generating true stories, we change the world.

Science as subject

The humanities offer a necessary and distinct understanding of research itself. When we cultivate a politics and bureaucracy of research – as we must – we easily adopt dominant scientific metaphors of the advancement of knowledge. Because we have to be seen to strive for constant innovation and visible productivity, we find ourselves talking of research in terms of frontiers, new terrain, virgin ground, the cutting edge, the great unknown, the heroic discovery. We fall into a rhetoric of linear, progressive, cumulative knowledge. But the most valuable knowledge is often synthetic, lateral, profound or reflective; and knowledge can be lost as well as gained. Or it is deeply known but powerless. It takes a true intellectual sense of adventure, a real spirit of criticism, to look beyond or within or away from 'the cutting edge' of conformity.[6] The humanities have a special value to our research culture because they make a subject of science and its ways

of knowing. They represent domains of knowledge that are least in thrall of the scientific method and which therefore foster an essential and healthy critique of it.

So I am here to champion a more organic and historical concept of learning and knowledge. Not only do we have to advance the 'frontier', we also have to remember what we think we already know, and we have to give new meaning to what is forgotten.

Australia's edge in the ecological humanities

Australia has a real competitive edge in the ecological humanities: in the practice of philosophy, art history, eco-criticism and environmental history. It has to do with our New World mentality and predicament, our history as a modern settler society with a long, strong indigenous history, our inheritance of a confrontingly different and unique ecology, our inhabitation of an island continent that is also a nation. Australian history is like a giant experiment in ecological crisis and management, sometimes a horrifying concentration of environmental damage and cultural loss, and sometimes a heartening parable of hope and learning. Ecologists working in Australia today often feel like they are ambulance drivers arriving at the scene of an accident.[7] They want all the help they can get. Such a roller-coaster of environmental history makes us think differently and more sharply than the rest of the world on many ecological matters. On such a continent, we can never blithely assume the dominance of culture over nature, nor can we believe in the infinite resilience of the land. We are committed by history and circumstance to an intellectually innovative environmental enquiry.

Environmental sustainability

I welcome the wording of the research priority of 'An Environmentally Sustainable Australia'. I see it wisely distancing itself from earlier formulations such as 'sustainable development' , a concept which too quickly loses its sense of ecological limits. Here we are concerned with sustaining the environment – and also the Australian society that depends upon it. Our economy is to be measured by the health of the ecosystems and human communities where we live and work. What constitutes environmental sustainability is ultimately a social and political question as much as a scientific one. What qualifies as a resource, and how renewable is it? What is the damage of using it?

Is it economically viable? What will be the social costs? Is habitation sustainable? What lifestyles and technologies will be enabled by using it? What kind of a society do we want?

Moving towards an environmentally sustainable Australia will depend not only on our knowledge of ecosystems and resources but even more on our ability to initiate, advocate and absorb radical shifts in desired lifestyles, values and technology. Indeed, we may already have the knowledge to make such a transition – but are we prepared to act upon it? That is a vital – and neglected – ecological and human question.

For example, we may know in our hearts and our science that renewable energy sources such as sun and wind are the way of the future – indeed, they are the fast escalating present – but it does not stop us from directing the lion's share of Australian energy research funds to 'the two energy technologies least likely to be of importance in the decades to come' – nuclear and coal.[8] So the research funding is trapped within the lines of existing power, in both senses of that word.

Locating ecological problems in the behaviour of humans

We often name ecological problems by their chief biophysical symptom – salinity, soil acidity, land degradation, forest loss – yet each problem actually has its origin in human behaviour. Anthropologist Deborah Rose recently reminded a research forum of our joint academies that 'Major ecological change, much of it in crisis, is situated across the nature/culture divide.'[9] And a distinguished group of American humanists have recently argued that: 'Many, perhaps most, of our most pressing current environmental problems come from systemic socioeconomic and cultural causes and their solutions lie beyond the reach of scientific or technical knowledge.'[10] So we will have to change human attitudes, behaviour, and institutions. There is a growing concentration of humanities research that is working across the nature/culture divide, often in league with science.

Ecologists are again embracing the social dimensions of their studies. We can see it in the research program of CSIRO Sustainable Ecosystems which has increasingly turned its gaze upon those lands most intensively used. We can see it in the movement from single-species studies to whole landscape reconstructions, from vermin to living

landscapes as Denis Saunders has put it.[11] We can see it in the serious, systematic attention scientists are now giving to Indigenous ecological knowledge.

Forests exemplify the impossible boundary between nature and culture. When you study a forest, you are engaging with something that is neither wilderness nor artefact; it is more exciting and intriguing; it is something in-between. In its making and remaking we cannot tell where nature stops and human activity begins. This insight is not just of academic importance. The future management of Victoria's tall mountain ash forests – forests of stunning splendour, rich biodiversity and great economic significance – depends on our understanding of the connections between nature and culture. Current clearfelling regimes in those forests mimic the effects of the great fire of Black Friday 1939 which swept through them and renewed them; they copy what is imagined to be a natural regime by initiating a massive artificial disturbance. But the question is: was Black Friday a natural event, or a cultural one? We are now discovering that clearfelling in those mountain ash forests – as it is currently practised – is not only bad science, but also bad history. And so ecologists and historians are working creatively together to define a more sensitive and sustainable harvesting and conservation regime.[12]

Conclusion: Seasons of knowledge

I will finish with a story about the seasons of knowledge, about how the frontiers of learning are sometimes behind us. The western division of New South Wales is a region acknowledged today as being in the grip of environmental crisis, from salinity, pests, woody weeds, chemical pollution and soil degradation. In the 1860s and 1870s as squatters rapidly and successfully occupied that land, there appeared no physical limit to pastoral occupation. But the final years of the century brought rabbits, drought, overstocking, appalling wind erosion and economic depression.

A Royal Commission to enquire into the crisis of the western lands was established and reported one hundred years ago. It gathered and published thousands of pages of evidence from people on the land. The Commission unearthed a widespread understanding of the destructive effects of pastoralism on the outside country. It is clear that, as early as the late nineteenth century, Australians in positions of power had a sophisticated understanding of the environmental limits of their inland. There was rapid

and early growth in knowledge of the ecology of pastoralism, and of the effects of overstocking. There was some recognition that the cessation of Aboriginal burning had changed vegetation patterns. What happened to that knowledge, and who acted upon it? Did it just vanish into the dry air, evaporate like so many waterholes? As the geographer Michael Quinn has observed, 'Knowing the West was not enough'.[13] Scientists often argue for the need to overcome deficits of knowledge, but rarely ask why we do not act upon what we already know. Most of the constraints working against environmental change are cultural: we have to know ourselves as well as the country.

ENDNOTES

[1] An excellent collection that reflects on the implications of this change (and others) is William Cronon (ed.), *Uncommon Ground: Toward Reinventing Nature*, W W Norton & Co, New York, 1995, especially Cronon's 'Introduction', pp. 23-56.

[2] Jacob Bronowski, *The Ascent of Man*, Futura, London, 1981, p. 229. See also his *Science and Human Values*, Harper & Row, New York, 1965, and *The Origins of Knowledge and Imagination*, Yale University Press, New Haven and London, 1978.

[3] Deborah Rose, 'Connecting with ecological futures', in Malcolm Gillies (ed.), *Position Papers: The National Humanities and Social Sciences Summit*, the Australian Academy of the Humanities and the Academy of the Social Sciences in Australia, Canberra, 2001, pp. 35-38.

[4] For example, see Jared Diamond, *Guns, Germs and Steel*, and Tim Flannery, *The Future Eaters: An ecological history of the Australasian lands and peoples*, Reed, Sydney, 1994, and *The Eternal Frontier: An ecological history of North America and its peoples*, Text, Melbourne, 2001.

[5] Barry Lopez, 'A literature of place', *Heat*, no. 2, 1996.

[6] See Wendell Berry, *Life is a miracle: An essay against modern superstition*, Counterpoint, Washington, D.C., 2001.

[7] Steve Morton (CSIRO Wildlife and Ecology – now CSIRO Sustainable Ecosystems), address to a workshop on 'Environmental History in the National Museum of Australia', jointly sponsored by the Museum and the History Program, Research School of Social Sciences, ANU, 14 April, 1999.

[8] Ian Lowe, 'Sunshine, social factors, solar energy and sustainability', in Tim Sherratt, Tom Griffiths and Libby Robin (eds), *A Change in the Weather: Climate and Culture in Australia*, Halstead Press, Sydney, 2004, forthcoming.

[9] Rose, 'Connecting with ecological futures', p. 35.

[10] Jill Ker Conway, Kenneth Keniston, and Leo Marx, 'The New Environmentalisms', in Conway, Kenniston and Marx (eds), *Earth, Fire, Air and Water: Humanistic Studies of the Environment*, University of Massachusetts Press, Amherst, 1999, pp. 1-29.

[11] Denis Saunders, 'From vermin to landscape ecology: the tale of Carnaby's Cockatoo', in Denis Saunders, David Spratt and Monica van Wensveen (eds), *Perspectives on Wildlife Research: Celebrating 50 years of CSIRO Wildlife and Ecology*, Surrey Beatty & Sons in association with CSIRO Sustainable Ecosystems Canberra, Sydney, 2002, pp. 89-96.

[12] David Lindenmayer, 'Using environmental history and ecological evidence to appraise management regimes in forests', in Stephen Dovers (ed.), *Environmental History and Policy: Still Settling Australia*, Oxford University Press, Melbourne, 2000, pp. 74-96, and Tom Griffiths, *Forests of Ash: An environmental history*, Cambridge University Press, Melbourne, 2001.

[13] Quinn, p. 228. See also Michael Quinn, 'Committed to Conserve: the Western Lands Act, 1901, and the Management of the Public Estate of the Western Division of New South Wales', *Australian*

Geographical Studies, vol. 35, no. 2, July 1997, pp. 183-194, and `Knowing the rangelands of western NSW: The past in the changing present', *Rangelands Journal*, vol. 19, no. 1, 1996, pp. 70-79.