

On the Purpose of a University Education

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The Liberal Arts, the Radical Enlightenment and the War Against Democracy

Arran Gare

Australian universities, even more than British universities, are realisations of the nightmare in store for all universities if they fail to resist the transformation of their institutions into transnational bureaucratic corporations deploying top-down management controls such as 'Business Process Engineering', 'Total Quality Management', 'Benchmarking' and 'Management by Objectives'.¹ In Australia, the liberal arts, which should be seen as including humanistic forms of the human sciences, natural philosophy, theoretical science and mathematics as well as disciplines traditionally identified with the humanities, are being marginalised and even eliminated by this new managerialism. The collapse of academic standards has been documented and carefully studied in the USA, where it has been found that 45% of university students show no intellectual development, and cognitive retardation of children has been documented most fully in Britain, where a study in 2006 showed that eleven and twelve year olds were three years behind children only fifteen years earlier, but how such intellectual stunting is achieved and the reasons for policies that have this effect are more easily studied in Australia.² Bill Readings argued in the 1990s that universities throughout the world, having been reduced to transnational business corporations, are in ruins.³ The Australian example brings home the full significance of this.

The severity of the attack on the liberal arts has made it imperative for its defenders to clarify the goals of education, to understand the history of education and to show what function the liberal arts originally served. In

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fact, it has become apparent that the crucial struggle to defend the liberal arts, the struggle on which all other defensive actions depend, is to achieve this historical perspective. And in Australia this is turning out to be the most difficult struggle of all. The trivialisation and destruction of the humanities and their allies in the social and natural sciences involves the destruction and devaluation of the historical and philosophical knowledge and the forms of cognition through which the significance of this destruction could be understood. As the bright lights of civilisation blink out, there is no light to illuminate why. Fighting against this enveloping darkness has confirmed Sheldon Wolin's thesis that we live in a regime of inverted totalitarianism.⁴ While government policies have been central to the transformation of universities, their policies could not have succeeded so completely without support coming from the lowest levels of society, including support from within universities. Oppression works from the bottom up and works not by mobilising people to heroic effort, as with Bolshevism and Nazism, but by rendering them intellectually, culturally and politically inert.

To begin with, the managers within universities have been empowered and richly rewarded for carrying out government policies by transforming universities into transnational businesses and marginalising the liberal arts; but this is only the beginning. More broadly, the institutions where people with a liberal arts education gained employment have been transformed, beginning with universities, where employment in teaching has largely been casualised and job security has been eliminated. The political realm, including the major political parties, has been colonised and largely taken over by social-climbing 'apparatchiks'.⁵ There is, as Konstantinos Tsoukalas termed it, 'a growing structural corruption of political personnel'.⁶ These apparatchiks have undermined the civil service by imposing the new public management philosophy, eliminating job security, outsourcing wherever possible and replacing broadly educated civil servants whose positions were gained through strict selection procedures, by political appointees with economics or business degrees committed to augmenting the profitability of business corporations. Teaching in schools has been de-professionalised, standards have dropped, with education now seen as training people for work, and, through the penetration of the school curriculum by corporations,

inculcating love of the market.⁷ News media have been transformed from core institutions of civil society essential to democracy which employed people with BA degrees as investigative journalists, into industries for controlling people's minds, employing people with journalism degrees.⁸ Augmentation of profits and the conditions for profit maximisation of the corporate sector have replaced commitment to truth as the defining goal of journalism. To prevent this control being undermined the government-controlled media have been neutered.⁹ The 'arts' have been redefined as part of the entertainment industry and, as such, can be eliminated if they are internationally uncompetitive. More worrying still, many academics have found it expedient to further their own careers—in an environment of job insecurity and in which academics are outnumbered by managers and administrators¹⁰—to undermine and silence their colleagues who are attempting to uphold the liberal arts. In Australia, their power to do this was vastly strengthened when the National Tertiary Education Union accepted the effective elimination of tenure for academics and increased discretionary powers of management to eliminate disciplines and allocate the conditions of work for academics.

This revolution has been achieved by transforming language. Freedom is no longer seen as the empowerment of people to govern themselves, and has been redefined as freedom to shop, entailing freedom to choose what to buy and what to sell.¹¹ Any cultural phenomenon that is not instrumental knowledge relevant to increasing profits is now regarded as purely a matter of private consumption. This has opened another realm of freedom, the freedom to have one's own opinions without these being challenged by elitists who claim superior knowledge. This freedom is vigorously defended by those in the mind control industry and their spokespersons, the newspaper columnists supported by the media moguls. One Australian academic described the logic of their position:

- 1) 'The people' already know everything there is to know: 'life taught them'.
- 2) Consequently, anything that the 'intellectual elite' says which is not known by the people is superfluous knowledge; if not actively against the people.
- 3) Therefore, any attack on the knowledge of the intellectual elite is a defence of the knowledge of the people.¹²

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What this means is that even if defenders of the liberal arts attempt to defend their ideals of education, whatever they say or write will have been pre-defined as an attack on 'the people.' 'The people' themselves, along with those who claim to represent them, now censor the discourse through which the liberal arts could be defended. We are fast approaching the state of culture portrayed in the film *Idiocracy*, in which anyone who attempts to talk intelligently is chased away for 'talking faggy'.

Defending the liberal arts in Australia

While it is difficult in Australia to get an audience for defences of the liberal arts, historical work can reveal what role the liberal arts were playing, and why the assault on them in Australia is so significant.¹³ Australia federated and became a nation during a renaissance in the quest for democracy. At the forefront of this quest were the British Idealists inspired by T.H. Green (1836–1882), a philosophical movement building on German philosophy, and beyond that, on the entire heritage of European thought from the Greeks onwards.¹⁴ Committed to subordinating the market to democratically organised communities, ending imperialism and extending the franchise to working people and to women, they also were at the forefront of promoting education. As David Boucher noted in his introduction to an anthology of British Idealist writings, 'the Idealists...explicitly and fervently linked democratic reforms with the need for reforms in education...advocating that at all levels access to knowledge was a concomitant on the extension of democracy'.¹⁵

The leading figures who led Australia to nationhood, most importantly among these, Alfred Deakin, were inspired by the British Idealists to make Australia an experiment in the most advanced ideas on democracy.¹⁶ Democracy meant for Deakin that the people themselves were the governors of society. Civil servants were responsible to parliament, and parliamentarians were responsible to the people. Walter Murdoch, an exponent of British Idealism, friend of Deakin, author of two of the most influential school text books on civics and a public intellectual, argued that representative democracy as it had been established in Australia was the culmination of a struggle for freedom of the English, which began when the Anglo-Saxons were

conquered by the Normans in the eleventh century. The goal of life is self-realisation, Murdoch proclaimed, and this requires liberty of and democracy within one's society. Now that the struggles for freedom and democracy have triumphed, 'it is obviously our first duty as citizens to learn to govern'.¹⁷ The logical implications of this were obvious: 'If the people are to govern, it is necessary that the people be educated; therefore the State provides the best education available, and insists that all its citizens shall take advantage of the education provided.'¹⁸ People needed to be educated in the liberal arts.

That Australia should have been a laboratory for the most advanced ideas in democracy is highly significant. As a colony it had been set up to absorb excess population from and to supply raw materials to Britain. It was designed to be an extractive economy, where development involved exporting its wealth and impoverishing it, and through most of the nineteenth century, this is how it functioned. The struggle for nationhood was not only a struggle for democracy, but also a struggle to avoid becoming an extractive, plantation economy. Under the influence of the ideas of Friedrich List, becoming a nation was seen as a struggle to develop a productive economy in which people's creative potential was fostered and income distribution was not determined by the market but by principles of justice.¹⁹ In articulating a vision for a future based on studies of the Dutch Republic, the Swiss federation and the USA, proponents of the Australian nation argued for a federal system of government with power devolved as much as possible to local levels.²⁰ It was largely because of this vision of the future that Australia avoided the fate of Central and South American countries and achieved a high level of affluence and egalitarianism. This local vision was integrated with a broader vision of the future of the British Empire as a federation, and of a world order with an international government upholding the principles of self-determination, decentralisation of power and subordination of markets to communities. The tradition of economic thought on which Australia was based, requiring control of trade and fostering domestic industries, is now being revived as essential for any nation to achieve prosperity, while the notion of the world organised as 'communities of communities' with power decentralised as much as possible is now being promoted as the only realistic way to control the global market and create an ecologically sustainable civilisation.²¹

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This means that the struggle for Australian nationhood as a democracy was fused with a grand narrative projecting the liberation of all countries from imperialism and the destructive imperatives of unconstrained markets, and the creation of a just world-order in which all nations and all individuals would be provided with the conditions to realise their highest potentials—the grand narrative that still guides people committed to global justice. While this terminology was not used, and not all details were spelt out, it was appreciated at the time that the struggle to realise this vision of the future required an understanding by the entire population of history and of their historical mission. As Murdoch wrote in the preface to *The Struggle for Freedom*:

History seems to me to be the one subject which a democratic state cannot afford to neglect in its educational system, because History is the one subject by means of which we can give instruction in *citizenship*. ... To give to its readers a clear and just understanding of the institutions amid which they must play their part as citizens; to strengthen, if it may be, the civic fibre in the hearts and minds of the future citizens of our Commonwealth—such is the purpose, however ill accomplished, of the book; a purpose which the author has never suffered himself for a single instant to forget.²²

Among the institutions that require a clear and just understanding are the institutions of education. Perhaps even more fundamentally, history is required to preserve the institution of language, to prevent its corruption by power elites in order to cripple people's ability to comprehend the ideals on which their institutions are based.

As one of the oldest of existing democracies, founded on one of the best worked out political philosophies ever developed,²³ Australia was a major challenge for opponents of democracy. Strategies developed by these opponents could then be deployed elsewhere. The destruction of Australia's democracy, the undermining of its national economy and its transformation into an extractive economy, the plundering of public assets, the acceptance of its subjugation by transnational corporations rendering Australians unable to deal with ecological problems that threaten its very existence, could only be achieved by subverting its culture at its most fundamental level.²⁴ If such subversive forces cannot be checked within Australia, it is difficult to see how

they can be checked globally. To comprehend and counter such elemental corruption it is necessary to provide a broader history of the relationship between liberty, democracy and the liberal arts and, more generally, education—a history that was simply assumed as understood by the British Idealists and the founders of the Australian nation.

The origin and evolution of the liberal arts: from ancient Greece to Renaissance Italy

The notion of ‘liberal arts’ (*artes liberales*), consisting of philosophy, mathematics, music, literature, rhetoric, geometry and astronomy, and exemplified in the works of Marcus Terentius Varro (116 BC to 27 BC), crystallised in ancient Rome in the century preceding the overthrow of the republic.²⁵ It was seen as the education appropriate for a free person, a general education defined in opposition to the specialised training appropriate for slaves. From the beginning, this notion of education was intimately related to the notion of liberty, which was always defined in opposition to slavery. The liberal arts were meant to be equivalent to the Greek *enkyklios paideia*, and it is as a development of the Greek notion of *paideia* that the liberal arts and their relation to liberty can be best appreciated.

For the ancient Greeks, *paideia* (a word that can be translated as ‘culture’ and ‘civilisation’, as well as ‘education’) was the basis of their greatness.²⁶ Pericles (c.495 BC to 429 BC), in his funeral oration at the beginning of the Peloponnesian War, claimed that it was the *paideia* of the Athenians that enabled them to accept their duties, defend their freedom and govern themselves. Isocrates, who systematised the Greek form of *paideia*, echoed these views in his *Panegyricus* (completed 380 BC). *Paideia* transformed people into adults, so that instead of unthinkingly submitting to autocracy they became capable of guiding their own and others’ destinies. People without *paideia* would submit to oppression, and if given a chance to take over government, would become oppressors in turn. Those with *paideia* would refuse to accept oppression and could reconstitute themselves a free, self-governing community even if defeated in war. The foundation of *paideia* was the Homeric poems which bequeathed to the Greek polis the obligation to be courageous, general ideals of liberality and magnificence in

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the conduct of life, and a strong sense of duty. Transmogrified, these formed the basis of the higher social standards of the polis that made Athenian democracy possible.

Above all, these standards involved a commitment to the polis. As Pericles proclaimed in his funeral oration: ‘Here each individual is interested not only in his own affairs but in the affairs of the polis as well... [W]e do not say that a man who takes no interest in politics is a man who minds his own business; we say that he has no business here at all.’²⁷ *Paideia*, as Cornelius Castoriadis pointed out, first and foremost ‘involves becoming conscious that the *polis* is also oneself and that its fate also depends upon one’s mind, behaviour, and decisions; in other words, it is participation in political life’.²⁸ Those who lived up to these standards were the *agathoi*, defined in opposition to the cowardly, mean-spirited, calculating *kakoi*. Rhetoric, which included the exegesis of the poets and the study of history, became a central component of *paideia*, followed by philosophy, mathematics and cosmology. There was some tension between the teachers of rhetoric, such as Isocrates, and philosophers with their preoccupation with knowledge, such as Socrates and Plato, but generally this tension was fruitful as the philosophers interrogated received ideas and upheld the quest for truth, justice and the good, while rhetoricians inspired people to live by these ideals, equipping them for life and involvement in the public sphere.²⁹ Aristotle gave a place to both rhetoric and philosophy.

The Romans, most importantly, Cicero (106 BC to 43 BC), the main defender of the republic, grasped the importance of education in cultivating virtues to maintain liberty as Rome’s republican institutions became increasingly corrupt, were threatened, and then were overthrown.³⁰ Referring to education as *artes liberales*, Cicero took its core to be rhetoric, history, jurisprudence and philosophy, although sciences such as geography and astronomy, psychology and medicine, and military and naval science also had a place.³¹ Its goal was to produce *humanitas* (which can also be translated as ‘culture’)—the combination of philosophical wisdom, humanity and eloquence. For Cicero, this defined people as human. ‘We are all called men, but only those of us are men who have been civilized by the studies proper to culture’ he proclaimed.³² It was during this period of

crisis that the notions of liberty and slavery became a central focus of rhetoric, history and philosophy. Liberty implied 'self-government', while to be enslaved was to be under the jurisdiction of others, dependent upon them and subject to harm by them.³³ Then, despite the name 'liberal arts' used for such education, the connection between education and liberty was largely lost. The main contribution of the later Romans, and then medieval teachers, in developing *paideia* as the liberal arts, was to systematise it and divide it into the *trivium*, consisting of grammar, logic and rhetoric, and the *quadrivium*, consisting of arithmetic, geometry, music and astronomy. The study of these became the preparation for students to advance to the study of law, medicine or theology. However, the idea of liberty was preserved by this education, firstly, with the triumph of Christianity, as an ideal to be realised in the afterlife for the whole of humanity, and then, with the rise of the arts faculties in mediaeval universities, and later, self-governing cities in Northern Italy, to be realised in temporal life.³⁴ The struggle for liberty was fully revived in the Italian Renaissance.³⁵

Again, it was as their liberty was threatened that the North and Central Italian city states came to appreciate the importance of education. Roman defences of liberty, particularly in the rhetoric of Cicero and in works of history, were rediscovered, and education became a central concern. It was then, first in Florence, that the term 'humanities' was embraced to define a return to Ciceronian ideas of education, generating the political philosophy of the civic humanists (people educated in the humanities) committed to republican government and fostering the virtues required of people to uphold their liberty and govern themselves.³⁶ With their goal of education being the well-rounded development of the student, humanistic disciplines gradually replaced medieval scholasticism in the universities throughout Europe, with the Italian Renaissance university becoming the prototype for the modern university, including the German Humboldtian University.³⁷ While initially the humanists focussed on moral philosophy, rhetoric, history, poetry and the plastic arts and turned their backs on the logic, physics and metaphysics of scholastic philosophy, they were concerned with everything relevant to humanity, and eventually revived cosmological speculation. The most outstanding figure in this regard was Giordano Bruno who, rejecting the

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hierarchical cosmology that had dominated and legitimated feudal society and, turning for inspiration to the early Greek philosophers, developed a conception of matter as creative and of the universe as self-organising. Arguing that the universe is a sphere whose centre is everywhere and circumference is nowhere, he not only defended republicanism, but also accorded equal significance to everyone, even the poor. This renaissance of the struggle for liberty spread north, helping to inspire the Dutch and the Swiss in their struggles for independence from the empires of the Habsburgs, and eventually played a major role in the English Revolution.

Renaissance culture provoked a reaction, creating a split within the culture of modernity that has continued up to the present. The reaction was associated with the efforts to develop a cosmology and social philosophy to oppose the influence of Renaissance humanism and Bruno's Nature Enthusiasm.³⁸ This was the mechanical philosophy of Descartes and Hobbes. Hobbes, in particular, was concerned to legitimate rule by monarchy, and set about creating a vocabulary based on the assumption that humans are nothing but complex machines moved by appetites and aversions that would make the quest for liberty as it had been defended by the civic humanists, unintelligible.³⁹ He identified science with knowledge of how to control the world and denied any significance to humanistic education or claims to knowledge by the humanities, and characterised the arts as nothing but forms of amusement. He also laid the foundations for a tradition of economic thought promoting free markets and greed as the source of wealth in opposition to the Renaissance tradition (which influenced Friedrich List), which had claimed that wealth comes from protecting economies and fostering the arts and innovation.⁴⁰ The second generation of mechanistic thinkers, represented by Newton and Locke, defended rights to property, rule by an oligarchy of the wealthy and inspired the development of utilitarianism and the economics of Adam Smith. Further developments of this mechanistic world-view include Darwin's mechanistic version of evolutionary theory and Social Darwinism, neo-classical economics, statistical mechanics, molecular biology, information theory and theories of artificial intelligence; in other words, the ideas that dominate the modern world.

Post-Kantian philosophy, the concept of *Bildung* and the Radical Enlightenment

Renaissance thought was not totally defeated, however, and was kept alive in what Margaret Jacob called the 'Radical Enlightenment'. This was associated with the quest for liberty and republican government, in opposition to the 'Moderate Enlightenment' associated with the influence of Newton and Locke and the defence of possessive individualism, commerce and oligarchy.⁴¹ While initially based in Britain, France and Holland where it survived as an underground movement, the Radical Enlightenment flowered in Germany in the thought of Immanuel Kant and his students, Johann Herder and J.G. Fichte, who radicalised Kant's ideas.⁴² Herder was immensely influential, inspiring Goethe, Friedrich Schelling and other Early Romantics—Hegel, Friedrich Schleiermacher and Wilhelm and Alexander von Humboldt—most of whom were also influenced by Fichte. Post-Kantian thought was another renaissance of the quest for liberty, and again, education, now characterised as '*Bildung*', and was a major focus of interest. In reviving the quest for liberty, these post-Kantians confronted and overcame the atomistic and mechanistic thought of the Moderate Enlightenment. It is this tradition that inspired the British Idealists on which the Australian nation was founded, and to comprehend British Idealism, this tradition and its views on education require detailed examination.

Bildung can be translated as 'education', 'self-cultivation', 'character-formation' or 'culture'.⁴³ It was seen as part of the general process of self-realisation, the development of all one's characteristic powers as a human being and as an individual. As with the ancient Athenians, *Bildung* was seen as the condition for people to be free and to govern themselves. The most important figures in the development of this notion were Herder and Fichte. Herder argued that each nation has its own culture and is challenged to find its own centre of gravity and realise its own unique potential, and thereby to contribute to the advance of humanity. Individuals, inheriting their culture, further this process of advancing humanity and their nation by discovering their own centre of gravity and realising their own unique potentials. The study of history plays a major role in this. It involves feeling oneself into the worlds of people with very different ways of living and

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thinking, appreciating their uniqueness and achievements, thereby being inspired to fully realise one's own unique potentiality. In developing Kant's notion of freedom through acting according to ethical principles, Fichte argued that the self-conscious 'I' emerges through being recognised as free by others who are recognised in turn as free, and constraining one's actions to accord with the freedom of others. Consequently, politics, by which people are brought to think of themselves as free persons, plays a formative role in constituting individuals as self-conscious, responsible agents. This requires education. As Fichte put it: 'The summons to engage in free self-activity is what we call upbringing [*Erziehung*]. All individuals must be brought up to be human beings, otherwise they would not be human beings.'⁴⁴ Education as *Bildung* is not merely the acquisition by a person of useful knowledge; it is that through which one becomes a person. Consequently, one of the most important professions in society is that of the 'scholar' [*Gelehrter*].⁴⁵ Fichte wrote of the vocation of the scholar that it can only be understood in relation to society, and must answer the question, what is the vocation of people in society? This in turn must answer the question, what is the vocation of humans as such? Answering this question must be the ultimate end of philosophy. As Fichte proclaimed:

All philosophy, all human thinking and teaching, all of your studies, and, in particular, everything which I will ever be able to present to you can have no purpose other than answering the questions just raised, and especially the last and highest question: What is the vocation of man as such, and what are his surest means for fulfilling it?⁴⁶

The Early Romantics, inspired by Herder and Fichte, integrated these ideas, conceiving *Bildung* as enculturing people to realise their potential to be free, to recognise each others' freedom and to discover and realise their vocation to advance freedom. They supported the French Revolution and the quest to create a republic at the level of a country, and blamed its failures on the lack of education of its people. Upholding freedom in countries rather than cities in the more complex world of modernity, which even then was moving rapidly towards a global civilisation, placed far greater demands on education than the city states of ancient Greece or Renaissance Italy. *Bildung*,

they argued, is the condition for creating a democratic republic on a large scale.⁴⁷ So important did the Early Romantics regard such education that Friedrich Schlegel could write in 1799 that 'the highest good, and [the source of] everything that is useful, is culture (*Bildung*)'.⁴⁸

Wilhelm von Humboldt was not a supporter of democracy, but he embraced the ideas of the Early Romantics and was involved in the struggle to overcome the mechanistic view of the world. Embracing the notion of *Bildung*, he became the main figure in transforming education in Prussia in the early nineteenth century to meet these demands of the modern world, particularly when establishing the University of Berlin in 1810.⁴⁹ Although only an elite was educated at the time, his form of liberalism and the educational reforms he implemented contained the seeds for strong democracy. Humboldt's model of the university became the defining model of the modern university because it was so much more successful in every way than the alternatives: the medieval, utilitarian and business models of the university.⁵⁰ Its success largely accounted for the ascendancy of Germany in the nineteenth century. Support for it also came from those striving for greater democracy. It was the model of the university required to produce educated, responsible citizens. Although diluted, it was the Humboldtian model that was adopted in Australia. It was on the basis of this model that the liberal arts were placed at the core of Australian universities, and it was the notion of self-realisation through a culture committed to the advance of humanity and democracy, that was assumed by Walter Murdoch in his defence of public education.

The potential of this model has never been fully realised, however, because the philosophy that underlay it was largely abandoned by academics who embraced either a form of positivistic materialism or neo-Kantianism. To fully understand this potential it is necessary to look more closely at its founding philosophy and, in particular, the influence of the leading Romantic philosopher, Friedrich Schelling. It is well known that the most influential figure involved in the design of the Humboldtian University was Friedrich Schleiermacher, and that in embracing Schleiermacher's recommendations, Humboldt was rejecting those who argued for a utilitarian model of the university as developed in France.⁵¹ However, until recently, Schleiermacher

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was imperfectly understood. Schleiermacher has been studied as a founder of hermeneutics and a major theological thinker, but he was also interested in and had a major influence on mathematics. He was aligned with Fichte, who became the first professor of philosophy and then rector of the University of Berlin, and more fundamentally, with the even more radical ideas of Schelling.⁵² Schelling also had a direct influence on Humboldt.⁵³

Schelling began his career as a disciple of Fichte, under the influence of Herder, Goethe and Kant's *Critique of Judgment*. John Zammito wrote of the *Critique of Judgment*:

In Kant's association of beauty with morality, nature with art, history with the achievement of a just society, they saw the prospect for a consummate vision of the order of the world as well as a cultural mission for their generation.... Nature, art, and history needed to be welded into a grander synthesis than Kant himself had dared.⁵⁴

Schelling was at the forefront of this. Kant had examined how experience is organised through imagination, forms of intuition and categories of the understanding. Extending the notion of construction as a way of knowing that Kant had acknowledged in geometry, Fichte had developed a genetic constructive dialectic to show how such forms of intuition and categories developed, claiming knowledge of the process of formation of consciousness. Schelling, arguing that human consciousness is a product of nature and history, extended this dialectic to comprehend the generation of order in nature through division into opposed forces and self-limitation.⁵⁵ He showed on this basis how nature could evolve and generate sentient life and ultimately, humanity with its practices, institutions and reflexive self-consciousness. Granting an even more central place to feeling and imagination than had Kant, Schelling at the same time gave an even more central place than Kant to philosophy, history and art in comprehending the world and orienting people to live. Seeing categories as developing through history in practices and through reflective thought, his philosophy of nature brought into question and went beyond received categories, developing categories adequate not only to the physical world but to life and humanity. This work inspired the development of *Naturphilosophie*, a post-mechanistic anti-reductionist

form of science advancing Bruno's notion of nature as self-organising. In this, the importance of mathematics was recognised, but its limits pointed out, and ultimately, mathematics was subordinated to dialectic as a means to comprehend the world with a central place accorded to philosophy in the development of mathematics and science. More broadly, Schelling argued that philosophy must enter into life, not only the individual life, but also into the condition of the time, into history and into humanity. It must penetrate everything. 'Human affairs do not allow themselves to be governed by mathematics, physics, natural history...or even poetry and art' he proclaimed. We could extend this list to include economics, psychology or management theory. 'The true understanding of the world is provided by precisely the right metaphysics.'⁵⁶

Schelling himself published a work on the university.⁵⁷ However, rather than looking at this it is more illuminating to see how Wilhelm von Humboldt's ideas cohere when the influence on him of Schelling, along with Herder and Fichte, is appreciated. It has been a complaint against Humboldt that the University of Berlin was essentially a university of the humanities.⁵⁸ However, as a Schellingian, Humboldt identified the humanities with the liberal arts, which included theoretical science and mathematics. Humboldt characterised the aim of education as self-understanding, in the fullest sense of the word. The quest for self-understanding can only be fostered, Humboldt claimed; it cannot be produced by external institutions. It leads the individual to strive to know 'his fellow citizens, his situation, his era'.⁵⁹ Humboldt could assume this because he had embraced Fichte's insight that people need to see themselves from the perspective of others to achieve self-consciousness. As Humboldt put it, each person 'reaches consciousness of self' through others; 'an "I" without a "Thou" is unimaginable to his reason and his senses—for this reason does the individuality of his sociality (his Thou) tear itself off simultaneously with that of his own individuality (his I)'.⁶⁰

This insight, in turn, justified Herder's idea that we are essentially socio-cultural beings living within a particular culture. Following from this, Humboldt argued that 'a nation is an individual' and 'the individual human being is an individual of an individual'.⁶¹ Self-knowledge, therefore, requires not only knowledge of other individuals, but also of other nations and other

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historical times extending to the whole history of humanity. Humboldt did not accept Fichte's view of nature as resistance to human will, cognised as a world of objects to be controlled in the process of humanity's efforts to create themselves by overcoming such resistance. Instead, he embraced Schelling's notion of humans 'as a whole product of nature, one of whose sides he shares with the animal world'.⁶² Consequently, he assumed that the mechanistic view of nature was obsolete and was being replaced by Schelling's view of nature as dynamic and creative, a creative process of becoming which has generated life and human consciousness.⁶³ Following Schelling, he believed that to achieve full self-understanding it was necessary to comprehend not only other people but also the formative processes of nature and the development of humanity through history. Such comprehension is achieved by dialectical reason involving a speculative genetic reconstruction of the stages of the development of nature and humanity. Schleiermacher, again following Schelling, accorded a place to both dialectic and mathematics in achieving knowledge, and argued that all mathematics could be understood as construction. This claim inspired the work of Justus Grassmann and his son, Hermann Grassmann, who laid the foundation for a 'dynamist, morphogenetic mathematics' which would 'be able to decipher the internal, dynamic structure of nature' and, without presupposing matter and extension, would account for the emergence of patterns.⁶⁴ This insight is still the driving force in modern physics.

Schelling had acknowledged that such a comprehensive understanding is never finally achieved, but argued that, nevertheless, it must be striven for, requiring both speculative efforts to grasp the whole and guided by this, detailed empirical investigations. Humboldt argued on this basis that it is the state's duty:

to see that in the inner organization of higher institutions of learning everything depends on the preservation of the principle that knowledge is to be regarded as something not wholly found and never wholly findable, but as something ever to be searched out. ... As soon as one...imagines that [knowledge] need not be creatively sought in the depths of the human spirit but can be assembled extensively by collecting and classifying facts, everything is irrevocably and forever lost.⁶⁵

Research must always be directed to achieving an integral understanding of the cosmos, and 'all one-sidedness must be banned from higher institutions of learning'.⁶⁶ The role of the state then is not to direct research but to maintain the conditions in which:

the inward organization of these institutions must produce and maintain an uninterrupted cooperative spirit, one which again and again inspires its members, but inspires them without forcing them and without specific intent to inspire.⁶⁷

Since developing such knowledge is at the same time advancing self-understanding as part of the process of self-formation, the concept of the higher institution of learning is 'the summit where everything that happens in the interest of the moral culture of the nation come together'.⁶⁸ As Humboldt assumed that the research program of the *Naturphilosophen* would prevail over the mechanistic view of the world, he could also assume that through this quest for knowledge as self-understanding and self-formation the vocation of humanity and of each individual would become increasingly better understood.

The present place of the Humboldtian model of the university

Despite the failure to realise its full potential, the Humboldtian model of the university, with some modifications, remained the guiding idea of the modern university up until the 1970s. Then, claimed Jean-François Lyotard and, following him, Bill Readings, the Humboldtian model was rendered obsolete and could not be resurrected.⁶⁹ Certainly, it appears that this model of the university is obsolete in Australia. However, there are also strong reasons for arguing that it is now that the full potential of the Humboldtian University should be realised. Schelling's ideas about science, mathematics, history, art and philosophy have largely been vindicated against the onslaught of those who defended the Cartesian/Hobbesian tradition of thought. The most concerted effort to defend the Cartesian/Hobbesian view of science, by logical positivists and other logical empiricists, was demolished by historically oriented philosophers of science. Echoing Schelling, they not

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only demonstrated the role of basic categories or concepts within science, but also showed that there can be revolutions in these concepts. In doing so, they demonstrated the fundamental role played by analogies or metaphors in science. This suggested a problem of how it would be possible to judge between radically different conceptual schemes, metaphors and analogies which impregnate experience and alter not only what is perceived, but also what is taken to be science. This problem was resolved when it came to be realised that, firstly, the goal of science is understanding. Defective metaphors can facilitate partial understanding rather than having to be judged true or false. Secondly, radical advances in science, often associated with a switch in root metaphors, can be judged through the stories that are formulated from the new perspectives provided by these advances about past science. Through such stories both the achievements and failures, including necessary failures, of past science can be understood in a way that reveals the new science as a real advance.⁷⁰ These insights into the workings of science undermined the foundation of 'scientism', the view that science has a totally different way of acquiring knowledge from the humanities, and that only a supposed eternally valid scientific method provides reliable knowledge. Science now has to be seen as dependent upon the literary tropes and historical knowledge that were dismissed as forms of amusement or worse by the Cartesian/Hobbesian tradition of thought.

More fundamentally, post-Newtonian science is really the triumph of *Naturphilosophie*, although this has not been acknowledged by mainstream scientists.⁷¹ The development of field theories, ontological interpretations of quantum theory, endophysics, non-linear thermodynamics, holistic evolutionary theory and theories of life, complexity theory (including hierarchy theory and theories of emergence, biosemiotics and biohermeneutics), genetic epistemology, and most importantly, ecology and human ecology, have replaced the mechanistic world-view. Not only humans, but also the whole of nature has to be seen as self-organising and creative. It has been argued by Robert Ulanowicz that it is ecology rather than physics that should now be taken as the pre-eminent science for comprehending nature.⁷² The universe must be seen as a creative process of becoming, creating the ecological conditions for the emergence of life and then humanity with its cultures and

complex organisations, reflective self-consciousness and capacity to organise its experience through stories, to develop philosophy, mathematics and science and the institutions to support these—able to provide the conditions for people to comprehend this creative becoming and its significance. As Ilya Prigogine and Isabelle Stengers have argued, there is a new alliance between the science and the humanities.⁷³ This broader perspective informed by ecology—extended to encompass humanity—justifies the ideal of a healthy, democratic society, as promulgated by the British Idealists and embraced by Alfred Deakin and Walter Murdoch, where the prime role of the state is seen as removing impediments (most importantly, poverty and ignorance) to, and providing the conditions for, the fullest self-realisation of its members. More specifically, Humboldt's vision of a healthy university can be seen as a specially important case of a healthy ecosystem, in which its components, students and academics are provided with the niches that enable them to realise themselves in a way that simultaneously augments not only their own conditions of existence, but also the conditions of existence of other components of their intellectual community and the broader social and ecological communities of which universities are components.

The most recent triumphs of post-Newtonian science—the development of complexity theory and biosemiotics—comes at a crucial time in history. As humanity faces a global ecological crisis that threatens not just the future of civilisation, but even the future of terrestrial life, it has never been more important for humanity to discover its vocation and the means for realising it. With the self-understanding made possible by the maturing of the Radical Enlightenment, it should now be recognised that the vocation of humanity is to develop its full potential to understand itself as part of and as an emergent complex of processes within nature, to liberate itself from tyranny and augment rather than undermine the ecological conditions of humanity's existence. To avoid a global ecological disaster it will be necessary to overcome the defective assumptions presently dominating the world and inspire people to live according to the conception of the world being developed by ecologists and human ecologists informed by Schellingian thought, defending and advancing the public institutions necessary to enable people to live in this way. Based on forms of thinking being developed in ecology and human

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ecology, this civilisation is required to reverse the destructive imperatives of the existing world-order, and take as its ultimate goal, augmenting the resilience of the global ecosystem and its component ecosystems. This means that not only have the assumptions on which the Humboldtian model of the university was based been vindicated, but it is also more important now than ever that the research and education this form of university was designed to foster be defended and advanced.

The policies of neo-liberals and neo-conservatives, calling for small government, has really been a concerted effort by a new global ruling class based in transnational corporations—the ‘corporatocracy’—to integrate markets and bureaucracies into a global economy under their control while eliminating opposition to their rule.⁷⁴ Transforming universities into transnational bureaucratic corporations and assaulting the liberal arts had nothing to do with the Humboldtian University being an obsolete model. The Humboldtian model of the university has been one of the most successful forms of organisation ever created, whereas the bureaucratic forms that are taking their place have been a disaster in the business world, and are proving to be a disaster for education.⁷⁵ Furthermore, unless their appointments are blocked, people properly educated in the liberal arts outperform those with only a specialist training in whatever career they take up, including business management, and specialists are far more successful if they have a liberal arts background. This attack on the Humboldtian University, commodifying knowledge and culture, is an essential part of the war against democracy at a time when advances in science and the philosophy of science have vindicated the Radical Enlightenment, and defending democracy has never been more important. The success of the corporatocracy and its allies has not only engendered a massive concentration of wealth and income, but also a crippling of real science, an intellectually stunted and ethically retarded population dominated by a culture of consumerism, a global financial and economic crisis, social disintegration manifest in increasing levels of random violence, and an ecological crisis that threatens the future of humanity. In the 1970s, the corporatocracy realised that the greatest threat to this program was the environmental movement.⁷⁶ The struggle to revive the Humboldtian model of the university and, along with this, the liberal arts, is a major part of

the struggle for liberty—to revive democracy, revive public institutions and then regain control over markets, address problems of social disintegration and, above all, defend the ecological conditions for human civilisation.⁷⁷ The liberal arts, as conceived by Humboldt, are required to produce people with strong characters able to fight for liberty and then create what Chinese environmentalists have called an ‘ecological civilization’.⁷⁸

The liberal arts and the struggle over democracy in Australia

It is in this context that the state of the liberal arts in Australia should be understood. Inspired by British Idealism and, indirectly, by German post-Kantian philosophy to forge Australia into a model of democracy, the liberal arts were strongly defended in the early part of the twentieth century. Despite this, from the 1980s onward Australia was at the forefront of returning to the anti-democratic doctrines of the Moderate Enlightenment and demolishing education in the liberal arts. This reversal is even more paradoxical when it is appreciated that following post-Kantian philosophy, British Idealists were concerned to overcome the atomistic individualism and mechanistic thinking of mainstream economic thought that neo-liberals were promoting. British Idealism had been appealing to Australians precisely because they could see that such atomic individualism was condemning Australia to being nothing more than an extractive economy subject to major financial crises. Furthermore, Australians had already forged a vision of the future of humanity as a multi-levelled federated structure now being called for by environmentalists and ecological economists as the solution to the destructive effects of economic globalisation. This reversal in thinking in Australia was occurring at a time when it was becoming evident that the imposition of markets would not only concentrate wealth and undermine democracy, but could drive humanity to ecocide, and it was already clear that few countries in the world had degraded their environments as much as Australians.⁷⁹ Illuminating this paradox is not only important for Australia, but for the future of humanity.

This reversal from a democratic nation to a neoliberal extractive economy becomes more intelligible when it is realised how barbarically brutal and environmentally destructive were the Australian colonists who had been

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forged into this democratic nation, and the challenge to Australia's Idealist philosophical underpinnings posed by Darwinian evolutionary theory and Social Darwinism through which these colonists had justified their exploitative behaviour.⁸⁰ However, the ideals of the British Idealists were strongly defended. It was an Australian philosopher, Samuel Alexander, who showed how British Idealist ethics and political philosophy could be reformulated and defended on naturalistic foundations on the basis of post-Newtonian science, recovering a Schellingian notion of evolution in which a central place was given to emergence. Alexander influenced Alfred North Whitehead, who had a major influence on post-Newtonian science, particularly biology, including the work of the Australian biologists, Professor W.E. Agar (1882–1951) of Melbourne University and later, Professor Charles Birch (1918–2009) of Sydney University. John Anderson, who had been influenced by British Idealism and Samuel Alexander, after taking up the professorship in philosophy at Sydney University in 1927, forcefully defended the liberal arts and the Humboldtian model of the university. 'A liberal education is one which enables us to live freely. It is training, not in a particular job or service, but for a whole life' he proclaimed.⁸¹ For Anderson:

conceptions of education as critical thinking and democracy as active, aware citizenship coalesce. ... Democracy and education...are jointly involved in the permanent struggle against forces conducive to political and intellectual regimentation and as such are very important manifestations of...the activities that make history 'the story of liberty'.⁸²

To this end Anderson maintained 'that all education must be liberal, and that training of a "utilitarian" character, by being illiberal, is at the same time, uneducative'.⁸³ Nor can universities tolerate teaching in silos. It is necessary, Anderson argued, 'that all the subjects studied be brought into the closest possible connection, that Classics, literature, history and science should be taught as parts of a single culture'.⁸⁴ More generally, Anderson argued:

it is by its cultivation of free inquiry that the University maintains its universal appeal. To think of it apart from the general system, not merely of education, but of public life, is to neglect the social character of its work, to

overlook the fact that it is only by the criticism of preconceived ideas and arbitrary standards that public spirit can be fostered.⁸⁵

It was despite such advocacy that the commitment to the liberal arts was rejected.

A further clue to what happened can be found in another development in Australia's past. When the old Melbourne gaol was opened for public viewing, on display were the gallows on which its most famous bushranger, Ned Kelly, had been hanged. The most gruesome aspect of this display was that the gallows were built by a prisoner who was then hanged on them. This began a tradition in Australia where its ruling elites developed and perfected a form of domination in which the lowest members of society were utilised to implement their own oppression. This is the Australian form of 'managed democracy', or 'inverted totalitarianism', identified by Sheldon Wolin referred to in the introduction. The triumph of neo-liberalism in Australia was not implemented to begin with by an ultra-right wing reactionary political movement striving to return to the nineteenth century, as occurred in Britain and the USA, but by members of the Australian Labor Party (ALP) apparently believing they were being progressive. The ALP minister for education, John Dawkins, apparently thought he was being progressive in setting in motion the destruction of the liberal arts and the Humboldtian model of the university. Clearly, the politicians who had taken over the ALP from its members and supporters had been co-opted by the ruling elites in Australia, notably Rupert Murdoch, who realised that a supposedly left-wing government could be used to dismantle the work of generations of idealistic Australians that an overtly right-wing government would not have dared to attempt. However, there was still the question of how these politicians could have been so easily co-opted.

The secret of this treachery lies in the fact that for the first time the ALP was dominated by university graduates. Graduates from universities not only took over the ALP, but also Australia's trade unions, including academic unions. These were then amalgamated into huge bureaucracies and run as businesses, disempowering the people they purported to represent. The politicians and trade unionists who turned against education in the liberal

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arts, and against democracy and the struggle for liberty, were educated by the universities they turned against. These politicians and union officials did not reject the values and ideals they had been taught in universities. What they had been exposed to, with rare exceptions, was a caricature of the kind of education called for by Schelling, Schleiermacher, Humboldt, the British Idealists, Murdoch and Anderson. Partly, the problem was the pernicious influence of neo-classical economics, as Michael Pusey documented in his study of economic rationalism in Canberra; but this was by no means all.⁸⁶ There was a general acceptance by humanistic intellectuals of the claims of neo-classical economists to have the knowledge required to govern society, and more broadly, an acceptance that science is nothing but an instrument for controlling nature. Humanistic intellectuals, with some notable exceptions, did not see themselves as responsible for inspiring young people to understand themselves, their society and their era, let alone the whole of nature and thereby find humanity's and their own vocation. They did not see their task as producing people who could create the future. Collectively, they had surrendered to the Hobbesian view of humans, nature, science and the arts, and accepted that their work was only of value as a form of entertainment. They had lost the plot.

How did this happen? The Humboldtian form of the university is dependent upon those with outstanding achievements being recognised by their colleagues. Quite apart from a propensity for *ressentiment*, mediocre academics have good reason to deny such recognition. Firstly, they are in competition with such people. Secondly, it is a feature of outstanding intellectual achievements, particularly in theoretical work, to render existing research programs and existing disciplinary boundaries obsolete. Mediocre academics share a common interest with bureaucrats in universities, government and business dominated by the quest for power to be rid of people whose activities and outputs create unpredictability. Bureaucrats are predisposed to be hostile to such academics not only because they are unpredictable and not easily controlled, but also because they require freedom to explore uncharted territory. Bureaucrats tend to pursue a common strategy, identified by Michael Crozier, 'to leave as much leeway and freedom of manoeuvre to the dominant, while imposing the strictest

possible constraints on the decisional freedom of the dominated side'.⁸⁷ This suits incurious, unimaginative academics who are happy to work in their little silos, but clashes with academics driven by the quest for truth, comprehension and understanding. Protection for such academics against this strategy includes appeal procedures for appointments and promotions (to prevent nepotism) and security of employment. Without these, mediocre academics are prone to take over and corrupt their own disciplines and use their positions in these corrupted disciplines to cripple other disciplines.

In Australia, cliques in core disciplines of the liberal arts divided into two apparently opposed groups, with each group containing subdivisions. On the one side were cautious, overspecialised scholars in the humanities who, seeing themselves as living the 'life of the mind' and educating their students to be connoisseurs of high culture or virtuosos of intellectual games, trivialised and fragmented learning. They excluded 'big' ideas and broad questions about nature, life and civilisation—the kinds of ideas and questions that enable people to make connections between apparently disparate actions and events as 'unscholarly' or even 'unseemly'. However, these are the ideas that are not only essential to the advancement of enquiry; they are the ideas that empower people and are essential to democracy, and ultimately, it is these that justify detailed research in the humanities. Ignoring these, scholars disputed with each other over trivia, fostered tunnel vision in their students and rendered themselves and their students superfluous to society. On the other side were the iconoclastic cynics in the humanities and social sciences who debunked ideas and the ideals associated with them as disguises for the struggle for power, and celebrated self-indulgence as liberating. Such academics (vulgar Marxists and deconstructive postmodernists being exemplary in this regard) liked to think of themselves as radical, but in fact they more effectively served power elites than the scholars.⁸⁸ As Pierre Bourdieu noted of such people: 'In endeavouring to discredit every attempt to impose an autonomous principle of hierarchisation, and thus serving their own interests, they serve the interests of the dominant fractions of the dominant class, who obviously have an interest in there being only hierarchy'.⁸⁹ Unencumbered by ethical constraints, when universities came under attack, these cynics sought to preserve their own positions by ingratiating themselves to those who had power.

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Superficially being opposed to each other, scholars and iconoclasts shared a common *habitus* radically at odds with intellectuals in the sciences and humanities who believed that ideas and education are of central importance to science, society, democracy and civilisation. They were united by a deep, nihilistic cynicism, and the quest either for an easy life or for advancement in their careers, and being cynical and calculating, they were congenial to management. Like managers, they never reflected, or reflected at a most superficial level, on the point of universities, university education and research, and the obligations upon them of occupying a role within a public institution. Like managers, they were uncomfortable in the presence of those whose *habitus* suggested a belief in what they were doing. Consequently, managers tended to give them control of appointments, which ensured the reproduction of their own kind.⁹⁰ Effectively, the *kakoi* prevailed over the *agathoi*. As in American universities, ‘the traditional intellectual...ha[d] been replaced by the technocratic intellectual whose work is organically connected to the knowledge industry, to the economy, state, and military’.⁹¹ Once tenure had been effectively eliminated in the 1990s, scholars, iconoclasts and applied scientists were utilised by managers and technocrats to finish off the traditional intellectuals, or at least, to finally silence them. Acting according to a pattern that had been identified by Michel de Montaigne in the sixteenth century, these academics traded in their liberty and the liberty of universities to become petty tyrants within the new hierarchical structures being formed by managers in their quest for power and money.⁹² This tacit collusion of scholars, iconoclasts, applied scientists and managers illustrated Bourdieu’s analysis of how, through a shared *habitus*, collective actions can be undertaken which ‘are objectively organized as strategies without being the product of a genuine strategic intention’.⁹³

When the assault on the liberal arts began, there was little solidarity among its defenders.⁹⁴ Neither scholars nor iconoclasts acknowledged the importance of work in disciplines other than their own. They ignored institutionalist, historically oriented political economists who opposed neo-classical economics, humanistic psychologists, social scientists and theoretical scientists working to overcome reductionist materialism. Undefended, economics graduates opposed to neo-classical economics were unable to

gain appointments or research funding.⁹⁵ Humanistic psychologists who had always been marginal, almost completely disappeared, while theoretically informed critical sociologists were replaced by atheoretical empiricists doing little more than market research.⁹⁶ Theoretically oriented scientists who were not 'team players' prepared to subordinate themselves to team leaders, and who were prone to challenge the prevailing reductionist materialism and other orthodoxies, were among the first to be targeted for retrenchment.⁹⁷ Since scholars and iconoclasts tacitly accepted the Hobbesian view of science as nothing more than a means to develop technology, they were effectively aligned with these applied scientists. They denied any cultural value to science apart from this; but instrumental science does have a cultural value. Applied science, concerned only with the kind of knowledge that can be sold as a commodity and therefore taking for granted the validity of reductionist science, thereby provides tacit support for orthodox Darwinism, social Darwinism, neo-classical economics, reductionist psychology, Taylorist managerialism and the view of the humanities as being only of significance as a form of entertainment.

Philosophy, which in the Humboldtian form of the university was meant to transcend all disciplinary boundaries and put all other disciplines in perspective, was dominated by ahistorical analytic philosophers who rejected this role and broke up philosophy itself into sub-disciplines.⁹⁸ Australian analytic philosophers also defended 'scientism' against the humanities; that is, they defended the obsolete reductionist science of science popularisers such as Richard Dawkins in the anti-humanist tradition of Descartes, Hobbes, Newton and Locke, without acknowledging that a rival and more successful alternative research tradition even existed. Effectively, they legitimated the destruction of the liberal arts. Historically oriented philosophers of science were in the strongest position to understand the advances being made in science, including ecology and climate science; the relation between science, technology and society; the disastrous effects not only on science but also on society of past government efforts to control and reduce science to nothing but a means to develop technology;⁹⁹ and the fake claims to scientific status of mainstream economics, reductionist psychology, empiricist sociology and Taylorist 'scientific' management theory. Having the strongest arguments

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to oppose all this, they were isolated and almost erased from the academic landscape.

Without the wit to be aware of it, by their joint actions over several generations, diverse Australian academics, including those in the liberal arts, surreptitiously inculcated in their students a Hobbesian view of people and a mechanistic view of nature and thereby subverted democracy. University-educated politicians were inculcated with the nihilistic cynicism and purely instrumental attitude to nature and people implied by these. This world-orientation then informed their actions when they gained power. That is, they sold out Australia and its democracy to the transnational corporations.¹⁰⁰ Having trivialised their disciplines and excluded those who questioned their assumptions, Australian academics in the liberal arts built their own gallows, and the gallows for Australia as a democratic nation. While doing so, they were allowed to think of themselves as respectable scholars or courageous, clear-sighted iconoclasts.

Conclusion

By putting Australia and its people in a position of dependence on transnational corporations where they can be harmed, and allowing public institutions to be infested with and taken over by university-trained managers, Australians have enslaved themselves. The transformation of the education system privileging the liberal arts to corporations selling training is the transformation of an educational system designed to produce free citizens to an educational system designed to produce slaves. As enslaved, Australians have become a threat to the rest of humanity. Australia was singled out not only by Jared Diamond as one of the two countries most likely to collapse through ecological destruction, but also by the eminent climate scientist James Hansen as the country whose policies on the environment would lead to disaster. In a letter he wrote to President Obama, warning of the dire consequences of climate destabilisation, Hansen wrote: 'Australia exports coal and sets atmospheric carbon dioxide goals so large as to guarantee destruction of much of the life on the planet.'¹⁰¹ This view is shared by Germany's leading climate scientist, Hans Schellnhuber. Australians are now so intellectually stunted that their minds are effectively controlled by the

public relations industry and the Murdoch press to sideline any politicians who take democracy or environmental problems seriously (the former leaders of the ALP and the Liberal Party, Kevin Rudd and Malcolm Turnbull, being the obvious examples).

Australians have achieved something, however. Through crippling the liberal arts they have shown the importance of the liberal arts to democracy and civilisation. They have also shown how the new global ruling class operates by facilitating the corruption of institutions from below. They have developed a uniquely Australian form of inverted totalitarianism, more subtle than the American variety, although it has much in common with it. Oppression and censorship of intellectual life essential to a healthy democracy comes from anti-intellectual cynics in everyday life who silence intelligent conversation, with much of this cynicism emanating from academics in the liberal arts. This strategy has now become transparent.

Conversely, by almost eliminating the liberal arts, Australians have created a space where what is required of universities can be clearly seen. To revive universities it will be necessary to uphold and strive to realise the full potential of the Humboldtian model of the university. It will be necessary to reinstate the liberal arts as the core of the university. However, to play their proper role the liberal arts cannot define themselves in opposition to science, or to economics. Along with the traditional humanities disciplines, the liberal arts will have to embrace theoretical science or, at least, natural philosophy. They will have to provide students with some understanding of how Newtonian science has been superseded, how the task is now to further comprehend nature as a self-organising process of becoming, advancing a tradition of thought going back through Schelling to Bruno as part of the Radical Enlightenment. They will need to have some understanding of mathematics and its origins, development and applications, just to appreciate where it is appropriate to use mathematics and where it is not. They will also need to give a central place to social philosophy through which the fakery of 'scientism' in the human sciences and the superiority of historical, institutionalist ecological economics and other humanistic forms of the human sciences over mainstream forms of these can be appreciated.¹⁰² Combining natural and social philosophy, it will be necessary to provide all students with an

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understanding of the core concepts of community ecology and human ecology—including eco-semiotics—as the most promising sciences to inter-relate and integrate the natural and human sciences, the humanities and the arts, completing the replacement of the mechanistic world-view.¹⁰³ In doing so, they will have to explicitly identify the role of metaphysics in all enquiry, the rival traditions of metaphysics, and what is involved in judging between these. They will have to give a place to philosophy as the ultimate transdiscipline.

Accordingly, education will have to be seen as *Bildung*, forming the character of students by enabling them to develop a coherent understanding of themselves as products of nature, the global ecosystem, civilisation and their particular societies, product/producers with a responsibility for creating the future. The goal should be to foster their imaginations and inspire them to realise themselves by augmenting the life of their social and ecological communities. It should now be clear that this requires liberty, and that liberty cannot be maintained or sustained without strong democracy. Education, above all, must be seen as producing citizens for a democratically organised society. This struggle has become imperative within the broader struggle to create a civilisation able to augment rather than undermine the present regime of the global ecosystem. The struggle for liberty of universities is part of the struggle for liberty, democracy and an ecological civilisation against the malignant forces of a globalised market, the new global managerial class and those who serve them.¹⁰⁴

Notes

- 1 On British universities, see Simon Head, 'The Grim Threat to British Universities', *New York Review of Books*, 13 January 2011 (<http://www.nybooks.com/articles/archives/2011/jan/13/grim-threat-british-universities>). On the state of Australian universities, see Simon Marginson and Mark Considine, *The Enterprise University: Power, Governance and Reinvention in Australia* (Cambridge: Cambridge University Press, 2000), and the Senate Report: *Universities in Crisis: Report on Higher Education* (Canberra: The Commonwealth of Australia, 2001). That Australian universities are recognised internationally as a nightmare was brought home to the author while attending an international conference on Chinese philosophy at the University of Cologne in June 2011.
- 2 The collapse of standards in USA universities has been demonstrated by Richard Arum and Joipa Roksa in *Academically Adrift: Limited Learning on College Campuses* (Chicago: Chicago University Press, 2011). On intellectual retardation of the young in

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- Britain, see Joseph Crace, 'Children are less able than they used to be', *The Guardian*, 24 January 2006, reporting on work of Professor Michael Shayer.
- 3 Bill Readings, *The University in Ruins* (London: Routledge, 1996).
 - 4 Sheldon S. Wolin, *Democracy Inc.: Managed Democracy and the Specter of Inverted Totalitarianism* (Princeton: Princeton University Press, 2008).
 - 5 'Apparatchik' was originally a Russian term meaning an 'agent of the apparatus', appointed for their political loyalty to the ruling elite although having little interest or even comprehension of the grand plans of this elite, and having no actual training for their areas of responsibility. The new apparatchiks advance their careers by serving their political bosses and ultimately, those who control the media and finance election campaigns.
 - 6 Konstantinos Tsoukalas, 'Globalization and "The Executive Committee": Reflections on the Contemporary Capitalist State', in *Global Capitalism Versus Democracy*, ed. by Leo Panitch and Colin Leys (Rendlesham: Monthly Review Press, 1999), pp. 56–75 (p. 70).
 - 7 See Sharon Beder, *Free Market Missionaries: The Corporate Manipulation of Community Values*, (London: Earthscan, 2006), especially p. 224.
 - 8 The growth of corporate propoganda has been analysed by Alex Carey in *Taking the Risk out of Democracy: Corporate Propaganda versus Freedom and Liberty* (Urbana: University of Illinois Press, 1997).
 - 9 On this and other efforts to close down the public sphere, see Clive Hamilton & Sarah Maddison, *Silencing Dissent* (Crows Nest: Allen & Unwin, 2007).
 - 10 In 2001, only 37.5 per cent of university staff were engaged in teaching (Simon Marginson, 'They make a desolation and they call it F.A. Hayek', *Australian Book Review*, 26 April 2004, p. 32).
 - 11 As James K. Galbraith pointed out in *The Predator State* (New York: Free Press, 2008), p. 16ff.
 - 12 Ghassan Hage, *White Nation* (Annandale: Pluto Press, 1998), p. 8f.
 - 13 See for instance, Arran Gare, 'The Neo-Liberal Assault on Australian Universities and the Future of Democracy: The Philosophical Failure of a Nation', *Conrescence*, 7 (2006), 20–40.
 - 14 For Green's political philosophy and its significance, see T.H. Green, *Lectures on the Principles of Political Obligation and Other Writings*, ed. by Paul Harris and John Morrow (Cambridge: Cambridge University Press, 1986), and the papers in *The New Liberalism*, ed. by Avital Simhony and David Weinstein (Cambridge: Cambridge University Press, 2001).
 - 15 David Boucher, 'Introduction', *The British Idealists* (Cambridge: Cambridge University Press, 1997), p. xxvii.
 - 16 See David Boucher, 'Practical Hegelianism: Henry Jones's Lecture Tour of Australia', *Journal of the History of Ideas*, 51(3) (1990), 423–452 and Marian Sawer, *The Ethical State? Social Liberalism in Australia* (Melbourne: Melbourne University Press, 2003). Also Gare, 'The Neo-Liberal Assault on Australian Universities'.
 - 17 Walter Murdoch, *The Struggle for Freedom*, rev. ed. (Melbourne: Whitcombe and Tombs Ltd, 1st ed. 1903), p. 236.
 - 18 *ibid.*, p. 238f.
 - 19 The difference between an extractive economy where development impoverishes the country and a productive economy where development enriches the country has been analysed by Stephen G. Bunker in *Underdeveloping the Amazon: Extraction, Unequal Exchange, and the Failure of the Modern State* (Chicago: University of Chicago Press, 1988).

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- 20 John West, Essay I: 29, cited by Patricia Fitzgerald Ratcliff OAM in ‘The Australians Are One: John West guiding colonial Australia to nationhood’, *The Distinctive Foundations of Australian Democracy*, Papers on Parliament Number 42, Department of the Senate, Canberra, Dec. 2004, p. 109.
- 21 See Erik S. Reinert, *How the Rich Countries Got Rich ... and Why Poor Countries Stay Poor* (New York: Carroll & Graf, 2007). This tradition includes the German historical and the American institutionalist schools of economics. The idea of ‘communities of communities’ was developed in Herman Daly and John Cobb Jr, *For the Common Good*, 2nd ed. (Boston: Beacon Press, 1994), ch. 9.
- 22 Murdoch, *The Struggle for Freedom*, p. v.
- 23 Quentin Skinner concluded that the British Idealists were the pinnacle of political philosophy. See his ‘States and the Freedom of Citizens’ in *States & Citizens: History, Theory, Prospects*, ed. by Quentin Skinner & Bo Stråth (Cambridge: Cambridge University Press, 2003), ch. 1. A similar view was expressed by Rex Martin in ‘T.H. Green on individual rights and the common good’, *The New Liberalism*, ch. 2.
- 24 Jared Diamond in *Collapse: How Societies Choose to Fail or Survive* (Camberwell: Allen Lane, 2005), ch. 13, saw Australia as one of the two countries in the world that could collapse due to environmental destruction.
- 25 See Aubrey Gwynn, *Roman Education, from Cicero to Quintilian* (Oxford: Clarendon Press, 1926), especially p. 84.
- 26 The classic study of this is Werner Jaeger, *Paideia: the Ideals of Greek Culture*, 3 vols, trans. by Gilbert Highet, 2nd ed. (New York: Oxford University Press, 1943–5).
- 27 Thucydides, *History of the Peloponnesian War*, trans. by Rex Warner (Harmondsworth, Penguin, 1972), II:40 (translation modified).
- 28 Cornelius Castoriadis, ‘The Greek and the Modern Political Imaginary’, *World in Fragments*, trans. and ed. by David Ames Curtis (Stanford, Stanford University Press, 1997), p. 113.
- 29 See H-I Marrou, ‘Education and Rhetoric’ in *The Legacy of Greece: A New Appraisal*, ed. by M.I. Finley (London: Oxford University Press, 1984), ch. 7 and Joy Connolly, ‘The Politics of Rhetorical Education’, in *The Cambridge Companion to Ancient Rhetoric*, ed. by Erik Gunderson (Cambridge: Cambridge University Press, 2009), ch. 7, especially p. 134. See also *Isocrates and Civic Education*, ed. by Takis Poulakos and David Depew (Austin: University of Texas Press, 2004).
- 30 See Cicero, *Pro Archia*, a defence of the arts through a defence of Archia, clearly indebted to Pericles ‘Funeral Oration’ in Thucydides, *History of the Peloponnesian War* in which Athenian *paideia* is extolled.
- 31 Cicero’s main ideas on education are found in *de Oratore*. On this and its context, see Gwynn, *Roman Education*, especially ch. 6, especially p. 101f.
- 32 *De Republica* I:28, translated by Gwynn, *Roman Education*, p. 122.
- 33 See Quentin Skinner, *Liberty Before Liberalism* (Cambridge: Cambridge University Press, 1998), p. 40.
- 34 On the medieval appreciation of the value of participatory politics of republican government, see James M. Blythe, “Civic Humanism” and Medieval Political Thought’ in *Renaissance Civic Humanism*, ed. by James Hankins (Cambridge: Cambridge University Press, 2000), ch. 2. See also, Annabel S. Brett, ‘Political Philosophy’ in *The Cambridge Companion to Medieval Philosophy*, ed. by A.S. McGrade (Cambridge: Cambridge University Press, 2003), ch. 12, and ‘The development of the idea of citizen’s rights’, in *States & Citizens*, ch. 7.
- 35 See Quentin Skinner, ‘The Rediscovery of Republican Virtues’ in his *Visions of Politics, Volume II, Renaissance Virtues* (Cambridge: Cambridge University Press, 2002), ch. 2.

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- 36 See Paul Oskar Kristeller, 'The Dignity of Man', *Renaissance Concepts of Man and Other Essays* (New York: Harper, 1972), pp. 1–21, especially p. 7. The term 'humanities' was taken from Cicero.
- 37 See P.F. Grendler, *The Universities of the Italian Renaissance* (Baltimore: John Hopkins University Press, 2002).
- 38 On this see Stephen Toulmin, *Cosmopolis: The Hidden Agenda of Modernity* (Chicago: Chicago University Press, 1994).
- 39 See Quentin Skinner, see his *Hobbes and Republican Liberty* (Cambridge: Cambridge University Press, 2008), especially ch. 5.
- 40 See Erik S. Reinert, 'The Other Canon: The History of Renaissance Economics' in *Globalization, Economic Development and Inequality: an Alternative Perspective*, ed. by Erik S. Reinert (Cheltenham: Edward Elgar, 2007), pp. 21–70. Reinert, a Norwegian, wrote his Ph.D. at Harvard Business School on early Australian economic policy.
- 41 Margaret C. Jacob, *The Radical Enlightenment: Pantheists, Freemasons and Republicans*, 2nd ed. (New Orleans: The Temple Publishers, 2003). See also, Jonathan I. Israel, *The Radical Enlightenment: Philosophy and the Making of Modernity 1650–1750* (Oxford: Oxford University Press, 2002).
- 42 On Herder's political philosophy see Arnd Bohm, 'Herder and Politics', in *A Companion to the Works of Johann Gottfried Herder*, ed. by Hans Adler and Wulf Koepke (Rochester: Camden House, 2009), ch. 12.
- 43 See Frederick C. Beiser, 'A Romantic Education: The Concept of *Bildung* in Early German Romanticism', in *Philosophers on Education: New Historical Perspectives*, ed. by Amelie Oksenberg Rorty (London: Routledge, 1998), pp. 284–99.
- 44 See *Fichte: Foundations of Natural Right*, trans. by Michael Bauer, ed. by Frederick Neuhauser (Cambridge: Cambridge University Press, 2000), p. 38.
- 45 While this term is usually translated as 'scholar' it is clear that Fichte had in mind what we would now call an intellectual holding an academic position.
- 46 *Fichte: Early Philosophical Writings*, trans. and ed. by Daniel Breazeale (Cornell: Cornell University Press, 1988), p. 146.
- 47 See Frederick Beiser 'Religion and Politics in *Frühromantik*', *The Romantic Imperative* (Cambridge: Harvard University Press, 2003), ch. 10.
- 48 Friedrich Schlegel, *Ideen* no.37, translated and quoted by Frederick Beiser, 'The Concept of *Bildung*' in Friedrich C. Beiser, *The Romantic Imperative* (Cambridge: Harvard University Press, 2003), ch. 6, p. 88.
- 49 See Daniel Fallon, *The German University: a Heroic Idea in Conflict with the Modern World* (Boulder: Colorado Associated University Press, 1993).
- 50 Readings in *The University in Ruins* (p. 7) argues that von Humboldt defined the form of the modern university.
- 51 See Hans-Joachim Petsche, *Herman Grassmann, Biography*, trans. by Mark Minnes (Basel: Birkhäuser, 2009), p. 143.
- 52 Manfred Frank argues that it is only by appreciating the influence of Schelling on Schleiermacher that Schleiermacher can be properly understood. See Frank, 'Metaphysical foundations: a look at Schleiermacher's *Dialektik*' in *The Cambridge Companion to Friedrich Schleiermacher*, ed. by Jacqueline Marina (Cambridge: Cambridge University Press, 2005), pp. 15–34, p. 18ff.
- 53 See Frederick Gregory, 'Kant, Schelling, and the Administration of Science in the Romantic Era', *Osiris*, 2nd Series, 5 (1989), 16–35.
- 54 John H. Zammito, *The Genesis of Kant's Critique of Pure Reason* (Chicago: Chicago University Press, 1992), p. 14.
- 55 Schelling's most important works are F.W.J. Schelling, *First Outline of a System of*

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- the Philosophy of Nature* [1799], trans. by Keith R. Petersen (New York: SUNY Press, 2004) and *System of Transcendental Idealism* [1800], trans. by Peter Heath (Charlottesville: University Press of Virginia, 1978).
- 56 Friedrich Schelling, *The Grounding of Positive Philosophy: the Berlin Lectures*, trans. by Bruce Matthews (New York: State University of New York Press, 2007), p. 107.
- 57 F.W.J. Schelling, *On University Studies* [1803], trans. By E.S. Morgan (Athens: Ohio University Press, 1966).
- 58 See Joseph Ben-David, *The Scientist's Role in Society* (Englewood Cliffs: Prentice-Hall, 1971), p. 116.
- 59 Wilhelm von Humboldt, *Humanist without Portfolio*, trans. by Marianne Cowan (Detroit: Wayne State University Press, 1963), p. 125f.
- 60 *ibid.*, p. 72.
- 61 *loc. cit.*
- 62 *ibid.*, p. 101.
- 63 *ibid.*, p. 329ff.
- 64 Marie-Luise Heuser, 'The Significance of *Naturphilosophie* for Justus and Hermann Grassmann' in *From Past to Future: Grassmann's Work in Context*, ed. by Hans-Joachim Petsche and others (Basel: Springer Basel, 2011), pp. 49–59 (p. 58). See also, Mircea Radu, 'Justus Grassmann's Contributions to the Foundations of Mathematics: Mathematical and Philosophical Aspects', *Historia Mathematica*, 27 (2000), 4–35, and Albert C. Lewis, 'H. Grassmann's 1844 *Ausdehnungslehre* and Schleiermacher's *Dialektik*', *Annals of Science*, 34(2) (1977), 103–62 and 'Unity of Logic, Pedagogy and Foundations in Grassmann's Mathematical Work'. *History and Philosophy of Logic*, 25 (2004), 15–36.
- 65 Humboldt, *Humanist without Portfolio*, p. 134.
- 66 *ibid.*, p. 135.
- 67 *ibid.*, p. 132.
- 68 *loc. cit.*
- 69 Jean-François Lyotard, *The Postmodern Condition: a Report on Knowledge*, trans. by Geoff Bennington and Brian Massumi (Minneapolis: University of Minnesota Press, 1984), p. 32ff. Readings, *The University in Ruins*, p. 65ff. For a critique of this argument, see Arran Gare, 'Democracy and Education: Defending the Humboldtian University and the Democratic Nation-State as Institutions of the Radical Enlightenment', *Conrescence: The Australasian Journal of Process Thought*, 6 (2005), 3–26.
- 70 Alasdair MacIntyre, 'Epistemological Crises, Dramatic Narrative and the Philosophy of Science', *Monist*, 60 (1977), 453–72.
- 71 See Joseph L. Esposito, *Schelling's Idealism and Philosophy of Nature* (Lewisburg: Bucknell University Press, 1977) and Marie-Luise Heuser-Kessler, *Die Produktivität der Natur: Schellings Naturphilosophie und das neue Paradigma der Selbstorganisation in den Naturwissenschaften* (Berlin: Duncker & Humblot, 1986).
- 72 Robert Ulanowicz in *Ecology: the Ascendent Perspective* (New York: Columbia University Press, 1997), especially p. 6 and *A Third Window: Natural Life beyond Newton and Darwin* (West Conshohocken: Templeton Foundation Press, 2009).
- 73 See Ilya Prigogine and Isabelle Stengers, *Order Out of Chaos* (New York: Bantam, 1984), p. xxixf.
- 74 On this, see David C. Korten, *When Corporations Rule the World*, 2nd ed. (Bloomfield: Kumarian Press, 2001). See also, *Global Capitalism Versus Democracy*, ed. by Leo Panitch and Colin Leys, and Sharon Beder, *Suited Themselves: How Corporations Drive the Global Agenda* (London: Earthscan, 2006). The notion of 'corporatocracy'

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- was coined by John Perkins in *Confessions of an Economic Hit Man* (New York: Plume, 2006).
- 75 This point is well made by Simon Head in ‘The Grim Threat to British Universities’.
- 76 As Leslie Sklair argued in *The Transnational Capitalist Class* (Oxford: Blackwell, 2001), especially p. 206ff. See also, Bo Stråth, ‘The state and its critics: Is there a postmodern challenge?’ in *States and Citizens*, ed. by Skinner and Stråth (Cambridge: Cambridge University Press, 2003), ch. 11.
- 77 See Thomas Prugh, Robert Costanza and Herman Daly, *The Local Politics of Global Sustainability* (Washington: Island Press, 2000).
- 78 See Arran Gare, ‘Toward an Ecological Civilization: The Science, Ethics and Politics of Eco-Poiesis’, *Process Studies*, 39 (1) (2010), 5–38.
- 79 See for instance, Stephen Boyden, Stephen Dovers and Megan Shirlow, *Our Biosphere Under Threat: Ecological Realities and Australia’s Opportunities* (Oxford: Oxford University Press, 1990).
- 80 On the destructive brutality of Australia’s settlers, see William J. Lines, *Taming the Great South Land: a History of the Conquest of Nature in Australia* (Sydney: Allen & Unwin, 1991).
- 81 John Anderson, *Education and Politics: Essays* (Sydney, Angus & Robertson, 1931), p. 55.
- 82 A.J. Baker, *Anderson’s Social Philosophy* (London: Angus & Robertson, 1979), p. 76.
- 83 Anderson, *Education and Politics*, p. 54.
- 84 *ibid.*, p. 60.
- 85 *ibid.*, p. 10.
- 86 See Michael Pusey, *Economic Rationalism in Canberra: a Nation Building State Changes its Mind* (Cambridge: Cambridge University Press, 1991).
- 87 As summed up by Zygmunt Bauman, *Globalization: the Human Consequences* (Cambridge: Polity Press, 1998).
- 88 For an analysis of the crippling effect of deconstructive postmodernists in Australia, see Boris Frankel, *From the Prophets Deserts Come* (North Carlton: Arena, 1992). Of their effect more generally, see Thomas Frank, *One Market Under God: Extreme Capitalism, Market Populism, and the End of Economic Democracy* (New York: Anchor Books, 2000), especially ch. 8.
- 89 Pierre Bourdieu, *The Field of Cultural Production*, ed. by Randal Johnson (Oxford: Polity Press, 1993), p. 41.
- 90 These observations are based on my own research on the careers of outstanding academics.
- 91 Carl Boggs, *Intellectuals and the Crisis of Modernity* (New York: SUNY Press, 1993), p. 97.
- 92 Michel de Montaigne, ‘On Voluntary Servitude’, in *Freedom Over Servitude*, ed. by David Lewis Schaefer (Westport: Greenwood Press, 1998), Appendix I.
- 93 Pierre Bourdieu, *Outline of a Theory of Practice*, trans. by Richard Nice (Cambridge: Cambridge University Press, 1977), p. 73.
- 94 The state of the humanities, social science and natural science in Australia is similar to the USA. See Jerome Kagan, *The Three Cultures: Natural Sciences, Social Sciences, and the Humanities in the 21st Century* (Cambridge: Cambridge University Press, 2009) and Boggs, *Intellectuals and the Crisis of Modernity*.
- 95 For the background to and effects of this, see Evan Jones and Frank Stilwell, ‘Political economy at the University of Sydney’, in *Intellectual Suppression: Australian Case Histories, Analysis and Responses*, ed. by Brian Martin, Ann Barker, Clyde Manwell and Cedric Pugh (Sydney: Angus & Robertson, 1986), pp. 24–38. Notoriously, the

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- dissident economist Steve Keen has been denied funding for research, and has explored the reasons why. See Steve Keen, 'Australian Research Funding', *Steve Keen's Debtwatch*, 26 October 2010, <http://www.debtdeflation.com/blogs/2010/10/26/australian-research-funding/> (viewed 16 December 2011).
- 96 On the trivialisation of sociology throughout the English speaking world, see Carlos Frade, 'The Sociological Imagination and its Promise Fifty Years Later', *Cosmos & History*, 5(2) (2009), 9–39.
- 97 Monash University's leading theoretical physicist, Peter Lloyd, was one of the first academics to be targeted for retrenchment after the effective elimination of tenure. According to a Monash professor of mathematics addressing the Association for the Public University convention 'Transforming the Australian University' (9 to 10 December 2001, Australian Catholic University, Melbourne), the Monash University mathematics department was halved, from fifty to twenty-five staff members between 1996 and 1998.
- 98 On the state of Australian philosophy, see Stephen Buckle, 'I'm smart, therefore I am', *The Australian*, 6 August 2008.
- 99 See for instance, Ben-David, *The Scientist's Role in Society*. Michael Polanyi's work, directed against the Stalinization of science, is also important in this regard.
- 100 The early stages of this were described by Greg Crough and Ted Wheelwright, *Australia: a Client State* (Harmondsworth: Penguin Books, 1982), a later stage by Linda Weiss, Elizabeth Thurbon and John Mathews, *National Insecurity: the Howard Government's Betrayal of Australia* (Crows Nest: Allen and Unwin, 2007).
- 101 'An Open Letter to the President from the Nation's Top Climate Scientist', *Grist*, 29 December 2008 (<http://www.grist.org/article/Dear-Barack-and-Michelle/PALL>).
- 102 For an example of the kind of economic thought that needs to be understood and defended, see Arild Vatn, *Institutions and the Environment* (Cheltenham: Edward Elgar, 2005). See also, Hugh Stretton, *Economics: a New Introduction* (London: Pluto Press, 2000) and Philip Lawn, *Frontier Issues in Ecological Economics* (Cheltenham: Edward Elgar, 2007).
- 103 See Ulanowicz in *Ecology and A Third Window*. On the importance of semiotics as a means to enable human culture to be understood as part of the Earth's semiosphere, see *Semiotics as a Bridge Between the Humanities and the Sciences*, ed. by Paul Perron, Leonard G. Sbrocchi, Paul Colilli and Marcel Danesi (New York: Legas, 2000) and Wendy Wheeler, *The Whole Creature: Complexity, Biosemiotics and the Evolution of Culture* (London: Lawrence & Wishart, 2006) and Arran Gare, 'The Semiotics of Global Warming', *Theory & Science*, 9(2) (2007), (<http://theoryandscience.icaap.org/volume9issue2.php>).
- 104 Referring to these as malignant forces is not mere rhetoric. As David C. Korten noted, 'cancer is less a metaphor than a clinical diagnosis of a pathology to which market economies are prone in the absence of adequate citizen and government oversight' in *The Post-Corporate World* (San Francisco: Berrett-Koehler, 1999), p. 15.