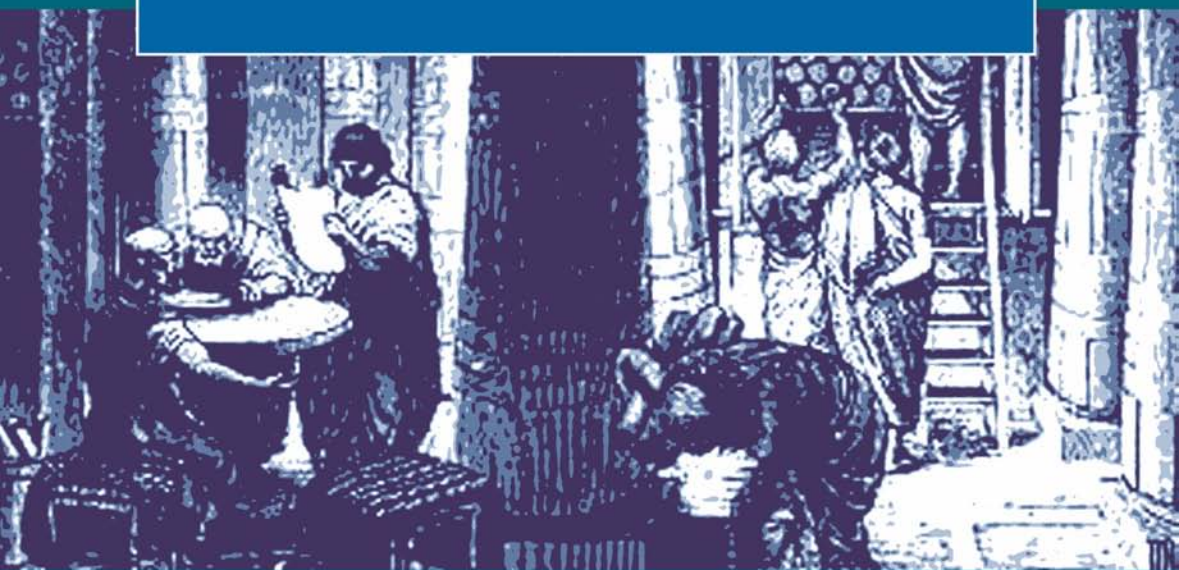


EDUCATIONAL FUTURES: RETHINKING THEORY AND PRACTICE

Knowledge Economy, Development and the Future of Higher Education

Michael A. Peters



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RETHINKING THEORY AND PRACTICE
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Knowledge Economy, Development and the Future of Higher Education

By

Michael A. Peters

University of Illinois at Urbana-Champaign, USA



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The cover picture is a picture of the Royal Library at Alexandria believed to have been founded at the beginning of 3rd century BC under Ptolemy II of Egypt. It was the centre of a university (perhaps the first) and research institution based on its estimated 500,000 scrolls including texts in the Homeric tradition.

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FOREWORD

Any historical overview of universities over most of the nineteenth and twentieth century would seem to indicate that they have been remarkably stable and durable social institutions. They have withstood many pressures, both internal and external, and have adapted to change without undermining their basic mission and structure. They have survived numerous wars, major recessions, significant changes in social attitudes, dramatic demographic shifts, and repeated attempts to curtail their power and influence. They have continued to thrive, grow in stature, and in their importance to communities. They have played a major role in providing nations their political and administrative elite. Their structural form has been broadly similar around the world, from elite universities such as Harvard, Oxford and Sorbonne to the impoverished public universities in the developing countries. Everywhere, so it seems, they have been important centers of not only scientific and technological education and research but also of critical debates about key social, cultural and political issues. Remarkably, these debates about their purposes and their economic, political and social role have broadly continued to revolve around the terms articulated by such thinkers as Kant, Humboldt and Newman.

There are many signs today, however, that all this is about to change – that the future of universities is at the crossroads. The very survival of many universities is under threat, while the future of most is decidedly precarious and unpredictable. Public universities in particular confront declining funds from the state, decreased level of popular support and competition from private universities and the corporate sector, both local and global. Morale among academics has never been so low, as resources to support them are slashed and as their autonomy is diminished. The long-established political understanding about their social role is increasingly compromised, as students demand a narrowly instrumental education that prepares them for jobs that barely survive even the enrollment period. While the issues of the quality, relevance and legitimacy of the programs they offer are widely debated, universities face historic demands for increased participation. This mix of pressures and demands is unprecedented, and it is difficult to be sure how universities will negotiate and imagine the various competing claims on their mission and their future.

The institutional success of universities in the past was largely due to their adaptability. They were able to accommodate new ideas and reform by borrowing heavily from a wide variety of philosophical and pedagogic traditions, reconciling, for example, the Enlightenment tradition with an economic pragmatism that viewed universities as a key engine for economic growth and capital accumulation. The importance universities attached to critical reason and reflection was a source of their autonomy, and of their contribution to the formation of national cultures in

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which literary and cultural canons were not restricted to the realms of élite high culture but extended to a diversity of cultural products and traditions in film, music and television. In this way, they engaged with changing social, economic and cultural conditions. It was this engagement that defined their culture of innovation and reform. Their formation thus involved a 'fine balance' between their commercial and cultural concerns. They recognized that universities needed to produce commercially useful knowledge but stressed equally the role they needed to play in social criticism and cultural development, in exploring and circulating ideas often uncomfortable to dominant groups. Their proud record of innovation in teaching and research, and also service to local, national and international communities, was based on this settlement.

Over the past twenty years or so, it is this balance that has become threatened, as commercial imperatives have become ever more dominant over cultural concerns, destabilizing the long-established political definitions about the social role of universities. The forms and causes of this destabilization are many and complex. They are driven by developments in information and communication technologies and globalization, transforming the ways we think about the processes of knowledge production, dissemination and consumption. The old industrial economy has given way to a new economy, structured around information as a commodity. The long-established disciplinary forms of knowledge around which universities were organized no longer appear so self-evident, as the focus has shifted from acquiring inherited knowledge to problem solving and innovation useful to the knowledge economy. The new discourses of global competition have resulted in university governance becoming increasingly corporatized and commercialized while curriculum has become vocationalized, concerned more with instrumental knowledge than with its cultural and critical dimensions. This has happened within the context of a dramatic shift in the ways in which the state now appears to view its links to public universities in particular, placing a greater emphasis on market dynamics, threatening the traditional link between the traditional mission of public universities and the public good.

In public universities in particular these changes have been associated with a rapid expansion in student numbers, which have more than doubled since the mid 1960s within the United States and more than quadrupled elsewhere. This increase represents an ever-increasing demand for post-secondary education, which is considered necessary for social mobility and for enhanced life-chances in an economy that increasingly requires highly educated workers to support information-based work. As a result, the demographic composition of universities has changed, introducing a complex cultural politics of difference on campuses. The typical student is no longer a young male from a well-off socio-economic background, but a female from humble origins, armed with the rhetoric of equal opportunity, and with political demands for affirmative access, ready to participate in the 'culture wars'. States, in the mean time, have been either unwilling or unable to meet the demands of this massification and to fund the expansion of universities with public resources, and yet university education is increasingly seen as fundamental to national and regional economic development.

This tension has been reinforced by a widely-held ideological commitment to smaller government and ‘user-pays’ principles. University education has consequently become a ‘private good’ serving the needs of individuals and less a ‘public’ or social good. With declining funds from the state, universities now require students to pay more of the cost of their education, changing the nature of the relationship between the university and students, encouraging students to think of themselves as clients or customers, who participate in an economic exchange for specifiable and job-related outcomes. In this context, knowledge and learning experiences are commodified, broken into chunks and distributed on the basis of the ability to pay. Market considerations have also become relevant to the importance attached to the disciplines, as I have already noted, with disciplines considered commercially useful, like applied sciences, information technology and business studies, sidelining the humanities and the social sciences.

Along with these shifts in pedagogy and curriculum, universities are also transformed as a result of major changes in their governance. The traditional university administration was conceptualized in bureaucratic terms, designed to support academic work, and the autonomy of academics to pursue their scholarship through teaching and research. This view is now being replaced by a new ideology of governance emphasizing more narrowly conceived notions of effective and efficient management. The new administrative discourse, borrowed from the corporate sector, emphasizes value for money, accountability, planning, cost-efficiency, resource allocation, performance indicators and selectivity. It is used to make budget cuts in support services for students and faculty, deregulate working conditions, attack the very notion of tenure and increasingly require academics and their departments to prove their worth by their contribution to economic development.

With declining financial support from the state, universities have had to increasingly rely on private sources of income, not only student tuition but also endowments and research links with the corporate sector. These links work in two related ways: they encourage universities to align their research and teaching to the commercial interests of the corporations and to become more entrepreneurial, emulating the organizational cultures found in the allegedly better-managed private sector. And they require universities to strengthen their central management group and incorporate academic leaders into management functions, in an effort to become quicker, more flexible and more responsive to changing economic conditions and demands, with greater capacity to re-engineer policies and programs rapidly and effectively. This does not mean that academic priorities are no longer important, but are now rearticulated in relation to their capacity to generate revenue.

This transformation is justified in terms of an ideology of globalization, driven largely by innovations in information and communication technologies, reshaping fundamentally the nature of economic activity, placing knowledge at the center of the changing modes of ownership, production, distribution and consumption. Knowledge has become an important ingredient of economic growth,

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needed to improve production techniques and generate profits. This has given rise to new models in the organization of academic work and priorities within universities, and competition from the corporate sector also interested in job-related training. Corporate universities such as Phoenix now represent a major challenge to the traditional universities. With the realization that knowledge is produced in a socially distributed manner, and depends fundamentally on collaborations and networks, universities now have to simultaneously compete with and cooperate and share resources with other centers of knowledge production. These centers are located and extend across the world, requiring universities to engage with global processes, both by cooperating with education systems abroad and by competing with them. Through the Bologna Accord, for example, European universities are now being reconstituted, designed to be much more responsive to the global mobility of capital, ideas and people. Universities in Asia are similarly re-conceptualizing themselves in order to meet the requirements of globalization and the knowledge economy.

It is now abundantly clear that an understanding of these epochal shifts is necessary if we are to imagine and develop a new understanding of the university –its fundamental purposes, its governance structures and its relationship with communities. To promote a wide-ranging debate about these matters would appear to be the basic motivation underlying this new book by Michael Peters. What is really important about this book is that it is informed by a deep understanding not only of the history of the modern university but also of the various sources and dimensions of the crises that universities currently confront. It argues that the contemporary challenges facing the university are linked largely to ways in which the knowledge economy is organized and to the manner in which a knowledge society is emerging. In this way, Peters brings together, as few other authors have, the historical and the contemporary, the economic and the social and the inherited and the imagined. In doing this, he draws on a range of theorists, from Lyotard and Touraine to Lessig and Benkler. His analysis problematizes the questions of ‘knowledge’, ‘economy’ and ‘development’, adopting both a critical approach but also pointing to the various possibilities that exist in the globally networked economy for universities to re-imagine a future in which they can make a stronger contribution to the development of more just, democratic, cosmopolitan futures. This then is a book whose optimism is rooted in a thoroughly critical analysis of the ideologies associated with the discourses of the knowledge economy. But it is also a book that recognizes the profound epochal changes around globalization, technology and the knowledge society do not pre-determine a destiny. It suggests that it is indeed possible to imagine the potential of the new information and communication technologies and the nature of knowledge society differently. It argues that a more socially and ethically productive role for the university is not only possible but also necessary.

Fazal Rizvi
University of Illinois at Urbana-Champaign
25 February, 2007

PREFACE AND ACKNOWLEDGEMENTS

I was fortunate to grow up in New Zealand's welfare state during the 1960s and 1970s which was infused with an ethos of equality but not immune to criticisms concerning 'big bureaucracy' or the lack of inclusiveness for Maori (the indigenous inhabitants) and for women. The welfare state provided me with a free education through primary and secondary school and then on through university. I am very much a product of those years and still passionately committed to principles of social democracy and the importance of higher education in its (dare I say) Enlightenment role that aims at the transformation of the individual. My identity through and through is related to the moral luck associated with growing up in a English-speaking country whose welfare provisions (at least for a young white male) afforded me every opportunity. I was given a 'studentship' which paid handsomely in those days and was enough to live on during term time. The studentship was traded against future teaching, year for year. There was one fly in the ointment. I wanted to study poetry—to be a *poet*—(at that time Dylan inspired a new lyricism) but I was counseled against this specialization in favor of a 'teaching' subject, geography. This proved to be a lucky break for at the Victoria University of Wellington the Geography department boasted some world experts with great experience in the field: Keith Buchanan, a Welshman who first specialized in the question of African 'underdevelopment' and later went on to write beautifully poetic books about the transformation of the Chinese earth under Mao; Harvey Franklin, from Manchester, who wrote an excellent book on the economy of the European peasantry; Warwick Armstrong, a geographer very wedded to Allende's Chile who taught at University of Santiago and also examined the question of regional development; Terry McGee who focused on S.E. Asian urban development. All but Franklin were Marxist of some persuasion or other and together they taught me the significance of spatial analysis—a question that has been overlooked in relation to the university up until postcolonial studies emphasized the significance of place for higher education.

New Zealand's university system, beginning with the establishment of the University of Otago in 1869, reflected its British models with some concession to its colonial status (there was a chair of Mining, for instance) and its examination system was controlled from Britain until well into the twentieth century. I attended three of the then seven New Zealand Universities (in order, the Universities of Victoria, Canterbury and Auckland) and completed degrees in geography, philosophy and education. I later taught at Canterbury and Auckland as well holding a position at the Auckland University of Technology, so far New Zealand's only 'technical' university. I also was invited on occasion to talk at the Maori University called Te Whare Wananga o Awanuiarangi when it first opened

PREFACE AND ACKNOWLEDGEMENTS

in 1992. Awanuiarangi is one of only three institutions designated as *wananga* under the Education Act 1989 and is dedicated to establishing an equal Maori intellectual tradition as well as paths to development. (A *wananga* is a publicly funded tertiary education establishment that provides education within a Maori cultural context). I had a long association with Maori working especially for northern tribes and particularly Ngapui in the 1980s in a range of projects designed to enhance the position of the Maori language within the school curriculum.

I was offered my first full time academic job as a lecturer at Canterbury in 1990 and two years later worked at the University of Auckland until 2000, when I was offered a personal chair in Education, only one of a few ever offered in the discipline. I was active in union politics first as a high school teacher and then later in the New Zealand university teaching union, acting as branch chairman and later as Academic Vice-President for the national union at the very point that new right university reforms were being forced into practice against joint action from university teachers and students. New Zealand universities, like other universities in the western world, had to face rising external pressures which came with massification and increased access, 'lifelong learning', continuing reductions in the level of state resourcing (on a per capita basis), and greater competition both nationally and internationally. Overall, since 1988, the public tertiary education system in New Zealand has been incrementally privatized: a regime of competitive neutrality has increasingly blurred the distinction between public and private ownership; the introduction user-pays policies has created a consumer-driven system; and recourse has been made to various forms of contract including 'contracting out' and the institution of performance contracting. Privatization involved reductions in state subsidy (and a parallel move to private subsidy), reductions in state provision, and reductions in state regulation.

After a decade of fighting the worst excesses of the reforms (from 1988 to 1998) in 2000 I moved to the University of Glasgow in Scotland, the fourth oldest university in the United Kingdom established in 1451 (after St Andrews, Oxford and Cambridge). This was a new experience and it put me in touch with the distinctiveness of the Scottish educational tradition and also the context of university reform under Tony Blair's administration. During my five years in the United Kingdom I saw the introduction of a user pays philosophy and student tuition fees. I also had the opportunity to visit and talk at many British universities. In my capacity as a research professor I had the opportunity of visiting universities in Germany, Sweden, Norway, Estonia, Portugal, Spain and elsewhere in Europe. I also had the opportunity to observe the Bologna process and the E.U. refashioning of higher education at close quarters.

In 2005 on the basis of an excellence hire position I was offered a professorial position at the University of Illinois at Urbana-Champaign where I have the good fortune to teach in conjunction with my colleagues Fazal Rizvi and Bill Cope, courses that focus on higher education and knowledge systems and, indeed, the rise of the modern research university. During my time at Illinois I have visited universities in the U.S., Mexico and Columbia, as well as South Africa. While at Auckland and Glasgow Universities, where I held a joint position for three years, I visited universities in China, Thailand, and Malaysia. I have good friends and colleagues at the Universities of Beijing and Wuhan.

These essays are a reflection of my university experience of a small national system, of visits to universities on every major continent and to a specialist interest in the question of higher education and its continuing relevance and significance in an age of knowledge capitalism. The essays come from different times and many have been previously published although not all in prominent or easily accessible journals. Most have been written during the early 21st century and some have not been previously published. Sometimes they have been published as an article and as a book chapter, and sometimes translated into other languages. I cite only the first publication details here. A version of Chapter 1 appears as ‘Disciplinary Knowledges of Knowledge Societies and Knowledge Economies’, *New Zealand Sociology*, 19, 28-49, 2004. Chapter 2 appears in *Social Work & Society*, 2, 2, pp, 160-172, 2004. Chapter 3 appears as ‘Globalisation and the Crisis of the Idea of the Modern University’, *Australian Universities Review*, 2 (1): 47-55, 1999. Chapter 4 appears in A. Scott & J. Freeman (Eds.) *Yesterday’s Dreams: International and Critical Perspectives on Education and Social Class*, Christchurch, University of Canterbury Press, pp. 298-317, 2002. Chapter 5 appears in J. Marshall (Ed.) *Poststructuralism and Education*, Dordrecht, Kluwer: 43-56, 2004. Chapter 6 appears as ‘The University and the New Humanities: Professing with Derrida’, *Arts and Humanities in Higher Education* 3(1): 41-57, 2003. Chapter 7 appears as ‘Urban and Regional Education Futures: The Knowledge Economy and Dreams of the Renewal of the Post-Industrial City’ in *The Praeger Handbook of Urban Education*, J. Kincheloe, K. Heyes, C. Rose & P. Anderson (Eds.), New York: Greenwood Press, 2006. Chapter 8 has not been previously published. Chapter 9 appears as ‘Higher Education, Development and the Learning Economy’, *Modern University Education (Chinese)*, 2 (92): 47-51, 2005. Chapter 10 appears in *European Journal of Education: Research, development and policies*, ‘The European University: between governance, discipline and network’ 41 (2): 225-244, 2006. Chapter 11 appears in *Reclaiming Universities from a Runaway World*, M. Walker & J. Nixon (Eds.). London & New York: Open University Press, 2004. Chapter 12 has not been previously published. Chapters 13 and 14 appear in the *South African Journal of Higher Education*, 2006 and Chapter 15 has not been previously published.

Finally, my thanks, first, to co-authors of Chapter 3, Peter Roberts, Chapter 7, Tim May and Chapter 13, Tina Besley; second, to my close colleagues and students at the Universities of Canterbury, Auckland, Glasgow and Illinois at Urbana-Champaign; third, last but not least, to Peter de Liefde of Sense Publishers, who has been supportive of my efforts to bring to light these selected essays.

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February, 2007

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INTRODUCTION

REVISITING THE UNIVERSITY IN POST-INDUSTRIAL SOCIETY

In 1969 Alain Touraine published his *La Société Post-Industrielle*. It was a work that was written and assembled from earlier essays in the optimistic and heady days immediately following the university crisis of May 1968—a series of events precipitated by student demands for democratic reforms and greater participation in university governance. For little more than two months the university crisis became a general crisis as students established liaison with workers and the greater population. Touraine, although historically too close to the events of 1968 and too preoccupied, perhaps, with the question of the French university, was to analyze the student movement in terms of crisis and conflict, asserting that the universities had entered a new phase of their existence. In clear, strong and prophetic terms, Touraine (1974: 13) wrote:

The liberal university belongs to the past. The inescapable question now is whether the university will become the locus of integration or of confrontation. In both cases grave dangers may threaten the creation of new knowledge.

Today, nearly fifty years later we can agree with Touraine that the age of the liberal university, indeed, has passed and answer the question that he originally posed by answering that the university is rapidly becoming ‘a locus of integration’. On re-reading Touraine’s text today we can see in the context of the ‘knowledge society’ – a concept he helped to fashion – the dangers he so clearly pointed to. After a period of hectic policy activity during the 1980s and 1990s driven by a new right ideology to restructure and reform higher education, we are in a position to re-examine Touraine’s original thesis and to see it in a new light.

He wanted to develop a sociology, the method of which was to question the social and cultural orientations and the nature of the new social conflicts and power struggles, on the assumption that economic processes were no longer to be viewed autonomously. While economic decisions and struggles no longer have the autonomy they had in earlier societies, paradoxically ‘post-industrial society’ is more driven by economic growth than any other. Capital accumulation and growth is no longer tied to production per se, rather it results from ‘a whole complex of social factors’. More than ever before, such growth depends on the creation of scientific and technical knowledge. His self-styled task is to recognise and delineate the new type of production; to outline the lines of new power and the new emerging social conflicts. This sociological task then differs from the older Marxist paradigm which insists on examining and charting ‘resistance by older forms of social organization and cultural activity’. In this context growth is viewed

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'as conditioned by the entire political process' than 'as simply dependent on economic processes operating almost independently of social control'. 'Sociological analysis', Touraine (1974: 6) argues, 'demonstrates the increasing dependence of the conditions for development on the entire structure of social organisation'. Under these conditions, social domination takes three major forms: social integration, cultural manipulation and political aggressiveness. The first form refers to the way that the production process pressures the individual into participating 'not only in terms of ... work but equally in terms of consumption and education'. Cultural manipulation is a form of social domination which socially reproduces the requisite needs and attitudes for necessary conditions of growth in a changed environment. Education is no longer considered an autonomous public space; it has become the major locus for meeting the new post-industrial demands for certain types of advanced industrial skilled labour.

Touraine's historical immediacy led him to focus at that time on the student movement as the central instance of the new social conflicts typical of an emerging 'post-industrial society'. He was possibly correct in pursuing this orientation at that early stage of the post-industrial society. Certainly since that time, Western industrialized countries have been seen to experience the rise of new social movements - what Habermas (1981) has called 'sub-institutional, extra-parliamentary forms of protest' and French post-structuralist thinkers refer to as 'outsider groups', or more widely, as the 'excluded other'. It is interesting to note that Habermas (1981) concurred with Touraine in acknowledging that these new social movements originate in conflicts which, in Habermas' vocabulary, 'arise at the seam between the system and the life-world.' The new conflicts, Habermas maintains, in terms similar to Touraine writing a decade earlier, occur not in areas of material reproduction but rather in areas of 'cultural reproduction, social integration and socialization'. They cannot be alleviated, what is more, by compensations that the welfare state can provide. In this sense they 'deviate from the welfare state pattern of institutional conflict over distribution' and concern, rather, conflict over the grammar of forms of life.

In Touraine's analysis, young people and particularly students are given a privileged 'new class' position. They are deemed to be in a better position to resist than other groups. In a period of rapid technological change, youth is the group least affected by obsolescence, and while it may be susceptible to 'dependent participation', it is also most capable of opposition to technocratic reason (my gloss). When Touraine combines his observations of the emancipatory potential of youth with an analysis of the changes facing the university in post-industrial society, his position takes on the hue of an historical promise. The university, he asserts, is becoming 'the privileged center of opposition to technocracy and the forces associated with it' (1974: 13).

THE POSTMODERN DEBATE: THE UNIVERSITY AND TECHNOSCIENCE

The issue of whether the West is experiencing an epochal transformation has received a great deal of attention and interest among a range of social theorists and philosophers. Some have sought to provide an essentially sociological account,

speaking broadly of the ‘post-industrial society’ or of some equivalent notion – ‘the knowledge society’, ‘the service society’, ‘the technetronic era’ and so on. Others have focused more exclusively on the economic transformation of capitalism identifying late or ‘consumer’ stage. In this regard there has been talk both of ‘the post-economic society’ (Herman Kahn), ‘the post-scarcity society’ (Murray Bookchin) and of ‘disorganised capitalism’ (Claus Offe), or ‘post-Fordism’ (Bob Jessop). Others have concentrated on a predominantly cultural analysis, focusing attention on ‘the media society’, the growth and influence of mass communications, ‘mass’, ‘popular’ or ‘consumer culture’. In this context, the term ‘post-modernism’ signifies at the cultural and social levels, changes in Western society of equal and related importance to those changes recognized on economic and political levels.

During the 1980s and 1990s, in the English-speaking world at least, debate centred itself around the combined notions of ‘modernity’ and ‘post-modernity’ - notions which attempt to relate transformations currently being experienced by Western societies to broader philosophical and historical issues concerning a re-evaluation of Enlightenment values and a critique of ‘the philosophy of consciousness’, the tradition of subject-centred reason. The post-structuralist critique of reason, in particular, has been received as a massive and provocative assault on the humanism and rationalism of the Enlightenment. The critique of the celebratory, ‘technocratic’ version of the post-industrial society can be extended and strengthened by adopting the post-structuralist concept of ‘techno-science’ as it has been used by both Jean-François Lyotard (1984) and Jacques Derrida (1983). In this way Touraine’s original critique is both preserved and deepened. It is ‘deepened’ for, while Touraine’s original analysis alluded to the idea that Western advanced industrial societies are experiencing economic and social transformations which relate historically to a set of deeply embedded cultural values crystallized during the Enlightenment, he does not explicitly examine this thesis or interrogate it in philosophical terms.

The notion of ‘techno-science’ for Lyotard (1984: 41) originates in two important changes that have taken place regarding the essential mechanisms of scientific research:

A multiplication in methods of argumentation and a rising complexity in the process of establishing proof.

The first is tantamount to a challenge to classical reason. According to Lyotard, the principle of a universal metalanguage required for demonstrating the truth of denotative systems has given away to a plurality of formal and axiomatic systems. Generalizing from Gödel’s incompleteness theorem Lyotard argues that all formal systems have internal limitations. The historical shift from a universal metalanguage (rationality) to a plurality of languages and knowledges which emphasises the development of different rationalities, represents a breaking apart of the notion of classical reason. Lyotard asserts that scientific research uses methods outside the concept of classical reason mentioning the growth of machine languages, the matrices of game theory, new systems of musical notation, systems

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of notation for nondenotative forms of logic, the language of the genetic code, graphs of phonological structures and so on (see Peters, 1989).

The second development, the production of proof, has fallen under the control of another 'game', that of technology. This 'knowledge game', as opposed to that of science which has its goal 'truth', follows the principle of optimal performance, its goal is efficiency rather than truth (the denotative game) or justice (the prescriptive game).

Lyotard (1984: 58), in an analysis which borrows selectively the concept of language games from the later Wittgenstein, thus attempts to demonstrate the way in which 'progress' in knowledge is subordinated to investment in technology.

since performativity increases the ability to produce proof, it also increases the ability to be right: the technical criterion, introduced on a massive scale into scientific knowledge, cannot fail to influence the truth criterion.

A new historical dynamic is set up between 'being right' and research expenditure, especially in the new information science areas of the technology of data storage and retrieval systems. The mutually self-reinforcing dynamic of science and technology, where rates of reinvestment are tied to applied solutions, sets up 'an equation between wealth, efficiency and truth' (Lyotard, 1984: 45) where science has become the major force of production, 'a movement in the circulation of capital'.

In these very stark terms it is no longer possible to talk of the enterprise of 'science' separate from its institutional sites and networks of power. It is no longer possible to talk of science in transcendental or ahistorical terms, divorced from institutional sites or from the wider policy networks. The distinction between 'science' and 'technology', in other words, has collapsed and now in true post-modernist terms, it is only possible to represent these developments as the historical convergence and progression of the conglomerate 'techno-science'.

Lyotard's (1984) analysis of 'techno-science' is at the heart of his description of the 'postmodern condition', where the traditional legitimating 'metanarrative' of the speculative unity of knowledge and its humanist emancipatory potential have allegedly fallen away to reveal knowledge and power as two sides of the same question. It is in this context that Lyotard (1984: xxv) makes a series of provocative claims concerning the future of the university which at 'this very postmodern moment', he claims, may be nearing its end while the polytechnic institute may just be beginning.

Derrida's (1983) account is not less uncompromising. While his source for critique is characteristically Heideggerian, his quarry is also the notion of reason and the question whether it still provides the necessary legitimation or *raison d'être* for the university institution. The problem of the grounding of the principle of reason and the university institution, which hides the question of being and masks the interpretation of the essence beings as objects, is the place where Derrida introduces the concept of 'technoscience'. He asserts:

Now that institution of modern techno-science that is the university ... is built on the principle of reason and on what remains hidden in that principle (Derrida, 1983: 10).

The concrete problems assailing the university each refer back to this problem of the grounding or foundation of reason. The politics of research and teaching can no longer be reduced to a problematic centred on the nation-state but must take into account 'technomilitary networks that are apparently multi- or trans-national in form' (Derrida, 1983: 11). In this respect, the distinction between applied and basic research has broken down. Within post-modernity it is no longer possible to distinguish the principle of reason from the idea of technology. Derrida (1983: 12) concludes:

One can no longer distinguish between technology on the one hand and theory, science and rationality on the other. The term techno-science has to be accepted ...

The Kantian distinction between the 'technical and the 'architectonic' has been surpassed in historical terms. What is more, the military and the state can invest in any sort of research at all for now control and censorship are exercised more directly through 'limiting the means' or 'regulating the support for production, transmission and diffusion'. In addition, external forces are intervening within the university. Presses, foundations, private institutions, 'think-tanks' and the mass media intrude in the politics of the university in a characteristically novel way. Derrida (1983: 14) suggests the concept of informatization is the 'most general operator here' which 'integrates the basic to the oriented, the purely rational to the technical'.

Derrida's Heideggerian reading arrives at similar themes, concerning the threats currently facing the university, as Lyotard. Their starting points differ as do their sources of inspiration, but their conclusions coalesce. While Derrida does not explicitly tie his analysis to 'the post-industrial society' or indeed, to 'the post-modern condition' as Lyotard does, the implicit signs are obvious: the separate accounts converge in a rendering of the concept of 'techno-science', its historical effects on 'the principle of reason' and the dangers it represents for the future of the university.

The lessons and strategies to the university that follow in some sense from this combined critique relate to the original concerns of Touraine: the possibilities of resistance and the dangers which accompany the creation of new 'techno-scientific' knowledge. In Touraine's terms, the university has become 'a locus of integration' through what can be acknowledged as the collapse of 'the technical' and the 'architectonic'; the integration of 'science' and 'technology' into the conglomerate 'techno-science'. This concept represents a differentiated constellation of reason(s), unified only in their imperative to conform to the optimal efficiency of the system, and seen to be the historical development and outgrowth of a universalist, rationalist impulse and ideology. It also represents the creation of a new concept of culture symbolized variously as 'information culture', as the 'informatization of society' or, more broadly, as 'communication culture'.

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Higher education and universities are seen as one of the principal means for creating the new culture.⁶ The neoliberal functional perspective ‘teaches’ us that the values of optimal performance and efficiency, which are represented in the ‘convenient’, ‘immediate’ and ‘transparent’ processing and production of mass information and communication, are the necessary values to guide the process of societal modernization.

The response to this situation of Derrida and Lyotard is similar. Derrida (1983: 17) invokes a new responsibility which accompanies the ‘rendering of reason’. The ‘community of thought’ represented by the university must relearn to ‘interrogate the essence of reason and of the principle of reason’ to ‘draw out all the possible consequences of this reason’. He comments further:

It is not a matter simply of questions that one *formulates* while submitting oneself ... to the principle of reason, but also of preparing oneself thereby to transform the modes of writing, approaches to pedagogy, the procedures of academic exchange, the relations to other languages, to other disciplines, to the institution in general, to its inside and its outside.

Derrida (1983: 17) argues that the new responsibility of ‘thought’ cannot fail to be suspicious of a kind of professionalization of the university ‘which regulates university life according to the supply and demand of the marketplace and according to a purely technical ideal of competence’.

Lyotard (1984: 18) is no less unequivocal. He asserts that the prime pedagogical task is ‘an apprenticeship to resistance’ and describes such resistance in terms akin to Derrida’s and reminiscent of Touraine’s:

Resistance against the academic genres of discourse to the extent that they forbid the reception of ‘is it happening that ...?’, against the way thought is treated in the new postmodern technologies insofar as they express the most recent application of capitalist rules to language, resistance against every object of thought which is given to be grasped through some ‘obvious’ delimitation, method or end.

These reflections require constant and active reinterpretation. In a strong sense, both Lyotard and Derrida suggest that the very future of the university critically depends on how successfully it carries out the task of its own self-examination and along with it, the responsibility for the scrutiny of reason in all its historical forms.

NEOLIBERALISM AND THE KNOWLEDGE ECONOMY

In the late 1980s Jürgen Habermas (1987: 7) alluded to the way in which a neo-conservative, ‘functionalist’ interpretation currently dominates the realm of educational policy-making in the west. He claims,

Universities present themselves as part of a system requiring less and less normative integration in the heads of professors and students the more it

becomes self-regulating via systemic mechanisms and the more it orients itself to the environments of the economy and the planning administration.

He concluded that what neo-conservatives today view as a ‘realistic reorientation’ of educational policy can be seen as a recession phenomenon in the area of educational planning. It is to be explained, he suggests, in purely economic and political terms.

After Nietzsche, philosophical critique of the Western university has developed along two interrelated lines: the first, pursued by Weber and continued by Heidegger, Jaspers, Lyotard and Bourdieu, emphasized the dangers of economic interest vested in the university through the dominance of *technical reason*; the second, initiated by members of the Frankfurt School and developed differently by Foucault, traces the imprint and controlling influence of the state in the academy through the apparatus of *administrative reason*. With the rise of the ‘neoliberal university’ these two forms of reason come together in a new way, first, through capitulation of norms of liberal humanism and the Kantian ethical subject to the main articles of faith underlying the revitalization of economic rationalism and *homo economicus*, and, second, through the imposition of structural adjustments policies of the IMF during the 1980s with devastating impacts of universities in the developing world. Neoliberal universities, with little self-reflection, have been harnessed in service to the ‘new economy’ under conditions of *knowledge capitalism* that raises issues of intellectual capital, the ownership of the means of knowledge production, and depends upon the encouragement of all forms of capitalization of the self. In the age of global terrorism, when traditional rights are being curtailed and eroded, the neoliberal university is content to pursue business as usual.

Merle Jacob and Tomas Hellström (2000) in their ‘Introduction’ to *The Future of Knowledge Production in the Academy* comment that three important developments have strongly impacted on the university research system: the shift from national science systems to global science networks; the capitalization of knowledge; and, the integration of academic labour into the industrial economy, ‘also known as the coming of the knowledge society’ (p. 1). These developments, in large part, reflect the changing nature of capitalism within a more integrated world economy—in particular, the emergence of a knowledge capitalism and education considered as a form of knowledge capitalism (Peters & Besley, 2006; Peters & Roberts, 1999)—and the force of the neoliberal project of globalization (Olssen, 2001). As a consequence it has become possible to talk of new forms of knowledge production. Lifelong learning and work-based learning are, in fact to a large extent, policy creations based upon the recognition of these developments. Perhaps, of all the debate that has taken place around these changes the distinction between Mode 1 and Mode 2 knowledge developed by Michael Gibbons and his colleagues (1994) has become a standard shorthand and dominant representation.

As Jacob and Hellström (2000: 2) argue:

In the *New Production of Knowledge*, Gibbons and his colleagues make two claims that have become symbolic representations in the debate about the future of the academy. The first is that the nature of knowledge

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production is being transformed from Mode 1 (disciplinary, university-centred process) to Mode 2 (a transdisciplinary-based knowledge production in which academics operate with users and stakeholders to produce knowledge at the site of its application). The second is that this Mode 2 process is superior to Mode 1. From a sociological perspective, the symbolic significance of these two claims is easily explained. They serve as a convenient banner for collecting issues ranging from epistemology to labour politics in the university, and they may also be read as legitimizing the decline of the university as the central site of knowledge production.

Gibbons (1998: 5) in a paper to the UNESCO World Conference on Higher Education in 1998, clarifies his position, thus:

It is my contention that there is now sufficient evidence to indicate that a new, distinct set of cognitive and social practices is beginning to emerge, and that they are different from those that govern Mode 1. These changes appear across the research spectrum and can be described in terms of a number of attributes which, when taken together, have sufficient coherence to suggest the emergence of a new mode of knowledge production. Analytically, these attributes can be used to allow the differences between Mode 1 and Mode 2 to be specified.

Gibbons (1998) argues that in contrast to Mode 1 where problems are generated and solved in terms of the interests of an academic community, in Mode 2 knowledge is produced in a context of application and problems arise out of that context. He goes on to indicate that where Mode 1 is disciplinary, Mode 2 is transdisciplinary. The former is 'characterized by relative homogeneity of skills' whereas the latter is characterized by their heterogeneity. These changes in the production of knowledge have clear implications for organizational forms for Mode 1 the old hierarchical model has maintained its form. In Mode 2, by contrast, 'the preference is for flatter hierarchies using organizational structures which are transient'. Thus, Mode 2 is 'more socially accountable and reflexive' because it 'involves a much expanded system of quality control' including 'a wider, more temporary and heterogeneous set of practitioners, collaborating on a problem defined in a specific and localized context'.

Gibbons (1998) proceeds to identify the following characteristics of knowledge production in Mode 2. He lists them as follows: (1) Knowledge is produced in the context of application; (2) It is transdisciplinarity; (3) It is characterized by heterogeneity and organizational diversity; (4) It demonstrates enhanced social accountability, and; (5) Has developed a more broadly based system of quality control. An important question concerns the *nature* of evidence that Gibbons presents, the economic perspective he adopts and the analytical framework he develops. First, we should remember that Gibbons presented the paper as part of the World Bank contribution, and second, that the underlying assumptions reflect a World Bank economic perspective which considers change in higher education deriving from shifts in certain demand and supply factors. Third, the analytical

framework of Mode 1 and 2 knowledge systems is developed to examine the history of massification in higher education and the nature of competitiveness in a global economy. He mentions the key empirical changes as: diversification of higher education and ‘the centrality of knowledge and intellectual capital in the innovation process brought about by globalising processes.’ It should be clear that Gibbons adopts a neoclassical economic perspective on knowledge, even although he does not acknowledge its sources. His position is theoretically skewed and the nature of the evidence is both limited and debateable. He provides little in the way of empirical studies or analyses of data. The theory he puts forward is certainly underdetermined of the evidence and, it could be argued, functions more as an implicit neoliberal World Bank policy prescription.

The analytical framework itself is open to question on a number of fronts. Steve Fuller (2000: xii) summarises a host of criticisms when he comments:

The most pernicious feature of the ‘Myth of the Modes’ is that the two modes are seen as not merely mutually exclusive, but also jointly, exhaustive – that is, not admitting of other possibilities.

The alleged exclusivity and exhaustivity of the distinction echoes a range of traditional distinctions in philosophy of science that have become untenable: that between the context of discovery and justification, and that between scheme and content. We might also question the extent to which such a generalized distinction captures the emerging economy of disciplines in cultural studies (see Peters, 1999) or whether it is really fine-grained enough to describe empirically the actual disciplinary distribution of academic knowledges.

In the liberal university purportedly knowledge was pursued for its own sake and teaching was informed by a form of scholarship—a product of Renaissance humanism—that developed the culture of literacy. In addition, the ideal of the disinterested community of scholars pursuing truth for its own sake including sharing both the way of life and the results of scholarship with young members who were deemed worthy of being initiated into the community. This, in part, comprised the ideology of liberal humanism that infused the ethos of the medieval university and propelled it into the modern age. With the birth of the research university beginning with the establishment of the University of Berlin in 1810, the notion of scholarship became increasingly restricted to the humanities as ‘science’ and ‘research’ took pride of place. In its modern phase teaching ideally was still informed by research and the two were seen as inextricably bound together, especially at the doctoral level. It is only since the mid 1990s, with the growth of the Internet and ICT that universities have been reconceptualized as a foundation institution of the ‘knowledge economy’ or ‘learning economy’ where the emphasis has fallen on the code words ‘speed’, ‘utility’ and ‘performance’. The ‘fast capitalism’ of the knowledge or learning economy has merged with features of new public management and managerialism of the 1980s to create the new ideology of knowledge capitalism, which has the power to radically transform and redefine interrelationships among teaching, research and scholarship for the Western university.

THE NEOCONSERVATIVE CRITIQUE OF THE LIBERAL UNIVERSITY

The nature of the liberal university in the U.S. became a site for the bitterness and acrimony of the culture and science wars of the 1980s and 1990s. Allan Bloom's (1987) *Closing of the American Mind* seemed to fuel a spate of different works from the Right aimed at the so-called 'illiberal university' that was untrue to its Platonic origins and infected by Marx and Nietzsche and their intellectual progeny. Bloom's conservative critique signalled for him not only a crisis of the university and a devaluation of the Great Books of Western Thought but more broadly a crisis of U.S. society which had become afflicted with moral and cultural relativism. Bloom's book appeared at the beginning of a period of renewed controversy regarding the politics of universities and their effects on the 'American mind', and therefore not just American politics and culture but American identity and values.

This was a period that had consolidated some of the political gains of the later 1960s and 1970s. Of course, the 1960s counter-culture revolution was not confined to the U.S. or the West; movements that began in the U.S. and elsewhere spread rapidly to South America and the Eastern bloc. The American civil rights movement under Martin Luther King Jr. initiated protest action to end the official segregation and disenfranchisement of African-Americans, and later produced radical groups such as Black Power movement, Black Panther Party and Black Muslims. 'Postcolonialism' was coming of age at least in the sense that many countries in Africa and Asia had recently received their independence and the original authors such as Frantz Fanon and Aime Cesaire had been rediscovered. It was also the beginning of protest against apartheid in South Africa. In this regard we should not forget the 'race riots' in Watts (34 people killed in 1966), Detroit (1967), and Cleveland. This era was also the beginning of the official recognition of multiculturalism as a policy (although actual policies did not emerge until the early 1970s).

The 1960s also heralded an age of mass protest against the Vietnam War and U.S. foreign policy in the late 1960s which grew out of the 1950s 'peace movement' and CND that radicalized a generation of student-youth, based mostly in universities, that eventually led to the shootings at Kent State University in May, 1970 (where 4 students were killed and many others wounded by the National Guard). In this connection, we should also note the Free Speech movement that began at Berkeley in 1964 emphasizing student's rights to free speech and academic freedom, and protesting against a ban limiting political activities. Associated with these movements—Black and student movements—the sixties also saw the birth of the New Left, which was an imported rhetoric that had little basis in the labor movement or, indeed, Marxist politics on the ground but, nevertheless inspired student protest and linked the U.S. with movements elsewhere developing a significant global civic awareness.¹

Second-wave feminism took root and initiated action to improve women's rights and gender equality. This period in feminism saw the development of radical feminist theory that theorized patriarchy and held CR groups among women across class divisions to focus not only on economic equality, sexual harassment, maternity leave, and affirmative action but also greater control over women's health and sexuality, including 'reproduction politics', 'pro-choice', radical

lesbianism and sexual experimentation. The women's movement coincided with the birth of the gay rights movement which sought greater equality for lesbians, gays, bisexuals and transgenders. The Stonewall riots in New York in 1969, involving violent conflict between police and homosexuals in a Greenwich Village gay bar is generally taken as the beginning of modern gay rights, leading to the formation of the Gay Liberation Front, gay pride celebrations and marches, and a new era of sexual politics that questioned gender identity, 'normalcy' of sexual orientation and the extent of societal homophobia.

Informing these movements and being shaped by them, the sixties became synonymous with emergent cultural forms, especially revolving popular music and the rapid growth of youth subcultures. This 'alternative culture' was to some extent the inheritor of the 1950s experimentation, Beat Generation, and perceived 'teenage crisis'. Musically, the era is perhaps best symbolized by Bob Dylan's 'The Times They Are A-Changing' which served a rallying cry. Dylan, drawing on the American folk tradition symbolized by Woody Guthrie, provided a new lyricism combining poetic and philosophical elements that commented on what was happening and challenged the political status quo.² His folk protest music gave way to rock 'n' roll, a genre that developed in the South during the 1950s combining elements of blues, jazz, rhythm and blues, boogie woogie and also aspects of gospel, and country and western. The first generation of Bill Haley, Elvis Presley, Fats Domino, Little Richard, Chuck Berry and Jerry Lee Lewis of the later 1950s gave way during the 1960s to the British rock invasion of the Beatles, the Rolling Stones, the proliferation of youth subcultures, a youthful rebelliousness and experimentation with drugs, sex and music. These developments in music were, of course, echoed in the whole range of arts, architecture, humanities, TV, film and the new communication technologies, and, indeed, the social sciences.

These cultural sea-changes resulted in a number of changes to U.S. universities not least those that helped to restructure the humanities and social science disciplines and thus the university curriculum that saw the emergence of Black studies, feminist studies, critical legal studies, media studies, multicultural studies, global studies and so on (see Peters, 1999). Together with the strong influence of structuralist and poststructuralist philosophies and modes of analysis that quickly attained the status of mega-interdisciplinary paradigms in the 1970s and 1980s, these developments remoulded the humanities and social sciences. Poststructuralism, often perceived as anti-structuralist and anti-Marxist, produced a new Nietzsche and Heidegger and projected them into the U.S. academy as a basis for understanding a host of French thinkers including Michel Foucault, Jacques Derrida, Jean-Francois Lyotard, Gilles Deleuze, Julia Kristeva, and Luce Irigaray.

Many of the conservative critiques that emerged in the 1980s and 1990's constituted a savage and deliberate reaction against the counter-culture of the sixties and its consolidation in U.S. student and academic cultures in the 1970s. Much attention focused on political correctness, the culture wars, relativism, feminism, rock music, race and ethnicity, and identity politics. *The Closing of the American Mind* bloomed into a thousand flowers on the Right including Roger Kimball's (1990) *Tenured Radicals: How Politics Has Corrupted Our Higher Education*, Dinesh D'Souza's (1991) *Illiberal Education: The Politics of Race and*

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Sex On Campus, Richard J. Ellis (2000) *The Dark Side of the Left: Illiberal Egalitarianism in America* and David Horowitz's (2003) *Left Illusions: An Intellectual Odyssey* and *The Professors: The 101 Most Dangerous Academics in America* (2006). These critiques attacked not only the new curriculum but also the set of academic practices that had resulted as part of the counter-cultural movement. It was alleged, for instance, that affirmative action policies virtually guaranteed the future of minority students. It was argued that the emphasis on 'multiculturalism' denigrates the western tradition and encourages a form of democracy that deviates from liberal pluralism. It attacked identity politics and the influence of cultural studies that questioned western science and culture. It questioned views of the western tradition that attributed its Greek origins to black Africa.³ It railed against the prohibition of free speech and coined a whole literature against 'politically correctness.'⁴ It chastized the onslaught against moral and cultural values associated with the west under the guise of impartiality to differing points of view.

These critiques often lashed out against 'postmodernism' per se and the postmodern university, criticizing the resulting liberality as illiberal. (This is not to deny that critiques were also mounted from the Left). In essence, the conservative critiques on the university were often disguised critiques of liberalism insofar as liberalism allegedly has led to forms of relativism—moral, cultural and cognitive. Most often these conservative critiques referred to relativism its alleged multicultural form. We do not have to go far to find the mainspring of this form of conservative critique especially in the U.S. Of course, the problem of relativism goes all the way back to Plato's *Theatetus* where Socrates argues against Protagoras and what is know as the 'measure hypothesis'—'Man is the measure of all things: of things that are, that they are; of things that are not, that they are not.'⁵

For conservative thinkers and especially those oriented to the ancients Plato's dialogue has special significance as the basis of asserting a uniquely privileged standpoint, that is, denying that knowledge, meaning or values are relative to a particular framework or standpoint or culture. The privileged standpoint for conservative thinkers is the Western tradition or some version of it—the canon (the Great Books) and the curriculum—also usually based upon a set of assumptions concerning the unity, purity, origins and uninterrupted historical continuity of 'the West.'⁶ In the debate about the university the term relativism used in this generally sense has been levelled as a criticism of postmodernism (and social constructivism) which is attributed the view that the meaning of a text (or text analogue) is in its appropriation and reading and therefore no 'true' meaning and no meaning of the text outside its reading. The problem of relativism and truth extends beyond the text and has also assumed great importance in the science wars with arguments over 'objectivity' and cultural readings of science.

THE ARGUMENT AND ORGANIZATION OF THIS BOOK

This book demonstrates the relevance and significance of a poststructuralist (for want of a better term) orientation to questions of 'knowledge', 'economy' and 'development'. It adopts a critical approach to these issues and yet it is at the same still relatively optimistic about the opportunities for universities as public

institutions to survive in the global networked economy. Here my belief is in how new information technologies make it easier for individuals to collaborate in producing knowledge, information and cultural goods. These new technologies are reshaping opportunities for national, social and cultural action and they offer a vision of what society might be like if we allow these technologies to flourish. There exists now a substantial body of work by Larry Lessig, James Boyle, Pamela Samuelson, and Yochai Benkler on the construction of the intellectual commons, the social production of knowledge and a new global public space or infrastructure that advances a theoretical orientation that brings together the political economy of copyright with internet policy, telecommunications regulation and intellectual property as interrelated parts of a broader political and economic vision.

We now live in a socially networked universe in which the material conditions for the formation, circulation, and utilization of knowledge and learning are rapidly changing from an industrial to a networked information and media-based economy. Increasingly the emphasis has fallen on the ‘learning economy’ and on improving learning systems and networks, and the acquisition of new literacies as a central aspect of development considered in personal, community, regional, national and global contexts. These mega-trends signal both changes in the production and consumption of symbolic goods and also associated changes in their contexts of use. They accent the ‘learner’s’ co-production and active production of meaning in a variety of networked public and private spaces, where knowledge and learning emerge as new principles of social stratification, social mobility and identity formation. Higher education will not remain unaltered by these changes.

Communications and information technologies not only diminish the effect of distance they also thereby conflate the local and the global, the private and the public, ‘work’ and ‘home’. Digitalization of learning systems increases the speed, circulation and exchange of knowledge highlighting the importance of the digital archive, digital representations of all symbolic and cultural resources, and new literacies and models of text management. At the same time the radical concordance of image, text and sound, and development of new information/knowledge infrastructures have created new learning opportunities in formal and informal areas, while encouraging the emergence of a global media network linked with a communications network together with the emergence a universal Euro-American consumer culture and the rise of edutainment media conglomerates. The question, therefore, of who owns and designs learning systems is of paramount political and philosophical importance for “How a system is designed will affect the freedoms and control the system enables” (Lessig, 2002: 35). Universities and institutions of higher education face the agonizing choices concerning the global commons campus—whether they simply follow the model of the University of Phoenix offering national degree programs completely online serving over 300,000 students mainly in areas of business, information science and professional studies, or to innovate and experiment with public knowledge models based on open access, open source, and open courseware.

This book is comprised of five sections each with three essays. The sections are designed to advance an understanding of universities in relation to the goals of development within a knowledge economy. The first section is self explanatory focusing on a general account of the knowledge economy and how we might

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distinguish claims for a knowledge economy versus a knowledge society. It also examines the questions of ‘ideologies’ of the knowledge economy before analyzing the crisis of the concept of the modern university in the context of globalization. The second section, entitled ‘Poststructuralist Perspectives’ provides three essays that mounts a poststructuralist critique of ‘knowledge capitalism’, examines links to Marxism and investigates the work of both Lyotard and Derrida to understanding the university. In ‘Development Universities’ I explore first the idea of the role of the university in relation to regional development; second, I comment upon the old development education literature; before finally profiling the notion of the learning economy based on Lundvall’s work. In ‘Science and the Disciplines’ I chart the rise of global science and the politics of international research collaborations, develop an argument concerning the reclaiming of the university’s cultural function, and pose the question of the university ‘after’ the disciplines and ‘before’ the new world economy. The final section, ‘Neoliberalism, Freedom and the Republic of Science’ picks up on a number of earlier themes to focus on the assessment of research quality, bibliometrics and free science in the context of open source and open access.

NOTES

¹ I am thinking in particular of the members of the Frankfurt school—Adorno, Marcuse, Fromm, Reich and others—who migrated to the U.S. to escape Nazism. Marcuse’s (1964) *One Dimensional Man* became adopted as an international text for the student movement. It should be remembered that this era was a violent period in U.S. politics—the age of political assassination: J.F. Kennedy was assassinated in 1963; and his brother Robert in 1968, the same year as Martin Luther King Jr. Malcolm X had been assassinated in 1965.

² See Bob Dylan’s (2004) wonderfully evocative autobiography *Chronicles, Volume One*.

³ See, for example, the furor that accompanied the publication of Martin Bernal’s (1987) *Black Athena*. See ‘The Black Athena Debate’ at <http://www.worldagesarchive.com/Individual%20Web%20Pages/BlackAthena.html>.

⁴ See for example Diane Ravitch’s (2003) *The Language Police: How Pressure Groups Restrict What Students Learn* and Nigel Rees (1993) *The Politically Correct Phrasebook: what they say you can and cannot say in the 1990s*. By contrast, see Ellen Messer-Davidow (1993) ‘Manufacturing the Attack on Liberalized Higher Education’ and P. Lauter (1995) ‘Political correctness’ and the attack on American colleges.’

⁵ Plato’s discussion in the *Theatetus* is the source of what is known as the ‘justified true belief’ account of knowledge that is till the dominant account in epistemology: For A to know that p (where p is a proposition) (1) A must believe that p; (2) p must be true; and, (3) there must be reasons (justification) for believing that p. The *Theatetus* is also the source of the standard knock-down argument against Protagorean relativism that argues it is a self-refuting doctrine.

**UNIVERSITIES AND THE GLOBAL
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