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Classical Political Economy and the Role of Universities in the New Knowledge Economy [1]

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ABSTRACT *Higher education has become the new star ship in the policy fleet for governments around the world. The public policy focus on higher education, in part, reflects a growing consensus in macroeconomics of 'new growth' or 'endogenous growth' theory, based on the work of Solow, Lucas and Romer that argues that the driving force behind economic growth is technological change (i.e. improvements in knowledge about how we transform inputs into outputs in the production process). Knowledge about technology and levels of information flow are now considered critical for economic development and can account for differential growth patterns. In short, universities are seen to be a key driver towards the knowledge economy. Accordingly, higher education institutions have been encouraged to develop links with industry and business in a series of new venture partnerships. This emphasis in higher education policy also accords with initiatives to promote greater entrepreneurial skills and activity within so-called national systems of innovation. This paper focuses upon the economic importance of higher education as a key component of the knowledge economy. It discusses the genealogy and contributing strands to the newly emerging discourse and considers universities in the knowledge-driven economy by reference to the UK White Paper* Our Competitive Future. *It also considers the arguments advanced by Joseph Stiglitz (ex-Chief Economist of the World Bank) for the 'analytics of the knowledge economy' and discusses universities in terms of 'knowledge cultures'. Finally, the paper provides a critique of the policy discourse of the knowledge economy as a basis of the new challenges facing universities under knowledge capitalism.*

1. Introduction

Proposition 1: Globalisation constitutes a new kind of struggle over the meaning and value of knowledge

In a recent essay, which is developed in his book *Marx's Revenge* (2002) the Indian economist and Labour peer, Meghnad Desai, discusses the resurgence of capitalism and the death of statist socialism (the subtitle of his book). In his account, which revives an approach from classical political economy, Desai describes globalisation as a phase of Capitalism. According to his organicist approach, which both Adam Smith

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and Karl Marx share, a view which is more fiercely propounded by Hayek in the twentieth century, 'the economy is an organism which is the result of human action but not of human design' (Desai, 2001). Such a view sees 'the entire short twentieth century as a deviation from the true nature of capitalism' and the new phase of globalisation as 'not "the end of history" but a resumption of the nineteenth century global capitalism' (Desai, 2001). Thus, for Desai, globalisation is neither ideology nor utopia.

The organicist view stands in marked contrast to the mechanistic view, which holds that the economy (or society) is

> a result of a deliberate if faulty design and holds that certain agents—capitalists/corporations, government/politicians, bankers/jews—as responsible for the design and operation of the machine that is the economy. Thus in this view, globalisation could be a creation of Western powers or global/transnational/multinational corporations. *Their* ideology would be the hegemonic ideology. It would then be programmatic to regulate/overcome/abolish such malevolent agents and establish a world government or New New Deal etc. (Desai, 2001)

He sets out the differences between these organicist and mechanist views in a table (included here as an appendix) which contrasts the nature of capitalism—cyclical, progressive, competitive, wealth enhancing, poverty reducing and inequality generating versus crisis ridden, destructive, dysfunctional, poverty enhancing and monopolistic—society (as self-organising and spontaneous or dialectic versus planned, controllable, and equilibriating), state (external, redundant, interfering, and superstructural versus essential, internal, enabling and pivotal) and market (a signalling, dynamic uncertainty based on innovation versus a mechanism for resource allocation, either efficient [Chicago] or prone to failure [Harvard/MIT], characterised by equilibrium). [2]

Desai provides a comprehensive analysis of capitalism during the twentieth-century in terms of three phases: (1) 1914–1945 deglobalisation characterised by the rise of Fascism/Bolshevism and the growth of the territorial social State; (2) 1945–1971 Golden Age of Keynesianism, Stalinism and of Decolonisation; (3) 1971–1989 Crisis of Keynesianism. After 1989 we have passed into an era characterised by the resurgence of capitalism in its global phase. He suggests that days of the old mechanistic paradigm which sees 'globalisation as malfunctioning, ideological, hegemonic and unequalising' have passed and now we should see globalisation in terms of the organicist paradigm as

> a self organising process not designed by any one or even many corporations or governments but as an incessant seeking for profits in a gale of creative destruction. It is refashioned what was an Interstate [International] Order into a Global Process whose end is not predictable. Yet of the organicist views blames no single agency for the functioning of capitalism, it neither offers hope of a better world in the near future. In Marx's vision, there is

> incessant class struggle as capitalism reproduces itself. There is a distant end to capitalism and a serious self conscious, self organising society emerges at the end.

I am less interested in the historical details of Desai's analysis than his revival of classical political economy and his inspired and daring conjunction of Marx and Hayek. In particular, I want to use his brief summary to highlight the content of the first proposition with which I began the paper, although the 'three moments' of knowledge capitalism as I present them here do not depend on Desai's characterisation of globalisation. Like Desai I wish to revive classical political economy and his organicist conjunction of Marx and Hayek is full of presentiment for an analysis of the knowledge economy, which he does not explore in a sustained way. I differ from Desai in the emphasis I give to the knowledge economy as a significant element of globalisation. I call my approach new political economy of knowledge. Jean Jacques Rousseau wrote *A Discourse on Political Economy* in 1755 beginning with the words:

> The word Economy, or OEonomy, is derived from *oikos, a house*, and *vomos, law*, and meant originally only the wise and legitimate government of the house for the common good of the whole family. The meaning of the term was then expanded to the government of that great family, the State. To distinguish these two senses of the word, the latter is called *general* or *political* economy, and the former domestic or particular economy (see http://www.constitution.org/jjr/polecon.htm).

New political economy I consider new because it applies to the knowledge economy as opposed to the traditional or industrial economy. If the knowledge economy operates differently from the industrial economy—if knowledge as a commodity behaves differently from other commodities and that is the strong claim by a number of economists—then we also need a new political economy of knowledge to map its dimensions and analyse its effects.

2. Knowledge Capitalism as an Aspect of Globalisation

Proposition 2: Knowledge capitalism is the latest phase of globalisation

For the sake of time and space, and their compression, I shall advance or simply assert a series of interrelations that makes the case for knowledge capitalism as the latest phase of globalisation. These assertions should also clarify why globalisation might be considered a new kind of struggle over the meaning and value of knowledge, although I shall elaborate this point in Table 1 below.

The three moments I call the 'capitalisation of knowledge', the 'deterritorialisation of information' and the 'technologisation of education'. All three lead to new struggles over meaning and value of knowledge in ways that clearly imbricate universities. Before tackling the latter half of that proposition—the bit that mentions the university—let me briefly return to Hayek as a starting point for understanding

TABLE 1. Knowledge capitalism as an aspect of globalisation [3]

1. The rise of the sign or symbolic economy (knowledge capitalism) based on the combined logics of abundance and dispersal:
   (i) unlike most resources that are depleted when used information and knowledge can actually grow through sharing, exchange and application;
   (ii) capital in symbolic form of information can be speedily transferred in deregulated 24-hour virtual finance markets, allowing international currency speculation and increased geographical spread and mobility of FDI;
   (iii) displacement of manufacturing industry from its old locations in the North to selected locations—Asia, Latin America—in the South and a dematerialisation of the industrial products (the weightless economy).
2. Communications and information technologies diminish the effect of distance making possible 'action at a distance in real time':
   (i) the radical concordance of image, text and sound, and development of new information/knowledge infrastructure;
   (ii) the emergence of a global media network linked with a global communications network;
   (iii) the emergence a global Euro-American consumer culture and the rise of global edutainment giants in music/film/TV.
3. Investment in human capital and key competencies as a source of value in knowledge based institutions, with an emphasis on knowledge being locked into systems or process:
   (i) the technological transformation of 'leading' sciences which where the major developments in informatics and modern theories of algebra, computer languages, communication theories and cybernetics, phonology and theories of linguistics, problems of information storage, retrieval and data banks, telematics, problems of translation, are significantly all *language based*;
   (ii) new legal, ethical and economic problems concerning knowledge creation, transmission and distribution highlighted in the emergence of international intellectual property rights regimes and the recent GATS agreements within the international knowledge system;
   (iii) the promotion of new knowledge cultures and knowledge/technology transfer policies through the corporatisation of the university, the encouragement of new public/private partnerships and the concept of lifelong education.

the revolution in the economics of knowledge and information that characterised the twentieth-century.

3. Hayek and the Economics of Knowledge [4]

Proposition 3: The international knowledge system is a spontaneous result of human action but not of human design

Friedrich Hayek (1899–1992) is probably the single most influential individual economist or political philosopher to shape what is now understood as neoliberalism, although he is best regarded, and considered himself, as a classical liberal.[5] Hayek's own theoretical direction sprang out of the so-called Austrian School established by Carl Menger, Eugen Boehm-Bawerk and Ludwig von Mises during first decade of the early twentieth-century. What distinguished the Austrian School from the classical school of political economy pioneered by Adam Smith and David Ricardo was their 'subjective', as opposed to the 'objective', theory of value. Leon Walras

(1834–1910) of the French Lausanne school presented economics as 'the calculus of pleasure and pain of the rational individual' and Carl Menger, developing the 'subjective' theory of value, launched what some have called a 'neoclassical revolution' in economics. Menger questioned the notion of perfect information that was seen to underlie *homo economicus* by both classical and neo-classical economists.

Hayek's work also centrally emphasised the limited nature of knowledge: the price mechanism of the 'free' market conveys information about supply and demand that is dispersed among many consumers and producers and cannot be coordinated by any central planning mechanism. His early work emphasised that the key to economic growth is 'knowledge' and this insight provided him with the grounds for casting doubt on socialism and state planning, and for advocating that the market was the best way to organised modern society. In an early paper entitled 'Economics and Knowledge' delivered to the London economic Club in 1936 (and reprinted in *Economica*, IV, 1937, pp. 33–54), Hayek contended:

> The empirical element in economic theory—the only part which is concerned not merely with implications but with causes and effects and which leads therefore to conclusions which, at any rate in principle, are capable of verification—consists of propositions about the acquisition of knowledge. (1937)

This insight, in part, he attributes in a footnote to Karl Popper's notion of falsification outlined in the 1935 German edition of *The Logic of Scientific Discovery*, thus, indicating a close relationship to his distant cousin that helped to determine intellectual history of the twentieth-century. Hayek provided an analysis of the tautologies that comprise formal equilibrium theory, arguing that the extent that these formal propositions could be filled out with empirical propositions about how we acquire and communicate knowledge determines our understanding of causation in the real world. With that statement he distinguished the formal element of economics as the Pure Logic of Choice—a set of tools for investigating causal processes. The problem he addressed receives its classical formulation in the following question: 'How can the combination of fragments of knowledge existing in different minds bring about results which, if they were to be brought about deliberately, would require a knowledge on the part of the directing mind which no single person can possess?' And he proceeds to offer a solution in terms of the now celebrated notion of spontaneous order: 'the spontaneous actions of individuals will, under certain conditions which we can define, bring about a distribution of resources which can be understood as if it were made according to a single plan, although nobody has planned it'. This is also an answer, he surmises, to the problem of the 'social mind'.

In 1945 Hayek returns to the problem of knowledge in a paper entitled 'The Use of Knowledge in Society' (*American Economic Review*, XXXV, 4, pp. 519–530) when he poses the problem of constructing a rational economic order and he criticises the approach from an economic calculus which assumes that we all possess the relevant

information, start out from a given system of preferences and command complete knowledge of available means. By contrast, he maintains the problem is not merely one of how to allocate given resources, rather 'it is a problem of the utilisation of knowledge which is not given to anyone in its totality'. Hayek emphasises the importance of knowledge of particular circumstances of time and place, which constitutes the unique information which every individual possesses, and he champions practical and contextual or 'local' knowledge ('unorganised knowledge') against the scientific or theoretical knowledge, as an understanding of general rules, in economic activity. This 'local knowledge' is the sort of knowledge, he hastens to add, which cannot be made into statistics or conveyed to any central authority.

Hayek's 1945 paper, then, is consider the classic argument against central planning and the state. It is an argument that he develops through the notion of evolutionary economics, for he considers the pricing system as an institution that has developed as a means of communicating information where 'prices act to coordinate the separate actions of different people in the same way as subjective values help the individual to coordinate the parts of his plan'. This he takes to be the central theoretical problem of all social science—as Whitehead puts it—not the habit of thinking what we are doing but the number of important operations which we can perform without thinking about them, a kind of spontaneous system that has developed as practices and institutions over time. Some have argued that Hayek's genius was to recognise that liberal democracy, science and the market are such spontaneous self-organising systems based on the principle of voluntary consent that serve no end beyond themselves.

I have started with Hayek for a number of reasons. First, his work on the economics of knowledge is generally regarded as the starting point for contemporary economics of knowledge and information. [6] Second, Hayek's liberal constitutionalism provided the blueprint for a form of liberalism understood as a critique of state reason which presaged the rationale for restructuring the state during the highpoint of the Thatcher-Reagan era. Third, Hayek was important not only intellectually but also historically and organisationally. In 1947 Hayek set up the very influential Mont Pelerin Society, an international organisation dedicated to restoring classical liberalism and the so-called free society, including its main institution, the free market. Hayek was concerned that even though the Allied powers had defeated the Nazis, liberal government was too welfare-oriented, a situation, he argued, that fettered the free market, consumed wealth and infringed the rights of individuals. With the Mt Pelerin Society Hayek gathered around him a number of thinkers committed to the 'free market', including his old colleague Ludwig von Mises as well as some younger American scholars who were to become prominent economists in their own right—Rose and Milton Friedman, James Buchanan, Gordon Tullock, and Gary Becker—and who went on to establish the main strands of American neo-liberalism. Fourth, in education research and policy very little attention has been given by educationalists to economics per se, or the economics of education or of knowledge. Indeed, broadly speaking only those who embrace a political economy approach or some variant of it, come close to economic questions, but not in any formal sense do they approach an understanding of neoclassical economics and its

contemporary variants or demonstrate either an awareness of the history of economics or its powerful contemporary policy effects in education. [7]

Desai (2002, pp. 196–197), for instance, writes:

> Hayek's lecture to the London Economic Club in November 1936 was published under the title 'Economics and Knowledge' in February 1937 in LSE's journal, *Economica*. It is no exaggeration to say that this is one of the most innovative articles in economics written in the twentieth century. Indeed, it was so innovative that it remained unappreciated until the 1970s. Even today, its insights have not been fully taken on board by economists. Hayek argued that while economists had understood the importance of the division of labour ever since Adam Smith, they had not realised that the division of knowledge was much more crucial to economic life.

With respect to the economics of knowledge and information today we can tentatively identify at least six important strands, all beginning in the post-War period and all but one (i.e. new growth theory) associated with the rise to prominence of the neoclassical second (1960s–70s) and third (1970s–Today) Chicago schools. [8]

- The economics of information pioneered by Jacob Marschak (and co-workers Miyasawa and Radner), and George Stigler, who won the Nobel Memorial Prize for his seminal work in the economic theory of information.
- Fritz Machlup (1962) who laid the groundwork and developed the economics of the production and distribution of knowledge (see Mattessich, 1993).
- The application of free-market ideas to education by Milton and Rose Friedman (1962), although Friedman's form of monetarism has become relatively less important.
- The economics of human capital developed first by Theodore Schultz (1963), and later by Gary Becker (e.g. 1964) in New Social Economics.
- Public Choice theory developed under James Buchanan and Gordon Tullock (1962).

New growth theory, which has highlighted the role of education in the creation of human capital and in the production of new knowledge and explored the possibilities of education-related externalities, not specified by neoclassical theory. The public policy focus on science and technology, in part, reflects a growing consensus in macroeconomics of 'new growth' or 'endogenous growth theory', based on the work of Solow (1956, 1994), Lucas (1988) and Romer (1986, 1990, 1994), that the driving force behind economic growth is technological change (i.e. improvements in knowledge about how we transform inputs into outputs in the production process). On this model technological change is endogenous, 'being determined by the deliberate activities of economic agents acting largely in response to financial incentive' (Snowdon & Vane, 1999, p. 79). The neoclassical growth model developed by Solow assumed technology to be exogenous and therefore available without limitation across the globe. Romer's endogenous growth model, by contrast,

demonstrates that technology is not a pure public good for while ideas are non-rivalrous they are also partially excludable through the legal system and patents. The policy implication is twofold: knowledge about technology and levels of information flow are critical for economic development and can account for differential growth patterns. Knowledge gaps and information deficiencies can retard growth prospects of poor countries, while technology transfer policies can greatly enhance long-term growth rates and living standards. [9]

4. Education in the Knowledge Economy

Proposition 4: If knowledge is a global public good, then governments (and universities) have a key role to play in the knowledge economy

The OECD report *The Knowledge-based Economy* (1996) begins with the following statement:

> OECD analysis is increasingly directed to understanding the dynamics of the knowledge-based economy and its relationship to traditional economics, as reflected in 'new growth theory'. The growing codification of knowledge and its transmission through communications and computer networks has led to the emerging 'information society'. The need for workers to acquire a range of skills and to continuously adapt these skills underlies the 'learning economy'. The importance of knowledge and technology diffusion requires better understanding of knowledge networks and 'national innovation systems'.

The report is divided into three sections focusing on trends and implications of the knowledge-based economy, the role of the science system in the knowledge-based economy and indicators, essentially a section dealing with the question of measurement. In the Summary, the OECD report discusses knowledge distribution (as well as knowledge investments) through formal and informal networks as being essential to economic performance and hypothesises the increasingly codification of knowledge in the emerging 'information society'. In the knowledge-based economy 'innovation is driven by the interaction of producers and users in the exchange of both codified and tacit knowledge'. The report points to an interactive model of innovation (replacing the old linear model), which consists of knowledge flows and relationships among industry, government and academia in the development of science and technology. With increasing demand for more highly skilled knowledge workers the OECD indicates

> Governments will need more stress on upgrading human capital through promoting access to a range of skills, and especially the capacity to learn; enhancing the knowledge distribution power of the economy through collaborative networks and the diffusion of technology; and providing the enabling conditions for organisational change at the firm level to maximise the benefits of technology for productivity. (p. 7)

The science system—public research laboratories and institutions of higher education—is seen as one of the key components of the knowledge economy, and the report identifies the major challenge as one of reconciling traditional functions of knowledge production and training of scientists with its newer role of collaborating with industry in the transfer of knowledge and technology.

Similar arguments profiling the centrality of knowledge to the economy and the important role of education have been made by a variety of scholars. In his recent book *Globalization and It Discontents*, Joseph Stiglitz (2002) indicated that in his advisory role at the World Bank and White House there was a close link between the policies he advocated and his earlier theoretical work in economics, much of it related to the economics of information—in particular *asymmetries of information*—and market imperfections. He writes:

> The standard models that economists had used for generations argued either that market worked perfectly—some even denied the existence of genuine unemployment—or that the only reason that unemployment existed was that wages were too high, suggesting the obvious remedy of lower wages. Information economics, with its better analyses of labor, capital and product markets, enable the construction of macroeconomic models that provided deeper insights into unemployment, models that explained the fluctuations, the recessions and depressions, that had marked capitalism since its beginnings. (Stiglitz, 2002, p. xii)

Stiglitz goes to talk of the failures of both markets *and* government, and to criticise the International Monetary Fund whose decisions he claims, 'were made on the basis of what seemed a curious blend of ideology and bad economics' (p. xiii). He suggests that structural adjustment policies part of the neoliberal version of globalisation promoted by the IMF were both outmoded and inappropriate and prescribed 'without considering the effects they would have on the people in the countries told to follow these policies' (p. xiv).

The way ahead for Stiglitz is not to abandon globalisation—which 'is neither feasible nor desirable' (p. 214)—but to reshape its potential for good and to reshape international economic organisations to ensure that this is accomplished. While the market model has prevailed, he argues that we must recognise that there is not just *one* market model: there are marked differences between the Japanese, American, German and Swedish market systems. There is room to recognise the role of governments not only in mitigating market failures but also in ensuring social justice. He argues for international public institutions based on a form of global governance that will entail a change of voting rights and greater transparency. His reforms of the apparatus of international institutions and the global financial system grow out of his own theoretical interests in the economics of knowledge and information.

In his role as Chief Economist of the World Bank Stiglitz drew an interesting connection between knowledge and development with the strong implication that universities as traditional knowledge institutions have become the leading future service industries and need to be more fully integrated into the prevailing mode of

production—a fact not missed by countries like China who are busy restructuring their university systems for the knowledge economy. Stiglitz asserts that the World Bank has shifted from being a bank for infrastructure finance to being what he calls a 'Knowledge Bank'. He writes: 'We now see economic development as less like the construction business and more like education in the broad and comprehensive sense that covers, knowledge, institutions, and culture' (Stiglitz, 1999, p. 2). He goes on to argue that the 'movement to the knowledge economy necessitates a rethinking of economic fundamentals' because, he maintains, knowledge is different from other goods in that it shares many of the properties of a *global* public good. This means, among other things, a key role for governments in protecting intellectual property rights, although appropriate definitions of such rights are not clear or straightforward. It signals also dangers of monopolisation, which, Stiglitz suggests, may be even greater for knowledge economies than for industrial economies.

In his role as Chief Economist for the World Bank, Stiglitz (1999a) argued that knowledge is a public good because it is *non-rivalrous*, that is, knowledge once discovered and made public, operates expansively to defy the normal 'law' of scarcity that governs most commodity markets. [10] Knowledge in its immaterial or conceptual forms—ideas, information, concepts, functions and abstract objects of thought—are purely non-rivalrous, that is, there is essentially zero marginal costs to adding more users. Yet once materially embodied or encoded, such as in learning or in applications or processes, knowledge becomes costly in time and resources. The pure non-rivalrousness of knowledge can be differentiated from the low cost of its dissemination, resulting from improvements in electronic media and technology, although there may be congestion effects and waiting time (to reserve a book, or download from the internet). Stiglitz (1999a) delivered his influential paper to the UK's Department for Trade and Industry and Centre for Economic Policy Research on the eve of the release of the UK White Paper *Our Competitive Future: Building the Knowledge Driven Economy*, [11] *which* subsequently became a template for education policy in England and Scotland (see Peters, 2001). The paper also provides a useful guide for understanding some of the 'analytics of the knowledge economy' (see Appendix 2).

While non-rivalrous, knowledge can be *excluded* (the other property of a pure public good) from certain users. The private provision of knowledge normally requires some form of legal protection otherwise firms would have no incentive to produce it. Yet knowledge is not an ordinary property right. Typically, basic ideas, such as mathematical theorems, on which other research depends, are not patentable and, hence, a strong intellectual property right regime might actually inhibit the pace of innovation. Even though knowledge is not a pure public good, there are extensive externalities (spillovers) associated with innovations. As he notes, the full benefits of the transistor, microchip or laser did not accrue to those who contributed to those innovations.

While competition is necessary for a successful knowledge economy, Stiglitz maintains, knowledge gives rise to a form of increasing returns to scale, which may undermine competition for with large network externalities, forms of monopoly

knowledge capitalism (e.g. Microsoft) become a possible danger at the international level. New technologies provide greater scope for the suppression of competition and, if creativity is essential for the knowledge economy, then small enterprises may provide a better base for innovation than large bureaucracies. Significantly, Stiglitz provides some grounds for government funding of universities as competitive knowledge corporations within the knowledge economy and for government regulation of knowledge or information monopolies, especially those multinational companies that provide the so-called information infrastructure.

On the basis of this analysis Stiglitz provides a number of pertinent observations on the organisational dimensions of knowledge. He maintains that just as knowledge differs from other commodities so too knowledge markets differ from other markets. If each piece of information differs from every other piece, then information cannot satisfy the essential market property of *homogeneity*. Knowledge market transactions for non-patented knowledge requires that I disclose something and thus risk losing property. Thus, in practice, markets for knowledge and information depend critically on reputation, on repeated interactions, and, also significantly, on trust.

On the supply side, knowledge transactions within firms and organisations require trust and reciprocity if knowledge workers are to share knowledge and codify their tacit knowledge. Hoarding creates a vicious circle of knowledge restriction, whereas trust and reciprocity can create a culture based on a virtuous circle of knowledge sharing. On the demand side, *learning cultures* (my construction) will artificially limit demand for knowledge if they denigrate any requests for knowledge as an admission of ignorance.

He argues that these knowledge principles carry over to knowledge institutions and countries as a whole. If basic intellectual property rights are routinely violated, the supply of knowledge will be diminished. Where trust relationships have been flagrantly violated learning opportunities will vanish. Experimentation is another type of openness, which cannot take place in closed societies or institutions hostile to change. Finally, he argues that changes in economic institutions have counterparts in the political sphere, demanding institutions of the open society such as a free press, transparent government, pluralism, checks and balances, toleration, freedom of thought, and open public debate. This political openness is essential for the success of the transformation towards a knowledge economy.

5. Universities, Globalisation and the Knowledge Economy

Proposition 5: Paradoxically, at a point historically when the interventionist state has been rolled back and governments have successfully eased themselves out of the market, they find themselves as the major owners and controllers of the means of knowledge production in the new knowledge economy

On the strength of this analysis what conclusions can we draw for the role of the university in the knowledge economy? In an earlier paper with the same main title I offered a set of conceptual criticisms and questioned policy constructions of the knowledge economy that revolve around a narrow, instrumental approach taken to

the economics of knowledge and to intellectual culture in general, which does not acknowledge or sufficiently differentiate among various definitions of knowledge. In particular, I emphasised differences between the concepts of 'knowledge' (as justified, true belief) and 'information' (as data that does not satisfy any of the three conditions of truth, belief or justification). I also questioned the empirical basis for the knowledge economy and criticised a discourse of futurology that uncritically embraced a knowledge managerialism that both operates on the basis of an easy distinction between knowledge managers and knowledge workers, and primarily focuses on the commercial principle of embedding knowledge in processes. I emphasised that knowledge has strong cultural and local dimensions as well as global dimensions. The role of the university in the knowledge economy in respect of the former relate to nation-building, regional development (taken in a broad sense), the protection of social rights and the preservation of community whereas in respect of the latter, beyond its commercial functions, might also seek to expand its Enlightenment role in the development of a genuinely global civic community based on the extensions of the concept of citizen rights above the level of the State. In the companion paper and other publications, in particular, I have coined the term *knowledge cultures* I suggested we must come to understand in terms of the organisation of knowledge in both its industrial and post-industrial forms and under a variety of regional capitalist models. New knowledge technologies offer new pedagogical possibilities and 'ultimately non-controllable access to diverse and plural worlds—yet they do not assure the acquisition of the ethical and critical faculties needed for personal orientation and balance in negotiation of those worlds' and they often reinforce rather than ameliorate existing social inequalities (Chisholm, 1999, p. 3).

With the massive sweep of neoliberal reforms that have restructured and privatised the State sector, national education systems remain overwhelmingly part of the public sector, both state-owned and state-controlled. This is despite the recent wave of reforms in education proclaiming the 'end of the comprehensive era' and emphasising choice and diversity through forms of privatisation or joint public-private funding partnerships, such as the Private Finance Initiative (PFI) in the UK. Moreover, State provision of an increasingly 'massified' system of formal education is still the dominant form of the organisation of knowledge. Advocates of knowledge capitalism argue that State systems are struggling to release themselves from older predominantly industrial organisational forms to take advantage of more flexible and tailorised or customised forms of delivery, underwritten by developments in ICT (e.g. Burton-Jones, 1999). Paradoxically, at a point historically when the interventionist state has been rolled back and when world governments have successfully eased themselves out of the market, governments find themselves as the major owners and controllers of the means of knowledge production in the new knowledge economy. While some economists and policy analysts have argued that there are new grounds for reappraising the role for the state in the knowledge economy (Thurow, 1996; Stiglitz, 1999a,b), most governments have pursued policies that have followed a process of incremental and parallel privatisation designed to blur the boundaries between the public and the private, learning and work.

In the age of knowledge capitalism, we can expect governments in the West to further ease themselves out of the public provision of education as they begin in earnest to privatise the means of knowledge production and experiment with new ways of designing and promoting a permeable interface between knowledge businesses and public education at all levels. In the last decade educationalists have witnessed the effects of the Hayekian revolution in the economics of knowledge and information, we have experienced the attack on 'big government' and reductions of state provision, funding and regulation. In the age of knowledge capitalism the next great struggle after the 'culture wars' of the 1990s will be the 'education wars', a struggle not only over the meaning and value of knowledge both internationally and locally, but also over the means of knowledge production.

NOTES

[1] A version of this essay was presented at the Society for Research in Higher Education annual conference 'Students and Learning: What is Changing?' 10–12 December, 2002, University of Glasgow. It draws upon aspects of published work (see Peters, 2001, 2002a–d, 2003).

[2] See the excellent website on globalisation set up at LSE under Desai's Centre for the Study of Global Governance (http://www.lse.ac.uk/collections/globalDimensions/) for a series of recent articles by leading experts and politicians.

[3] The table of my own construction is based upon a variety of sources including Desai (especially items 1 (ii) and (iii), David Skyrme Associates (http://www.skyrme.com/insights/21gke.htm) and Lyotard (1984), especially items 3 (i) and (ii). For an application to Scotland see, for instance, *Scotland: Towards the Knowledge Economy* (summary at http://www.scotland.gov.uk/library/documents-w9/knec–02.htm), *Targeting Excellence for the Knowledge Economy* (chapter 3 of *Targeting Excellence—Modernising Scotland's Schools*), *Enterprise and Lifelong Learning Committee, 9th Report 2002, Final Report on Lifelong Learning*, and on knowledge/technology transfer policies, see SHEFC's Circular Letter at http://www.shefc.ac.uk/content/library/circs/01/he2401.html.

[4] This section draws on Peters (2002b).

[5] For Hayek's two papers on knowledge, along with other full texts, commentary and scholarly articles see http://www.hayekcenter.org/friedrichhayek/hayek.html.

[6] This is not to say that there is general agreement on Hayek's economics of knowledge. See Zappia (1999) who uses Bowles and Gintis' recent survey of 'contested exchange economics' to argue for socialist alternatives to the competitive market mechanism in using information.

[7] There are exceptions to the rule: Mark Blaug is an influential economist who consistently has worked in the field of education as are Bowles and Gintis, who have been very influential. See the web page for the recently established Centre for the Economics of Education, funded by the Department of Education and Skills and set up as a partnership by the London School of Economics and the London Institute (http://cee.lse.ac.uk/index.html).

[8] See the New School site on the Chicago School: http://cepa.newschool.edu/het/schools/chicago.htm.

[9] This is not to deny that other social sciences have contributed to the discourse on the knowledge economy and its earlier sibling concept of the knowledge society. In sociology, for instance, the notion of postindustrial society was first coined by Daniel Bell (1974) and Alain Touraine (1973) 20 years ago, and developed as the information society and the network society by Manuel Castels (2000). In management theory, knowledge capitalism has been picked up in terms of the burgeoning field of 'knowledge management'.

[10] This section on Stiglitz draws on the section 'Analytics of the Knowledge Economy' from my recent paper 'University, Globalisation and the Knowledge Economy' (Peters, 2002).

[11] See the website http://www.dti.gov.uk/comp/competitive/main.htm.

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Appendix 1. Two Contrasting Systems. Characterisation of Major Processes

NATURE OF	ORGANICIST	MECHANIST
CAPITALISM	Cyclical Progressive Wealth Enhancing Inequality Generating Poverty Reducing Competitive	Crisis Ridden Destructive Dysfunctional Inequality Generating Poverty Enhancing Monopolistic/Oligopolistic
SOCIETY	Self Organising Spontaneous Order (Hayek) vs Dialectical (Marx)	Planned, Designed Controllable Equilibrating
STATE	External Redundant Interfering Superstructural	Internal Essential Enabling Pivotal
MARKET	Search/Signalling Dynamic Uncertainty Innovation/Discovery	Resource Allocation Efficient (Chicago) vs Prone to Failure(Harvard/MIT)/Static Equilibrium/Stationary

Source: Desai (2001)

Appendix 2. The Analytics of the Knowledge Economy

It is argued that the knowledge economy is different from the traditional industrial economy because knowledge is fundamentally different from other commodities, and that these differences, consequently, have fundamental implications both for public policy and for the mode of organisation of a knowledge economy.

1. The scarcity-defying characteristics of ideas
   (i) Non-rivalry
   (ii) Conceptual vs Material Knowledge
2. Intellectual property rights
   (i) Excludability
   (ii) Externalities
   (iii) Competition
3. Organisational dimensions of knowledge
   (i) Knowledge markets
   (ii) Knowledge transactions within firms
   (iii) Openness and knowledge transfer
   (iv) Experimentation
4. The marketplace of ideas
   (i) Pluralism in project selection
   (ii) Robustness
   (ii) The failure of central planning
   (iii) Decentralisation and participation within firms
   (iv) Openness in the political process

Source: adapted from Stiglitz (1999b).