

*Essay Review*

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## UNIVERSITIES AND THE KNOWLEDGE ECONOMY

Phillip Brown and Anthony Hesketh, *The Mismanagement of Talent: Employability and Jobs in the Knowledge Economy* (Oxford: Oxford University Press, 2004), 288 pp., ISBN 0-19-926954-8 (pb) 0-19-926953-X (hb)

Dominique Foray, *The Economics of Knowledge* (Cambridge, MA: The MIT Press, 2004), 288 pp. 12 illus., ISBN 0-262-06239-9

Corynne McSherry, *Who Owns Academic Work? Battling for Control of Intellectual Property* (Cambridge, MA: Harvard University Press, 2001), 288 pp., ISBN 0-674-01243-7

The knowledge economy is turning out to be a bit of a disappointment. A generation or more ago, it was described in almost utopian terms. The hard work of the world would dwindle away – or, at any rate, move offshore away – from our prying and guilty gaze. A burgeoning cadre of well-paid and highly-educated ‘knowledge workers’ would become the dominant class in advanced societies, although ‘class’ itself, with its ugly connotations of struggle between bourgeoisie and proletariat, would itself become an anachronistic term, as new technologies both empowered and enlightened the mass citizenry of the ‘knowledge society’.

Today, the knowledge economy is increasingly seen in a different light. Older-style industrial and bureaucratic jobs have indeed moved offshore, but they are just as likely to have been replaced by insecure ‘service’ jobs characteristic of hyper-consumerism, as by the high-value ‘knowledge’ jobs characteristic of the super-creative society we once fondly imagined we were about to experience. The barcode reader wielded by the shelf-stacker is as much – or more? – the motif of the knowledge economy as the scientific paper written by the PhD holder (or even the high-tech project managed by the engineer). The new technologies have produced an overload of information, always ‘on’,

but also overwhelmingly incoherent. Through their capacity to manipulate almost infinite data-sets, the same technologies have enabled control regimes of unprecedented power and intrusiveness; and they have also flooded our world with promiscuous but persuasive 'brands' that parody the creativity, and modernity, of art, culture, and design.

In short, our vision of a post-industrial utopia, suffused by increasingly post-materialistic values (if only because all reasonable material needs could be met), has been replaced by a darker vision – of a society in which risks overwhelm creativity, in which determinable needs have been replaced by indeterminate desires, in which the (assumed) altruism of abundance has been pushed aside by the (actual) insecurities of competitive materialism, and in which solidarity has been eroded by anomie. There are many reasons for this shift in perceptions. One certainly is the naïve determinism of some older characterizations of post-industrialism, which were remarkably reminiscent of characterizations of industrialization in the nineteenth century, and of automation in the first half of the twentieth century. Another reason, less explored, is that our original vision of the knowledge economy was articulated in the age of social democracy (and the social market), of the welfare state and, even, of the libertarian left that engineered in 1968 its own '1848' – an age which, vainly as it has (temporarily) turned out, attempted to escape from the shadow of war and the night of Holocaust by asserting the continuing validity of progressive politics rooted in a benign and rational culture.

Whatever the reason, public policy – and certainly political rhetoric – seem to have lagged behind this shift in perceptions. Most politicians still speak of the knowledge economy not only as an inescapable formation but also as an almost entirely positive phenomenon. More investment in science and technology is seen as the surest way to generate economic wealth and, surely less confidently, social well being. Studies demonstrating that a firm belief in linear and causal connections between 'pure' science and 'innovation' is, at best, exaggerated and, at worst, misplaced, are generally ignored. Governments, even those most respectful of free markets, naturally incline to emphasize the significance of the levers they themselves control or can most directly influence – including investment in science and research. The complexity of the innovation process – with its sometimes contradictory strands of market, science, and culture – tends to be underestimated. The need for investment in the highly-skilled workforce required to produce and service the new technologies sourced in science is emphasized, and mass higher educa-

tion – originally grounded in notions of opportunity, emancipation, and democracy – is now justified in terms of meeting skill shortages.

Recently, this confident discourse has been inflected by the strain of pessimism implicit in conceptual accounts and empirical descriptions of the knowledge economy/society. Awkward questions are now being asked. For example, does increased investment in pure/public research always generate benefits in terms of market applications, which in a post-welfare state society must be the principal means through which economic and social improvements are produced? Are as many (higher-level) ‘knowledge workers’ needed as was once supposed – and, if the answer is no, what is the justification for continuing to expand higher education?

These questions have been raised within an essentially-benign conception of the knowledge economy. The most significant perhaps are these: if knowledge is a key economic resource, it must also be – in market societies, at any rate – a tradeable good; how can the idea of knowledge as a commodity be reconciled with the rival idea of knowledge as a public good; and, most intractably, how can the creativity (and ‘quality’) of science, which currently depend upon its free circulation and exposure to expert assessment, be maintained if its results are no longer so openly available?

The three books under review all address, or echo, these new concerns. They all reflect, albeit in different ways, a post-utopian conception of the knowledge economy/society. When it was first published, *The Mismanagement of Talent* was popularly interpreted as an assault on mass higher education. Brown and Hesketh, it was assumed, were questioning the whole (economic) rationale for the continuing expansion of higher education. In England, their critique had a particular resonance, because it challenged the Government’s target (now downgraded to an aspiration) of enrolling fifty percent of young adults in higher education by the end of this decade. Here, it seemed, was proof that this expansionary policy was misconceived – not only in terms of priorities for public investment, but also, more crucially (and cruelly), in terms of the disappointed aspirations of thousands of graduates who had no hope of accessing elite ‘knowledge worker’ jobs. In fact, the evidence offered by Brown and Hesketh is more limited, and their arguments more subtle, than these representations have suggested.

*The Economics of Knowledge* is an older book. It was first published in France as *L’Economie de la Connaissance* in 2000, and this English translation is a revised and extended edition of the original

work. But its original date is important, because Foray's argument is less infected by more recent strains of pessimism. The tone is cooler than in *The Mismanagement of Talent* (which, rather like Allan Bloom's *The Closing of the American Mind*, published in the 1980s to neo-conservative acclaim, has a polemical title that is not an entirely accurate summary of its argument). Foray's book is also a more conceptual work – again, unlike Brown and Hesketh, whose work is based on the results of empirical surveys and is presented as a policy intervention ('Graduate Glut Devalues Price of Degree', according to the approving headline in *The Times*). Foray's concern, in contrast, is more 'academic' – its purpose, to explain the interaction of an emerging discipline, the economics of knowledge (but 'knowledge' broadly and powerfully described as a dominant characteristic of contemporary society), and the socio-economic phenomena that to an increasing extent have placed 'knowledge' in this dominant position.

The third book – *Who Owns Academic Work?* by Corynne McSherry – is different again. At the core of her argument lies the tension, even contradiction, between the modern university's role as a critical hub of the knowledge economy, which depends crucially on a functioning system of intellectual property rights, and more traditional conceptions of academic work. At stake is not simply the extent to which it is permissible to commodify academic work that, as intellectual property, has either been directly funded by public money or produced within a broadly public domain. There are also larger questions about academic freedom and the purpose of the university in societies that have become both overtly market-driven and knowledge-based. Here McSherry quotes the eloquent title of *The University in Ruins* by Bill Readings<sup>1</sup> – sparking thoughts of an even sharper contrast: are the inhabitants of the contemporary university living in a ruined institution (morally if not actually, because its traditional values system has collapsed), or in a vibrant organization, right at the heart of modern society? A big difference. McSherry treats these dilemmas mainly from the perspectives of the legal philosopher and of the practising lawyer, and the scope of her book is largely confined to the United States of America. But it is impossible not to recognize the louder resonances of her argument.

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<sup>1</sup> Bill Readings, *The University in Ruins* (Cambridge, MA: Harvard University Press, 1996).

## THE MISMANAGEMENT OF TALENT?

The Brown and Hesketh case can be reduced to two allegations. First, they argue that the knowledge economy that has grown up over the past two decades has not led to the anticipated increase in demand for highly-skilled 'knowledge workers'; that indeed, in some respects, it has led to a de-skilling of what Robert Reich has called 'routine production' workers, and has also increased demand for (again in Reich's terminology) 'in-person services' workers (McDonaldization and all that). Second, they argue that, despite the growing emphasis on specific skills and competences, elite jobs still tend to be restricted to those who can demonstrate more general qualities – which once would have been unashamedly subsumed under the label 'character'. As a result, they suggest that the expansion of higher education has conferred few substantial advantages on those who are not fortunate enough to attend elite universities.

Although well argued, neither thesis is completely satisfactory. They are right to be sceptical about the apparent shift from 'routine production' to 'knowledge worker' jobs (in the USA, the former have dropped from a third to a quarter of the labour force, and the latter has increased from one-in-five to a third). The equivalent figures for the United Kingdom demonstrate an even more decisive shift, with production workers down by from more than half to only a quarter and 'knowledge workers' up from a quarter to almost 40% over the past two decades. So many factors lie behind these dramatic movements as to make mono-causal explanations suspect – notably, those deriving from the de-industrialization of the UK economy during the Thatcher years, and the accidental effects of post-welfare state phenomena, such as privatization and out-sourcing, on the shape of the occupational landscape. Brown and Hesketh are almost certainly right to see both the USA and the UK, and by extension other developed societies, as eighty/twenty economies – in other words, four-out-of five workers make things or provide services, while only 20% make a living by 'thinking'.

However, even if they are right, that cannot be the end of the argument – for at least two reasons. The first is that the 'knowledge' content of many jobs has been inexorably increasing – just as levels of functional literacy have been rising. In some instances, this is an obvious phenomenon. Because of advances in healthcare technology, nurses must now possess skills and knowledge that were previously not required; and, because of developments in criminal

justice – and its links with social welfare, and the growing emphasis on ‘rights’ – police officers must now be trained better than ever before. Even in the case of jobs that have apparently lost their expert content, the substitution of skills is as important as their dilution or disappearance. Thus, interpersonal skills needed by those marketing products or offering after-sales services are at least as significant as technical skills that may no longer be required. In others, the ‘losses’ and ‘gains’ may cancel each other out – or the latter may even outweigh the former, although in less concrete forms. Moreover, it may be a mistake to describe the unbundling of traditional forms of expertise as a process of de-skilling (still less, of ‘dumbing down’). More complex processes are at work – both the recombination of expertise in new configurations and fundamental challenges to familiar notions of expertise.

The second reason arises from the nature of the knowledge economy/society, especially if it is defined less in terms of positivistic post-industrial structures and more as a fluid post-modern discourse that has grown out of these structural changes. Seen in this light, one of the primary characteristics of the knowledge economy/society is to blur boundaries between ‘productive’ work and ‘unproductive’ leisure, between producer and consumer, between workplace and home – and, by extension, between job- or gender-determined roles and identities. So it may be misleading to define a knowledge economy/society simply as one in which there is a high and growing proportion of highly-skilled ‘knowledge workers’ (who, as one of the more radical results of globalization, may no longer ‘belong’ in a particular place). Instead, a knowledge economy/society may be better described as one that is suffused with ‘knowledge’ – of all kinds and at all levels. In such a society, definable clusters of ‘knowledge workers’ may actually be less pronounced as knowledge production becomes more widely distributed – spatially, socially, culturally, and even cognitively. A disturbing thought – but not necessarily a false one.

If this broader analysis is accepted, Brown’s and Hesketh’s strictures on mass higher education systems lose some of their force. The chapter headings in the central section of their book graphically highlight their empirical findings – ‘the war for talent’, ‘science of gut feeling’, ‘picking winners’ (to be fair, these headings describe the prejudices not of the authors but of their research subjects). Their focus is firmly on elite universities, elite people, and elite employers. Their findings demonstrate that recruiters in the

so-called ‘blue chip’ organizations – described as ‘leading edge’ and ‘well-known multinationals’ – prefer to hire graduates from elite universities as fast-track management trainees. Why? Because these graduates demonstrate the generally unarticulated personal and intellectual (in that order) qualities that they value – in other words, they are ‘people like us’. Their research also shows that graduates themselves are aware of this recruitment bias and adopt a number of strategies, more and less successful, to exploit or overcome it. But neither finding is at all surprising – although shocking, maybe – nor are they sufficient to construct a ‘general theory’ about the efficiency (or equity) of modern higher education systems.

Virtually absent from Brown and Hesketh’s analysis are the bed-rock institutions of mass higher education, the multitude of their graduates, and the diversity of their destinations. Also invisible are the large numbers of graduates whose higher education gives them the appropriate vocational credentials, licences as well as competencies, to enter their chosen careers – doctors and lawyers, teachers and nurses. Even if the knowledge economy/society were to be calibrated in terms of highly-skilled ‘knowledge workers’, the evidence in *The Mismanagement of Talent* is too thin to justify the generalizations so brazenly advanced. There is no proof, one way or the other, of either the impact of the sophistication factor on ‘ordinary’ jobs, or of de-skilling on mid-range occupations; yet it is well understood that both are important phenomena.

The scope of the study, and the hypothesis which it appears to support, suggest that it is still possible to draw a fairly clear and unproblematic distinction between ‘graduate’ and non-graduate’ jobs (which is a popular pastime among the critics of higher education expansion in the UK). Brown and Hesketh come close to endorsing this naïve position when they write: ‘There is no prospect of the graduate labour market expanding in line with the increased supply of graduates’. Yet it is the essence of a knowledge society that such a demarcation has become an anachronism.

#### KNOWLEDGE AS AN ECONOMIC FORCE

Foray and McSherry address ‘knowledge’ more directly. Foray sees knowledge as an organizing paradigm and meta-discourse, and not simply as a descriptive label. McSherry focuses firmly upon knowledge as ‘property’ (and her key question is, ‘whose property?’).

Although the two books are concerned with different aspects of knowledge, Foray's can be described as a meta-study within which McSherry's can be located. The former provides a grounded account of intellectual property that is contained within a larger discussion of the economics of knowledge, while the latter offers a more normative view. The ingenuity of *The Economics of Knowledge* has two aspects. First, it takes both key words – economics and knowledge – far beyond their conventional (and constraining?) definitions. Second, it seeks to use concepts generated within the economics of knowledge – the post-industrial age successor of nineteenth-century industrial economics – as tools to understand the knowledge-based economy. This duality between codification and operationalization is, of course, a key characteristic of the knowledge society.

Foray argues that two events have combined to produce the present configuration of the knowledge economy. (Incidentally, he is less critical than Brown and Hesketh about the reality of the expanding number of 'knowledge workers'.) The first is a long-standing trend towards greater investment in knowledge-related activities (hence his belief that the proportion of 'knowledge workers' is increasing, actually and dramatically). It is difficult to deny the significance of this trend in the face of the massive investments now made in research and development, in higher education, and in other ways of developing 'human resources'. The second event is what Foray calls 'a unique technological revolution' – in other words the rapid advances in information and communication technologies (ICT).

'Unique', of course, is a treacherous word that encourages the sceptically inclined to discover precedents – printing, perhaps? But it can be argued that what makes ICT 'unique' is not so much its technological novelty or even its 'instantaneity', but its pervasiveness, the comparative lack of any need for complex forms of mediation. Foray argues that, as a result of the collision of these two events, a knowledge-based economy has emerged with two exceptional characteristics – first, the acceleration of knowledge production (and, I would argue, its much wider distribution); and second, a radical reduction in the costs associated with the codification, transmission, and acquisition of knowledge. As a result, knowledge is both more fluid – because it is developing so fast that it often resists standard forms of discipline-bound codification – and more accessible, because barriers to access have been

dramatically lowered (which, in turn, promotes pluralism, even heterogeneity, as well as the volatility in knowledge).

Foray draws an interesting distinction between 'off-line' knowledge production – essentially, formal research activities undertaken in dedicated institutions – and 'on-line' knowledge generation, or the more sophisticated forms of experiential inquiry and real-time learning that have succeeded 'learning-by-doing'. The latter would once have been dismissed as secondary and subordinate, although Polanyi's notion of 'tacit knowledge' did go some way to legitimizing less structured forms. One way to describe 'on-line' knowledge is to see it as the product of semi-structured, but powerful, modelling. A similar, although not exact, distinction has been drawn between 'Mode 1' research and 'Mode 2' knowledge production. Of course, it has been argued that these two kinds of knowledge are converging. 'Off-line' knowledge is becoming more fluid; as research priorities are increasingly influenced by application 'markets'; and, more practically, as state-funded 'blue skies' research shrinks. 'On-line' knowledge is becoming more structured.

But this distinction is important in another sense. Initially, it was assumed that the knowledge society, in its post-industrial guise, would come to be increasingly dominated by explicitly-organized forms of knowledge production, notably university-based research (hence would lead to an explosion in the number of 'knowledge workers'). Today, it is recognized that the knowledge society, in its more fluid post-modern guise, will not automatically lead to a strengthening of specialized research capacity at the expense of more distributed and less formal types of knowledge production. Indeed, the balance might tilt the other way (which, of course, means that the concentration of 'knowledge workers' will not necessarily increase). If this is so, the overarching thesis in Brown's and Hesketh's *The Mismanagement of Talent* – namely, that mass higher education systems are likely to produce an 'over-supply' of graduates – is undermined.

To attempt to restrict the production of graduates to the projected demand for 'knowledge workers' with expert and specialized functions (leaving aside the difficulties associated with workforce planning) is to address only half the demand. The other, very sizeable demand is for knowledgeable actors who are able to operate in an 'on-line', or 'Mode 2', knowledge environment – indeed, to range across the wider territory of the knowledge society (if such a distinction can still be made).

## KNOWLEDGE AS PROPERTY

The phenomena identified by Foray – the acceleration of knowledge (undermining traditional disciplinary taxonomies), and the reduction in the cost of knowledge production (leading to the wider social distribution of knowledge production) – have inevitably highlighted the idea of knowledge as ‘property’. And it is intellectual property that is the focus of McSherry’s book. But intellectual property can be viewed as both practice and discourse. The first is more straightforward. It is difficult to underestimate the importance of intellectual property in – and to – the modern university. All higher education institutions have had to develop sophisticated policies that maximize income from intellectual property revenue (IPR), which is an increasingly significant source of revenue as governments reduce public expenditure on higher education and science. At the same time, they have to balance the rights of those who fund research with the rights of those who undertake it; to decide how ‘profits’ should be shared between individual researchers (or their teams) and their institutions; and to determine whether teachers or institutions own copyright in teaching materials (because IPR is not confined to research).

None of these can be regarded as simply a technical question, or even as a policy requirement; all have important implications for how knowledge is described and conceived (which provides the link to intellectual property as a discourse). First, the struggle to maximize IPR income may restrict the free circulation of scientific findings, as the tensions and contradictions between university research and its commercialization increase. This may lead to new divisions between ‘IPR-rich’ and ‘IPR-poor’ departments. Second, the need to propitiate research sponsors, whether in the public or private sectors, has important implications for academic freedom, especially if sponsors seek to set questions, as well as to control the timing and terms on which findings are circulated. Again, new divisions are likely to emerge between subjects where sponsorship is readily available and those subsisting on more meagre rations (which may further strain the already fragile intellectual coherence and organizational integrity of the modern university). Third, the need to share IPR ‘profits’ between individual researchers (and research teams) and their institutions tends to undermine collegial values and the organizational culture on which universities continue to depend – the *habitus* of higher education. Finally, arguments

about copyright in teaching materials highlight the shifting balance of power between teachers and institutions, the wider transformation of professional relationships (with the erosion of links between expertise and autonomy that are at the heart of professional identities), and the changing nature of pedagogy in mass higher education.

McSherry is alert to all these dangers, as the subtitle of her book – ‘Battling for Control of Intellectual Property’ – clearly indicates. She fears that the modern university’s incorporation within the knowledge economy, which leads to a heightened emphasis on IPR, is undermining codes of behaviour – in her terms, a ‘covenant’ – based on the values of professional reciprocity and recognition of the public good that have sustained the academic system for more than a century. And it is in the research university, where this covenant was traditionally at its strongest, that the pressures to defend (and exploit) IPR are most intense. Although, in a knowledge economy, knowledge is property (especially in science and technology), it is much else besides. The present danger is that it will become more and more difficult to talk about these other aspects of knowledge. The speeches of many public figures (in business, politics and – sad to say – even the universities) and policy statements on higher education and science demonstrate that this danger is very real.

The language of IPR threatens to become a dominant discourse within the modern university. However, many of the debates swirling round IPR focus narrowly upon a particular conception of the knowledge economy that treats the density of expert ‘knowledge workers’ as its defining characteristic. But this is, at best, only half the story. Indeed, it is seriously misleading to regard modern universities merely as ‘knowledge factories’ producing ‘useful’ science and highly-skilled ‘knowledge workers’. In fact, it is through the medium of mass higher education systems that knowledge floods into society – and non-elite institutions are particularly active in this respect. So the current concentration upon IPR comes not simply from the key role that mainly elite universities play in the production of expert scientific knowledge, which can be quickly mediated into market (or socio-political) goods. It must also be explained in terms of the much wider distribution of knowledge production and the democratization/heterogeneity of knowledge that are also fundamental characteristics of contemporary society.

Once IPR was generated and traded within (comparatively) closed systems dominated by elite universities and government and

corporate laboratories, its regulation was a (comparatively) straightforward task. Today, in societies suffused with knowledge, IPR has become much more difficult to define and, therefore, to regulate. Intellectual 'property' is no longer confined to 'big science'. Nor is it controlled by 'big government' and 'big business'. On the contrary: it emerges in much less predictable ways, and in much more open environments. There are just too many knowledge 'producers' jostling for attention – and for their share. Nor is it any longer straightforward to identify the 'real' knowledge producers in the mass of producers, brokers, disseminators (and users) of knowledge; these have all become problematic, even contested, categories.

#### KNOWLEDGE UNCONFINED

The message of all three books questions the linear, reductionist, positivistic accounts of the knowledge economy that are all too popular among politicians. When the leaders of the European Union committed themselves in the Lisbon Declaration to making Europe the most dynamic knowledge economy in the world, they were thinking along such narrow lines. But they were not alone. Such thinking, often using the label of 'modernization', has become a staple of political discourse in the early twenty-first century. Although Brown and Hesketh call upon graduates (and their parents), governments, and the public to be more realistic about the knowledge 'dividend', they also hint that university education cannot be reduced to the search for competitive advantage in the employability race. They acknowledge that some graduates may even seek to 'opt out' – maybe as their parents tried to do in the 1960s.

Foray's conclusion is more modest. He does not claim that his – or any other – conception of the knowledge economy should be treated as a kind of 'general theory', and accepts that there are many things it cannot explain. He also argues that, even within the context of the knowledge economy, there are (moral) choices to be made – stimulated, for example, by increasing inequality between the knowledge-rich and the knowledge-poor, and by the implications of the whole-scale privatization of knowledge assets. In a postscript, Foray points to the danger of the deterioration of knowledge – because it is too available, too instant, and too context-free. He looks forward to a society in which the dynamic circulation of scientific and technical knowledge is assured, and

what he calls ‘the memorization of common knowledge and its absorption by everyone’ are guaranteed as well. McSherry, too, reaches a quasi-utopian conclusion. For her, the challenge is to develop languages that transcend arguments about particular pieces of work (and that fuel debates about IPR), and to embrace them all within a reinvigorated public domain.

Those who are uneasy about current trends in higher education and research policy often worry that the future, in the guise of the knowledge economy, belongs to their opponents. Like Matthew Arnold faced with the decline of organized religion, they can only listen to the ‘melancholy, long, withdrawing roar’ of older, more idealistic, more altruistic, more academic values. Their appeal, it seems, must be to the past – and most therefore be in vain. But this need not be. The knowledge economy, still more the knowledge society, is not a coherent phenomenon. Contained within it are raucously instrumental imperatives – to regard knowledge as a key economic resource to the exclusion of its use as a cultural resource or as an agent of emancipation – as well as rowdy forces associated with the acceleration, the instability, turbulence, dissonance, and irregularities of socially-distributed knowledge that can no longer be ‘owned’ by elites of power. Mass higher education systems are powerful expressions of both – ‘knowledge factories’ certainly, but also ‘open zones’ in which social transformation and cultural creativity can flourish.

#### ABOUT THE AUTHOR

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