The academic profession in a knowledge society

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Introduction

The massification of higher education has been accompanied by the degradation of the academic profession. Just as elite universities have been swallowed up in, and even swamped by, sprawling systems of not only higher education, but also post-secondary or tertiary education, so a proud professoriate has been swallowed up in, or swamped by, a burgeoning academic proletariat. This view of the condition of the academic profession may be too sharply etched perhaps, but it is one that commands substantial support in wider society maybe but undoubtedly within the profession itself. ‘Decline and fall’ is always a powerfully hubristic motif — the fear and thrill that the best days are past [1]. Accounts (both popular and academic) of the academic profession, certainly pander to these feelings. Higher education researchers and teachers suffer from lower social esteem and, as a fairly direct result, lower salaries. Their autonomy has been curtailed by the new assessment and accountability systems that have flourished in the so-called ‘audit society’ (and also by the quasi-market imperatives generated by the ‘knowledge society’). Their work has been (over?)regulated. Their scientific and cultural capital has been exploited and plundered even — “commodified, virtualised, globalised and post-modernised” in the words of one scholar [2].

That is one discourse, powerful in its (depressing) simplicity and pervasive because however much popular and academic accounts may differ in their subtlety, they tend to converge on these essentials of ‘decline and fall’. But, of course, there is another alternative discourse, which emphasizes the emergence of a new class of ‘knowledge workers’. These ‘knowledge workers’ are the products of mass higher education, not only in a literal sense because they represent the output of four decades of ‘academic production’, but also in a more symbolic sense because they embody the ‘graduate culture’ that is such a marked characteristic of advanced (and some less advanced) societies. Their dominance is such that they tend to overshadow older and more traditional elites and to marginalize other social groups, both the Weberian salariat and the Marxistant proletariat. The academic profession itself is a key component of this new class of ‘knowledge workers’, both in terms of its role in the (initial and continuing) formation of this wider class and in its capacity as that class’ leading cutting-edge. Within a knowledge-based economy and a knowledge-suffused society, teachers and researchers in universities and similar organizations are not only primary producers, but also serve as a form of secular priesthood. This second discourse is equally powerful and pervasive, although typically in wider social analyses and cultural speculations.
rather than in more detailed studies of the academic profession (where the first discourse tends to be more influential).

The two phrases in the title of this chapter — the academic profession and the knowledge society — reflect the differences, perhaps tensions, between these two discourses. Placing more weight on the former tends to emphasize the ‘decline and fall’ discourse, while placing more weight on the latter tends to highlight the ‘knowledge workers’ discourse. In many ways these different discourses echo the contrasting accounts of mass higher education. One emphasizes, once again, ‘decline and fall’ (‘dumbing down’) because students are no longer pre-selected (by social good fortune and prior cultural capital if not by academic potential). One also emphasizes the following:

- ‘levelling-down’, because new institutions have been able to challenge the hegemony of elite universities — and with some success;
- so-called ‘managerialism’, because academic communities have been superseded by bureaucratic hierarchies which has organisational cultures;
- and, of course, the intensification of the academic labour process (in teaching, because of worsening staff:student ratios, and in research, because of the pressure to increase scientific and scholarly productivity).

In contrast, the second, more positive account of mass higher education emphasizes diversity, pluralism and complexity — the opening-up of higher education to new kinds of student (whether to exploit available brain-power more intensively or to realise individual potential), to new kinds of institution (which may be more responsive to ‘market’ demands and social and cultural needs) and to new kinds of knowledge, as older distinctions between academic (or scientific) knowledge and vocational (or professional) knowledge, between ‘pure’ and ‘applied’ research, are lost in the creative vortex of the knowledge society [3].

The existence of these two different discourses about the condition of the academic profession, as of the two contrasting accounts of the massification of higher education, complicates more down-to-earth empirical analyses of how the academic profession and higher education will evolve. The selection of evidence and methodologies, the preference of theoretical or ideological frameworks, are both predetermined by the prior choice between these competing discourses. The aim of this chapter is to try to assess the impact of the knowledge society, which itself is, of course, a set of complex and sometimes conflicting trends and phenomena, on the future of the academic profession. In other words, it deals with the future of the academic profession in future-oriented terms, in the context of a knowledge society, rather than in terms of disappointed hopes, declining status and shrunken opportunities as measured against some notion of the ‘past’, whether actual or mythical. In that sense it takes sides. It does so because there is a need to redress the balance. For too long and far too often accounts of the development of the academic profession have been framed within the ‘decline-and-fall’ discourse, with the knowledge society being perceived as more threat than opportunity.

The future of the academic profession is both a timely and contested topic [4]. There are two main reasons for this timeliness, both of which lead into contested and uncertain territory. The first reason is that in many mature university and research systems there are growing concerns about the ability of these systems to renew themselves, especially their ability to attract young scholars
and researchers (and teachers) to replace those who first came into these systems in the boom years of the 1960s and 1970s and are now approaching retirement [5]. So there is a quantitative challenge, to renew the academic profession. However, this quantitative challenge itself is contested in two different ways.

First, the scale of the challenge remains uncertain. A recent report by the Higher Education Funding Council for England on the future ‘Higher Education Workforce’ suggested a number of scenarios ranging from a 40% increase in new recruits to a slight decline [6]. The key variable was the degree of expansion in student numbers, which demonstrates that the relationship between student growth and research capacity is still crucial, despite the growing tendency to assume that there are two distinct (and separate) ‘economies’ in universities, one for teaching and the other for research. This may still be the exception to the rule and, in reality, is confined to the ‘bottom’ (i.e. contract researcher) and ‘top’ (i.e. senior professor) ends of the academic labour market. A further complication, of course, is that the academic labour market is a global one, both at the point of entry, in terms of PhD students and postdoctoral positions, and between elite research universities. These international flows have to be taken into account when constructing models of future academic labour markets [7].

Secondly, however, this challenge is contested in a perhaps more fundamental way. After all, mass higher education systems have been producing mass graduate populations for more than a generation in most developed countries; two generations in the case of the USA. So, in theory, there should be no lack of new recruits to the academic profession. However, it is clear that a significant shift has taken place in the values and priorities of graduates. Many (most?) of these graduates no longer aspire to be researchers with the hope of one day becoming professors (just as they are much less likely to aspire to be high public officials and more likely to become entrepreneurs). It is not simply a question of changes in the values and priorities of graduates; the culture and ethos of the system have also been profoundly changed by massification. Mass higher education may provide significantly less congenial environments in which to pursue scientific and scholarly careers because its overall research intensity appears to have been reduced.

The future of the academic profession is a timely, and perhaps even more contested, topic for another reason; one that is more qualitative than quantitative. In one sense, it may be accurate to describe contemporary university and research systems as ‘mature’. But in another sense such a description is misleading if ‘mature’ is taken to imply that these systems are static or even relatively stable. In fact, higher education and research today are subject to processes of dynamic change and, as it sometimes seems from the ‘inside’, enforced change. Massification is, at best, half-complete. Universities, even the longest established and most prestigious, are being transformed: they are becoming ‘different places’ [8]. Part of this transformation can be attributed to the ‘natural’ effects of science and scholarship, although even this is far from being a comfortable or predictable process. The acceleration, the volatility, the ambiguity of science and scholarship have never been more evident. But part of this transformation can be attributed to external forces, notably new political pressures and the impact of the ‘market’. As a result, younger scientists and scholars are living in a ‘new age’. Hence, the quantitative challenge, i.e. the renewal of the academic profession, is compounded by a qualitative challenge, the need to adapt
to this new world in which researchers must also be politicians, communicators and even entrepreneurs, and in which stable institutions and structured professions have been eroded (and, consequently, scientific and scholarly ‘careers’ have been, at best, radically re-configured and, at worst, ‘abolished’).

The future of the academic profession, therefore, is a complicated subject. It is complicated because it is caught between two discourses — ‘decline and fall’ and ‘knowledge workers’. It is complicated also because the profession faces two challenges — quantitative renewal and qualitative transformation. It is against this background of complexities that the impact of the knowledge society (which, it must always be emphasized, is a complex bundle of different phenomena rather than a single formation) on the formative stage of development for younger scholars and, in particular, the impact of the more obviously utilitarian components of the knowledge society must be considered. This chapter is divided into three parts:

1. The first is a discussion of the theoretical and also the more practical issues that are relevant to this theme. The theoretical issues include the shift from a welfare state to a so-called ‘market state’, the problematization of expertise, the de-construction (perhaps) of professions and so on. The second set of more practical issues includes the role of research within mass, and more differentiated, systems of higher education, and the growth of other, maybe quasi-academic, professions within these systems that are not necessarily so closely linked to research and scholarship (at any rate in their traditional forms), and so on.

2. The second part is a more general consideration of the knowledge society — that complex set of different phenomena, sometimes inter-linked, but at other times contradictory. To reduce the knowledge society to a free-market, high-tech, globalizing (and globalized) phenomenon, is both misleading and too simple. There is a particular need to disentangle those phenomena that can fairly be described as ‘utilitarian’ and those that cannot be described in these terms.

3. The third, and final, part of this chapter will consider the implications of the formative stage of the development of scholars and scientists. The emphasis will firmly be on the re-configuration of academic careers within much more open higher education and research systems. The broad conclusion is that single-explanation linear analyses, of the kind preferred by many political and business leaders and by many people in leadership positions in universities and research institutions, need to be refined. ‘Portfolio’ careers are not necessarily the same thing as ‘market’ careers, and some of the pressures for change, which we judge to be ‘external’ (and perhaps therefore unwelcome), are better seen as linked to the ‘internal’ dynamics of the research process.

Theoretical and practical issues

The first of these topics are the wider theoretical and practical issues that are relevant to the development of the academic profession. In this discussion ‘theoretical’ is being used in a broad sense. In making a distinction between
‘theory’ and ‘practice’, there is no intent to imply a sharp or clear separation of issues; maybe ‘general’ and ‘specific’ would be better labels.

**Theory**

Three theoretical, or general, issues need to be highlighted. The first of these is the nature of the knowledge itself (or, more precisely, the broad conceptualisations of the knowledge society, because its more detailed characteristics will be considered later in the second part of this chapter). It is important to emphasize that, in a society in which knowledge itself (however broadly defined) has become a primary (perhaps *the* primary) resource, i.e. a direct rather than an indirect source of wealth generation, and in an economy in which the ‘market’ (again, broadly defined) has pride of place, it is difficult to escape the conclusion that knowledge has become to some degree a commodity in its own right. The second issue is that the welfare state, or the ‘social market’ state, has been, to some extent, replaced by what Philip Bobbitt and others have labelled the ‘market state’ [9]. What this means is not simply (or even mainly) that the state has shrunk and the market expanded, but also that the state itself is behaving in a more ‘market-like’ way. The implications of both these issues (or trends), the commodification of knowledge and the marketization of the state, for knowledge-producing and knowledge-transmitting institutions such as universities, which even in the USA are predominantly public or state institutions, are profound. The third issue is the changing nature of ‘professions’ (and especially professions grounded in expert knowledge — which the academic profession is, to an exceptional degree). Professions, as traditionally conceived, emerged in the second half of the 19th Century and were closely aligned with the contemporary development of strong national and bureaucratic states, large-scale industrialization and urbanization, and a strong, secular, scientific culture. They were key instruments in the advance of modernity; they also closely attached to the idea of the public (or the public interest). But today, the context is different: the state is being ‘hollowed out’ (and something similar is happening to big companies in the private sector); the discipline and order of the industrial society are being replaced by instantaneous gratifications of a consumer (and post-industrial?) society; and the idea of the public (and the public interest) has been attenuated. As a result, professions are being re-conceptualized and re-designed.

**Practice**

At a practical level, similar changes can also be observed, with the result that the external conditions shaping the formation of the next generation of scholars and researchers are very different from those that applied in the past. Once again, three deserve to be highlighted.

The first is the development of mass higher education systems and the growing demand for all kinds of ‘knowledge workers’ mean that research, scholarship and university teaching have now become mass occupations. They are no longer niche occupations staffed by small and selected cadres of experts. This can be illustrated with data from England (not the whole UK). There were a total of 96 000 permanent academic staff in 2003–2004 (20% more than in the mid-1990s) and more than 40% were aged over 50, which has implications for renewal of the academic profession. This figure applies only to permanent academic staff;
there are many more researchers working in universities on temporary contracts and also many working outside higher education in other research organizations. As has already been explained, it is difficult to produce exact projections of future demand, but, according to the most expansionary scenario, the required number of recruits could rise from 6000 to almost 10 000 annually [6].

The second big change is that the connections between research and teaching in universities, once regarded as organic and axiomatic, have become much less straightforward. The main reason for this is not necessarily, as is commonly supposed, the proliferation of higher education institutions with more and less intensive research missions. The main reasons are that both research and teaching have become more professional (and managed) activities, which has tended to split them apart, and that academics in universities now have to pursue multiple careers. They are not only just researchers, but are also research managers and research entrepreneurs; they are not only teachers, but also course designers, quality managers and (even) sales and marketing people. It is hardly surprising, therefore, that traditional doctoral and post-doctoral programmes are sometimes regarded as inadequate preparation for the ‘portfolio’ academic careers of the 21st Century — even when the substantial changes in these programmes to include more generic and entrepreneurial skills is taken into account.

The third important change is that universities, the institutions within which academic careers are shaped, have become much more complex and multi-functional. One key difference is that universities are now embedded within much more extended higher education systems in which differentiation of missions (especially research missions) is often explicitly encouraged, which raises important issues and sometimes creates cruel dilemmas for young researchers and teachers. (For example, there is increasing pressure to move around the system to maximize their potential and satisfy their ambitions, which are, of course, constantly being rebalanced over the course of their careers.) But another key, and maybe even more significant, difference is the impact of internal differentiation within institutions — the so-called ‘mission stretch’ which has led universities to incorporate more and more once peripheral activities into their core mission. The impact is even greater when ‘mission stretch’ is compounded, as it often is, by ‘mission volatility’.

For the next generation of scholars and researchers, these trends can produce bewildering, but also intoxicating, effects. But either way, they are highly significant. Young scholars and researchers now encounter an environment with more emphasis on markets, a dwindling sense of the public interest (and a weakened sense of a public ethic), the erosion of traditional professional norms and structures, a mass and multi-tasking occupation, and much more complex (but also more volatile) ‘home’ institutions.

**Knowledge society**

The major features of the knowledge society (and, in particular, of its instrumental and less instrumental characteristics) are the subject of the second part of this chapter. The standard accounts of the knowledge society tend to emphasize three elements:

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1. the central importance of science and, especially, advanced technology, in particular, in the information and communication technologies (ICTs), which explains why the concepts of globalization and of the ‘knowledge society’ have got so jumbled up;

2. the growing emphasis on the market (and, by implication, the waning influence of the State and, more debatably, civil society in its non-market guises);

3. the dominance of a world culture (what used to be called a mid-Atlantic culture until the rise of east and south Asia made that label an anachronism) or, perhaps more accurately, world ‘brands’, which of course is closely linked to the second element.

So, the ICT revolution, round-the-clock round-the-globe markets and ‘Coca-Colaization’ sum up globalization in the popular mind and also in the academic literature. However, there are other possible definitions of the knowledge society apart from the free-market, high-tech definitions that are so familiar (and which tend to dominate political discourse). Three alternative definitions need to be considered.

‘Mode 2’ knowledge production

The first alternative definition is the much wider distribution of knowledge production within a knowledge society, which has been described in terms of a shift from so-called ‘Mode 1’ science, of the kind traditionally undertaken in university and other specialized research facilities that is cognitively coherent and conceived of in linear terms, to ‘Mode 2’ knowledge production, which is much more widely distributed, socially complex and multi-linear [10]. That is a very simple (perhaps too simple) statement of what is a more complex and more subtle argument, which extends beyond the political, financial and organizational dimensions of research policy into the methodologies and epistemologies of science - and even their social and cultural consequences [11]. Much of this is not relevant to the subject of this chapter, i.e. the future of the academic profession in a knowledge society. However, there are two aspects of ‘Mode 2’ knowledge production, one obvious and the other less obvious, which are worth emphasizing.

1. Advances in ICIs are making it possible to establish much more complex, much more instantaneous and much more robust networks. As a result, collaborative research, often with an increasing number of participants, is becoming the norm. Nor is this simply an organizational or logistical phenomenon. It affects intellectual norms as much as social practices. The growth of interdisciplinary research demonstrates that something very similar is happening to the cognitive maps of knowledge. It is possible to observe analogous collaborative phenomena outside the university, such as the global sourcing of goods and services and just-in-time manufacturing. Advances in ICT are also encouraging the emergence of entirely new ‘communicative cultures’ that are highly interactive, intuitive, more visual and spontaneous, and are very different perhaps from the more cerebral logos-based culture, which has dominated intellectual life in the West for two centuries. As a result, the capacities and aspirations of students may have been greatly changed, a challenge for the academic profession.
2. The second aspect of ‘Mode 2’ is an increasing awareness of the complexity of the links between research and innovation; an awareness that is reflected in science, technology and innovation strategies in many countries. Fundamental, theoretical, blue-skies research is no longer privileged and prioritized to the extent to which it once was. It is now more widely accepted that other forms of research, more applications- and action-oriented, can make major (and direct) contributions to the development of ‘new’ knowledge; it is also accepted that the processes of innovation can drive scientific advances, as well as the other way round.

Culture and policy
A second definition of the knowledge society places greater emphasis on its social and cultural aspects, rather than simply its economic and scientific dimensions. Reference was made earlier to the spread of ‘world’ culture (and in particular, of ‘world’ brands) as one of the key elements of globalization. But the development of ‘world’ culture is not a straightforward phenomenon. The complaints about the pervasive (and perverse?) influence of Coca-Cola or McDonald’s focus merely on one aspect. To an even greater extent perhaps than in the case of science and technology, these cultural forces, however powerful and dominant they may appear, pass through a complex process of mediation; they are ‘read’ in very different ways and have different meanings attached to them in different national and cultural contexts. This process has been described as one of ‘creolixation’ (after the mixture of European and native languages in the Americas).

This can also be observed at the level of public policy. There is an extensive literature about the perils of policy ‘borrowing’ (which the UK has been particularly prone to do — mainly, sadly, from the USA rather than from the rest of Europe). Although derived from supposedly objective research (itself rooted in ‘unified’ social sciences), policies can take on divergent meanings when applied in specific national and cultural environments. As with Coca-Cola and McDonald’s, the very intensity of cultural (or, in this case, policy) influences under conditions of globalization has tended to emphasize these ‘ambiguities of reception’. Sometimes these ‘ambiguities of reception’ lead to strategies of resistance, although that is perhaps to over-emphasize the adversarial quality of these engagements. The key point is that the pattern of cultural influences, apparently dominated by particular forces (the ‘West’, the market, science), is in fact a multi-lateral and multi-linear process.

Controversies and the agora
There is a third definition of the knowledge society, which is also very relevant to the environment in which young scholars and researchers now find themselves. This is the role of controversies in the development of new knowledge; not ‘internal’ controversies within established disciplines (of which there have always been many examples and which have always provided a key dynamic in the evolution of disciplines), but ‘controversies’ in the public sphere. Examples of such controversies are the often passionate debates about nuclear power, genetic engineering or global warming in which scientists are ranged against each other, and also about stem-cell research or animal experiments in which scientists must be able to counter powerful political or moral objections. The public arena in which these controversies and debates take place has been described as the
‘agora’, a wider arena that embraces not simply the market, but also the political and moral (or religious) spheres. The agora is populated not only by the ranks of ‘experts’ (themselves often in conflict), but also large minorities, even majorities, of highly educated people, the product of two or more generations of mass higher education. And the agora is powered (literally) by always-on real-time communication technologies, of which the Internet is the best example, which means that the interactions between research and society, between experts and the mass of the people, are direct and instantaneous; they no longer need to be mediated through, and policed by, disciplinary hierarchies or even established professions.

A very different kind of environment is created for younger scholars and researchers if these other definitions — of distributed (‘Mode 2’) knowledge production systems, of the volatility (and ambiguities) of ‘cultural’ knowledge, and of the role of ‘controversies’ in creating new knowledge and the unmediated interactions between the experts and the masses — are added to the traditional definition of the knowledge society as a high-tech (and probably free-market) domain. It is an environment in which transaction spaces, zones of engagement, translational instruments acquire as great an importance as the ‘primary sites’ of scholarly and scientific production. It is also an environment that requires new kind of skills to navigate. But it probably emphasizes the utilitarian and instrumental aspects of an environment that is complex, fluid, volatile and even ambiguous.

**Implications for the formation of young researchers**

The third part of this chapter is a discussion of the impact of this new environment, the knowledge society in all its complexities, on the education, training and careers of younger scholars and researchers. Here two accounts are available, which to some extent overlap but are, nevertheless, distinct. The first is the standard account, which emphasises the external pressures on researchers. The world of research is regarded as the calm centre within a turbulent world or, more accurately, a clear distinction is drawn between the endogenous forces that operate within and between academic disciplines and the pressures from the external environment. The second account emphasises the internal dynamics of the developing research system (or, maybe better, the wider knowledge production system) and their close links with the wider dynamics of social, economic, intellectual and cultural change. These two accounts, of course, have strong affinities with the alternative discourses about future prospects for the academic profession discussed in the introduction — ‘decline and fall’ or ‘knowledge-workers’.

The first, and more familiar, account emphasises four key trends:

1. the growing importance of the State (politics) and/or the market in determining research priorities; the era of disinterested and unconstrained ‘blue skies’ research is (apparently) over. Now researchers must learn to play to the political gallery and/or ‘play the market’. The use of these rather negative, even pejorative, terms can perhaps be justified because many researchers resent these changes, seeing them as constraints on scientific creativity, and potentially even more seriously as undermining high-quality research;

2. the increasing emphasis on accountability. This has far-reaching and fundamental effects. Not only are research priorities shaped (over-
influenced?) by ‘external’ considerations, but research processes (methodologies, even epistemologies) are also subject to a range of constraints. For example, some forms of research are now seen as an unethical (like stem-cell research or animal experimentation). Increasingly research is subject to value-for-money scrutiny, quality measurement, impact assessment and other forms of ‘performance management’;

3. the need for researchers to pay much more attention to dissemination (and not just within traditionally defined scientific and scholarly communities but much more broadly within the public arena). Of course, a concern for the better public understanding of science has been longstanding. Scholars in the humanities and social sciences (and also, although to a lesser extent, researchers in the natural and applied sciences) have always had a role as ‘public intellectuals’. But the obligations of dissemination, like the burden of accountability, are now very much greater. It is no longer simply a question of improving the public’s understanding of science; scientists’ understanding of the public must also be improved.

4. Finally, as a result of all these changes, researchers are no longer allowed just to ‘do research’; they also have to be performance managers and entrepreneurs, developers and disseminators. This helps to explain why so many PhD programmes now try to develop career- and, indeed, life-skills. Sometimes this is justified by the fact that many PhD students no longer follow traditional academic or research careers, but will take up non-research careers in other parts of the public service or in the private sector. So they need to be able to ‘sell’ themselves to these alternative employers. Another important reason is that the research process itself is being transformed. Even PhD students who go on to follow apparently ‘traditional’ academic and scientific careers need these new skills.

This is the first account of the new environment within which younger scholars and scientists have to operate; however, a second account is also available, an account that does not deny the significance of the trends and phenomena described in the second part of this chapter but sees them in a different and more positive light. This second account has four key elements:

1. The first is the politicization and/or ‘marketization’ of research — apparently common ground with the first account. However in a knowledge society the boundaries between different sub-systems have become highly porous. The higher education and research systems interact far more intensively with the political and economic systems. Too often in universities this fuzziness of boundaries is viewed as an ‘invasion’ of a previously highly autonomous (or, at any rate, clearly bounded) domain. This is not necessarily good history; the autonomy enjoyed by universities and scientists was always a conditional and historically contingent on the convergence of scientific, economic and political interests. In any case there has often been a failure to recognise that ‘we’ (the higher education and research systems) are in turn invading ‘them’ (the domains of politics and the market).

2. The second element is the increasing emphasis on accountability — once again, apparently, common ground. Universities typically experience this pressure for greater accountability as annoying, intrusive and something
that must be complied with as the price to be paid for safeguarding the flow of research. However, accountability can also be defined in different terms (and opposite ways?) — as ‘internal’ and integral to the reflexive processes of research. Scholars and scientists have always been accountable to their own disciplinary communities for the quality of their work — through the elaborate process of peer review. Perhaps these processes are merely becoming more sophisticated, more complex and more inclusive. In addition, the audit society cannot be reduced to an intrusive process whereby ‘they’ audit ‘us’; it has to have close links with how self-organising systems operate and renew themselves, and also with what have been called ‘rituals of self-verification’ [12].

3. The third feature element is the growing emphasis on dissemination — more common ground. If an essentially linear view of the research process is adopted — basic research is undertaken, the results of which are then applied and transferred — dissemination can appear to be an extra chore. But, if a non-linear view of the research process is preferred, dissemination is not an activity that is undertaken after the research is completed, a kind of ‘downstream’ activity; instead it is embedded within the research process itself, as an ongoing and two-three-or four-way dialogue between research ‘producers’, research ‘users’, research ‘managers’, research ‘brokers’. Even if the value of the concept of the agora described earlier is questioned, or the significance of controversies in the production of knowledge is downplayed, the complexity and multi-linearity of innovation processes within a knowledge society have to be acknowledged.

4. The final element is the changing shape of research careers and in particular, the ‘multi-skilling’ of younger researchers (in the sense that they are now expected to learn communication and business skills in addition to working on their specific scientific projects). Sometimes these other skills are seen as providing PhD students and young researchers with a ‘safety net’, just in case they are unlucky enough not to make the grade as researchers, but these skills are needed by all successful researchers in the new environment created by the emergence of a knowledge society.

This new environment in which younger scholars and scientists now have to operate reflects the dynamics of the knowledge society, which cannot be reduced to a free-market high-tech ‘fix’ for reasons discussed earlier in this chapter. The knowledge society is a highly complex phenomenon. For example, the cultural dimensions of innovation are not less important in a world where global knowledge collides with local environments (and both knowledge and environments themselves need to be comprehensively deconstructed and then reconstituted). At the very heart of modern innovation (and research) systems are these zones of transition, trading spaces or borderlands within which ‘ambiguities of reception’ must be managed as creatively as possible. As a result the research system itself may appear to some, particularly the more traditionally inclined, to be becoming less focused on ‘research’ and even ‘contaminated’ or invaded by non-research factors. In the same way (and by some of the same people), the wider higher education system may appear to be becoming less ‘academic’ and again
‘contaminated’ through the influence of wider social considerations as a result of massification.

However, both these views, which together add up to a ‘discourse of decline’, may fail to give sufficient weight to the powerful, and often more positive, dynamics operating within the knowledge society. To describe these dynamics in purely instrumental or utilitarian terms is also misleading. The knowledge society is as much a kaleidoscope of images, impressions and intuitions as an engine within which knowledge of produced and processed. Higher education and research are caught up in these kaleidoscopic trends and events, not only through the fragmented (but intense and creative) lives of their students (and staff, especially younger researchers and scholars), but also within the inner lives of disciplines (and interdisciplinary teaching and research). They are exposed to all the forces represented in the knowledge society and also shape, often decisively, the emerging forms that society takes, that is, the social, cultural and intellectual forms as much as, or possibly even more than, the economic, technical and scientific forms.

References

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