

Travelling and embedded policy: the case of knowledge transfer

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Knowledge transfer (KT) has entered the higher education arena in the UK as the ‘third sector’ of higher education activity—along with research and teaching. Its antecedents lie in the commercialization and technology transfer of the late 1980s and 1990s, and this business-like orientation remains dominant in the KT policy discourse. This paper explores the extent to which policy for KT may be understood both as ‘travelling’ policy shaped by globalizing trends in pursuit of successful competition in the new knowledge economy (KE) and as ‘embedded’ policy mediated by local contextual factors that may translate policy to reflect local priorities and meanings. In considering evidence of ‘embedded’ policy the paper develops its arguments through preliminary analysis of KT policy in Scotland where—at least at the level of discourse—there is an attempt in post-devolution Scotland to encourage KT in the broader public interest. However, KT’s antecedents may continue to shape the engagement of academic staff in Scotland, as may the wider context of UK policy steering in higher education.

Travelling and embedded policy

The framework for this paper is created by the emergent global agenda for education policy, including policy for higher education. Globalization frames this discussion: globalization is usually conceptualized in relation to its capacity to dissolve distinctions between the international and the domestic, the global and the local, and its effects are evidenced in core economic activities (where multinationals operate across continents and capital flows across nation states) and in media and electronic communications (which make the flows of capital possible), in financial markets, the internationalization of corporate strategies and management, the spread of worldwide patterns of consumption, the internationalization of nation states and the diminished capacity of national governments (see, for example, Castells, 1998; Held *et al.*, 1999; Gray, 2000). Yet globalization foregrounds education and education

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policy in specific ways that attempt to harness education systems to the rapid and competitive growth and transmission of technologies and knowledge. For example the World Bank identifies the human capital requirements of adaptability, creativity, flexibility and innovation as those to be delivered by education and asserts that such qualities are best provided in deregulated education systems in which competition is maximized and business is embedded (World Bank, 2002). Education policy-makers promote the attractiveness of their local products in the global marketplace, attempting to tie roving capital into long-term relationships based on the satisfaction of the needs of the new knowledge economy. Those needs require that public institutions, as well as business, become attuned to continuous change, as UK Prime Minister Tony Blair argues in his foreword to the Department of Trade and Industry's *Our competitive future: building the knowledge-driven economy*, we must have constant improvement to cope with change:

The modern world is swept by change. New technologies emerge constantly, new markets are opening up. There are new competitors but also great new opportunities. ... This world challenges business to be innovative and creative, to improve performance continuously, to build new alliances and ventures. ... In government, in business, in our universities and throughout society we must do more to foster a new entrepreneurial spirit: equipping ourselves for the long-term, prepared to seize opportunities, committed to constant innovation and improved performance. (DTI, 1998, p. i)

This is a policy trajectory that is preoccupied with the construction of a 'knowledge economy' and 'learning society'. Within this trajectory schooling/education/training systems are acknowledged to be significant instruments of economic and social change: for building intellectual capital and capacity for innovation; for enhancing workforce development in ways that realize economic and, to a considerably lesser extent, social and civic outcomes; and for managing communities in ways that seek to minimize alienation and exclusion, and that promote self-reliance and resourcefulness. Enterprising selves are promoted (in all senses of the word) in schooling and work, including research work.

At the international level a coherent set of policy themes and processes has emerged: 'big' policies for a small world, as Ball (1998) puts it, through which policy-makers (at national, international and transnational levels) are reshaping structures and systems. Some recent work in education policy has attempted to acknowledge trends towards policy convergence while recognizing the continued effects of context (Lingard, 2000; Ozga, 2005). As Jones and Alexiadou (2001) argue, the relationship between convergence and divergence in policy indicates growing embeddedness of 'traveling policy' within national policy elites, and differing degrees of local 'policy inflection' in which various forces (local policy communities, trade unions, social movements) have forced adaptation of global agendas, or in which local policy elites have integrated travelling policy with national agendas (Alexiadou & Jones, 2001, p. 2). They take travelling policy to refer to supra and transnational agency activity, as well as to common agendas (for example for the reshaping of educational purposes to develop human capital for the knowledge economy). Embedded policy is to be found in 'local' spaces, (which may be national, regional or local) where global policy

agendas come up against existing priorities and practices. This perspective allows for recognition that, while policy choices may be narrowing, national and local assumptions and practices remain significant and mediate or translate global policy in distinctive ways.

Some commentators, notably Allan Luke (Luke, 2003), have suggested that the fluid and risky context of globalization has contributed to some recognition among policy-makers that continuing dependence on neo-liberal principles of system redesign is insufficient. At the very least, Luke suggests, such adherence fails to provide a coherent agenda, in a situation where the need is for 'a strong normative vision of what might count as just and powerful educational systems in new economic and social conditions, in increasingly complex, risky and unjust transnational contexts' (Luke, 2003, p. 91). For the most part, however, even as policy texts express concern about the risk of social exclusion, there is continued reliance on restricted forms of evidence, on performance measurement and management, and on superficial and contradictory acknowledgements of difference and diversity. As a consequence there is a failure to take full account of social science research-based evidence that is relevant to meeting the challenges posed by such risky, complex and unjust contexts. Evidence, for example, about poverty and its consequences, about changing demographics and cultures, about the networking and capacity-building potential of social capital, about life chances and pathways, about access to employment and education, about changing economies and institutions that could be 'transferred' into the making and assessment of policy in education, in order to address the challenges of constructing a 'strong normative vision' for what Luke calls the 'post-market' agenda for education (Luke, 2003, p. 90).

Knowledge transfer and evidence-based policy

Current 'travelling' policy seeks to discipline educational (and other social science) research and make it useful to policy. Transfer from social science research to policy is a complex process, and there is a considerable literature on the problematic nature of the relationship between research and policy (see, for example, Marginson, 1993; Ball 1997, 2001; Ozga, 2003). Put briefly, policy-makers are steering research towards problem-solving and the consolidation of knowledge about 'what works'. This is a global trend: an element of 'travelling' policy that has already shaped the dominant model of educational research in North America and that will have considerable impact elsewhere (see, for example, Ranis & Walters, 2004; Ozga *et al.*, forthcoming).

The difficulties of extracting relatively straightforward messages from research to inform action have led to a growth of policy interest in the process of 'transfer'. More and better transfer of the knowledge locked up in research is urgently demanded by policy-makers, perhaps especially where this demand is driven by the need to support improvement in the performance of particular areas of public sector provision such as education, in the face of increased global competition and pressure to transfer costs to the consumer. The evidence-based 'movement' is supported by policy-makers'

claims that ideological constraints no longer apply, and their consequent enhanced capacity to act on the basis of evidence rather than prejudice. This then is the context that has shaped KT as an element of HE policy. There is little recognition of the complexity and conflict about evidence that may follow from the different orientations towards evidence of researchers and policy-makers (Ozga, 2004).

Our arguments for the progressive potential of KT connect to more recent research and associated literature on KT that stresses the need for long-term, negotiated and iterative approaches to transfer and policy learning (Lavis *et al.*, 2003). We further suggest that there are productive spaces in the UK policy context where ‘embedded’ policy may enable the development of KT as a process of mutual learning that may be able to address—or at least identify and mediate—some of the problems generated by ‘travelling’ policy agendas. We argue that while current KT policy can be clearly located in the UK Government’s tendency to translate supra-national agendas in terms of competitiveness and the discourse of the market (Flynn, 2000; Newman, 2000), the post-devolution context enables this agenda to be received and inflected rather differently in Scotland (Ozga, 2003, 2004). While we interpret the evidence that we have uncovered so far (and which we report below) as indicative of the association of KT with a commercialization agenda, we also suggest that there are, indeed, spaces for recontextualization and redefinition of KT within the Scottish polity.

The commercialization agenda in HE is part of the continued and accelerated *economizing* of higher education, which has been in process since the 1980s (Halsey, 1995; Howells *et al.*, 1998; Wilmott, 2003). We cannot offer a comprehensive review of changes to public funding for higher education here: we simply wish to note the trends towards selectivity, competition and enterprise as strategies for managing resource allocation in HE. Commercialization and the growth of private sector interest in higher education has been developing and growing since the 1980s in the UK. Examples of projects that promote links between enterprise and higher education include STEP, the Shell Technology Enterprise Programme (established in 1986, and sponsored by Shell Oil and the DTI, STEP places undergraduates into medium- and small-sized companies); LINK (with its science and technology focus, this programme promotes relationships between businesses and research organizations) and Faraday Partnerships (to encourage firms and research organizations to work together and exploit new science and technology), plus a range of other, smaller schemes, including Grow Your Business with Graduates (aimed at work experience and business development), the Training for Innovation Programme, and Enterprising Students (Howells & Mitchie, 1998). More recently the UK Government’s commitment to business engagement with HE resulted in the *Lambert review of business–university collaboration* (HM Treasury, 2003), a high profile report, calling for closer working practices between HEIs and business. This is the quickly evolving HE policy milieu that provides the context for knowledge transfer, and which may inform its development and influence the ways in which individual institutions and academics engage with it. That milieu has been profoundly reshaped by the overarching framework of engagement with the knowledge economy as the key driver of change in higher education.

Problematizing the new knowledge economy

Pursuit of the new KE drives education policy across the globe. The constituent nations of the EU declare that they are attempting to become ‘knowledge economies’. The OECD and the World Bank stress that education and training provide the entry requirements to participation in the new KE. Education and training dominate policy agendas focused on upskilling new knowledge workers and developing research and thus the knowledge that will secure success (OECD, 1996). Productive knowledge is believed to be the basis for national competitive advantage within the international marketplace. Research is fundamentally affected by the idea of the knowledge economy. Research is, after all, the production of knowledge and is understood in KE terms as central to economic growth. Knowledge here is *internal* to, i.e., part of—rather than *external* to and distinct from—the economic process, and growth is dependent on maximizing the outputs of knowledge workers and the productivity of knowledge resources (Peters, 2002; Kenway *et al.*, 2004). National systems seek to ensure competitive advantage through the commercial exploitation and application of knowledge. Knowledge production is brought into close relationship with economic policy—what matters is what works for the economy. Universities and their research are significant players in this policy frame. In the field of education it is apparent that research is both implicated in and mediates the trajectory towards a knowledge economy. There are enhanced research steering practices emerging across different national systems, experiencing different degrees of pressure from supra-national agencies (for example the World Bank, OECD), and affected to greater or lesser degrees by emergent regional blocs (for example the European Research Area) and by issues of national and peripheral representation (for example the dominance of American foundations, approved research methodologies and American-derived citation indices, and so on) (Ozga *et al.*, forthcoming).

Across the globe, as Kenway *et al.* (2004) argue, there is a trend towards prioritizing techno-scientific research and its modes of operation and organization—concentrated in centres of excellence, working in teams characterized by differences in conditions of work and employment rights: segmentation that follows from market-driven practices of funding and steering. These modes of steering are shaping all research. Intellectual autonomy is challenged by the need to meet industry needs and science is becoming ‘less a public good than a tradable commodity’ (Kenway *et al.*, 2004). The World Bank publication *Constructing knowledge economies* asserts that:

Continuous, market-driven innovation is the key to competitiveness, and thus to economic growth, in the knowledge economy. This requires not only a strong science and technology base, but, just as importantly, the capacity to link fundamental and applied research, to convert the results of that research to new products, services processes or materials and to bring these innovations quickly to market. (World Bank, 2002, p. 21)

This policy discourse promotes a wide range of activity and justifies major shifts in national, institutional and individual practices and processes, yet it remains, for the most part, unexamined and unspecific. The invocation of the new KE in policy discourse has all the characteristics of what Lindblad and Popkewitz (2000, p. 254)

have called '*topoi*': slogans or banalities that are universally accepted as truths and do not need to be explained or justified: they act as a substitute for serious analysis and as a way of mobilizing public opinion. The term was used to describe the responses of policy-makers in the major European study, Education Governance and Social Inclusion and Exclusion (EGSIE), who, when asked to explain changes in governance and regulation of education, justified change by invoking the need to be responsive to global, knowledge-based economies.

The knowledge economy is thus a policy meta-narrative that assumes the commodification of knowledge in a system of global production, distribution and exchange. Michael Peters has analysed the contributory strands of this narrative that bring together ideas from economics, organization theory and sociology (Peters, 2001, pp. 4–6). He argues that there are three main elements. The first element is new growth theory/economics of human capital. This is a revived human capital theory but with a twist that stresses the production of new knowledge. The second main strand derives from management and organization theory as part of the development of new forms of work organization (performance measurement/management, team work, flexibility, benchmarking, core/peripheral workforces). This element supports effective knowledge management and exchange. Finally the new KE draws on ideas derived from the sociology of knowledge: these include the argument that knowledge will replace labour and property as the key building blocks in society. Possession of knowledge rather than property will define distinction and allocate status. Together these elements produce a powerful set of assumptions that enable policy-makers to position themselves as successful managers of rapid change and development (modernization). This positioning promotes an agenda for the future in which potentially disruptive energies (including those developed in research in HE) are harnessed to promote entrepreneurship and continuous scientific and technical advance.

As our earlier discussion suggests, however, the context of globalization produces risky and uncertain environments that require complex knowledges and strategies to support knowledge production and use. Yet we see an assumption that research energies and their accompanying tendencies to complexity and dissent must and can be 'managed' without risk and without loss. There is a related assumption that uncommodified knowledge relations and exchanges are disruptive of efficient management and can be excluded from the spaces of governance, research and learning, also without risk and without loss. The emergence of risk, uncertainty and the erosion of trust in the audit culture are well-documented in HE in the UK (Power, 1997; Shore & Wright, 1999) as it is required to become ever more accountable, transparent and efficient. There has been considerable increase in monitoring and surveillance of activity, through such mechanisms as the RAE, the assessment of teaching quality, the increased use of benchmarks and performance indicators (Shore & Selwyn, 1998). Such mechanisms have eroded structures and relationships that maintained trust between academics and their managers, and between universities and the state (Woodward, 2002). In our view these risks are not amenable to managerial technologies and extend to relationships and resources in the social, political and cultural spheres.

In their research into the status and impact of the new knowledge economy on culture and creativity in Australian universities, Bullen *et al.* (2004) argue that a technological and economic reductionism prevails in current Australian policy. The absence or reduction of a social and cultural dimension is said to lead to a deeper, more profound, form of risk—located beneath the more obvious uncertainties surrounding commerce, business and global markets: a spectre haunting the ‘knowledge economy’ (Beck, 1992; Lash & Urry, 1994; Kenway *et al.*, 2004). Life in contemporary society is marked by the continual erosion of tradition, placing individuals in potentially disorientating and problematic circumstances: ‘In the absence of such monitoring structures, the self becomes self-monitoring and self-interpreting, and knowledge is subject to constant revision’ (Bullen *et al.*, 2004, p. 11).

The point we wish to make here is that individuals may require a much wider approach to and engagement with knowledge than that implied in current policies tailored to meet the needs of the KE. The failure of policy-makers to acknowledge the ambivalent and unstable nature of the KE contributes to a limited view of knowledge and loses sight of its capacity to create meaning and value beyond the marketplace. It is these capacities that we mean when we refer to the progressive potential for engagement with KT. Our concern to interrogate KT in relation to its progressive potential is fuelled by the gap between HE’s potential to contribute to a complex understanding of knowledge in the new KE and the limited versions of engagement currently available in KT policy. Such limited, commercialized discourses may distance rather than attract academic engagement with KT, especially in social sciences, arts and humanities. At this point it may be useful to look at some relevant academic work on the nature of knowledge, that could contribute to closer and more complex academic engagement with KT.

Understanding KT: knowledge about knowledge

The policy discourse around KT is dependent on a limited view of knowledge as output or product. As we have already seen, policy-makers do not readily engage with ideas that express the provisional and insecure nature of knowledge, but look instead for tangible and stable knowledge forms. However, recent academic explorations of the nature of knowledge have included discussion of the relationship between the kind of knowledge in play and its transfer and transferability. Different knowledge types that are distinguished by their degrees of tacitness and ‘stickiness’ have been identified. ‘Sticky’ knowledge is said to be more difficult to transfer, in contrast to codified knowledge. These ideas have indeed entered the policy arena in some fields, notably education, but in highly selective ways. For example Hargreaves has argued forcibly that the absence of codified knowledge in the field of education acts as an inhibitor of effective learning (Hargreaves, 2000, p. 219), and uses this to support his call for more codified evidence, and a narrowing of educational research and professional formation. In contrast, technology is often invoked by policy-makers as providing a case of codified and apparently more successful transfer (Schuetze, 1996, 2000). However these influential assumptions about technology transfer may

be mistaken. The recent academic literature is attentive to the conditions and contexts of transfer, including attention to transfer of knowledge across boundaries through strategic alliances (Mowery *et al.*, 1996; Inkpen & Dinur, 1998; Simonin, 1999). This search for better understanding of transfer is evidence of frustration with lack of transfer even in the field of technology and has led to more attention to issues that might broadly be described as pedagogical (Cohen & Levinthal, 1990).

A further literature suggests that knowledge should be understood as divided into distinct categories on the basis of the form of knowledge production: Mode 1 or Mode 2. Mode 1 is derived from traditional, discipline-based research, while Mode 2 is a hybridized research that combines the academy, the state and the private sector (Gibbons *et al.*, 1994). Mode 2 research is more obviously suited to KT. This is an argument that is highly contested and critics point out that it exaggerates both the strength of disciplinary research and the impact of new conditions of research production (Fuller, 2003). It is interesting to consider whether this supposed shift in modes of knowledge is better understood as reflecting shifting conditions of knowledge production rather than independent developments in the nature of knowledge itself.

There are some interesting and relevant discussions of the changing relationship between knowledge production/research and teaching in what Edwards and Usher call 'globalized conditions' (Edwards & Usher, 2000, p. 74). It could be argued that KT has always existed in the form of teaching. Changes in knowledge production and in the control and flow of information have profound implications for teaching and more optimistic readings of these developments suggest that this may enable a closer connection between research and pedagogy. Here a connection between Mode 2 knowledge and 'communities of practice' (Lave & Wenger, 1991) may be possible. In this interpretation research is democratized and knowledge is co-constructed in practice. This is a perspective that supports the progressive potential of KT. However it is not as yet visible in current research training policy or in programmes of professional development. Indeed, despite acknowledgement of the importance of a user perspective in, for example, research council grant applications, it is clear that the trend is towards more scientized, less democratic practice in research design and delivery. The research assessment exercise (RAE), with its emphasis on high status outputs (i.e., publication in prestigious journals) rather than, for example, practical impact on professional practice, is a factor here.

Developments in understanding knowledge support a shift from traditional linear models of knowledge production and subsequent dissemination to an interactive, iterative, problem-focused, trans-disciplinary model (Gibbons *et al.*, 1994; Nowotny *et al.*, 2001; Delanty, 2001). Such developments are in harmony with broader approaches to KT that move beyond technical processes into discussion of its scope and purposes, and that include knowledges that can promote critical political and social awareness and understanding. In its dominant, commercial construction there seems to be little scope for transfer from the arts and humanities and the social sciences, yet these areas may have important contributions to make to enabling the creation of meaning and value beyond the marketplace. We turn now to an interrogation of the policy texts that promote KT in the UK and Scotland.

The KT policy discourse in the UK and Scotland: convergence and divergence

On the assumption that not everyone is familiar with the operation of the Scottish parliament, here is some background information. Devolution here means political devolution: that is the creation of a new set of policy relationships within the UK following the creation of separate assemblies with devolved powers in Wales and Northern Ireland, and a separate parliament in Scotland which was established in 1999. The Scottish parliament has responsibility for all matters not 'reserved' by Westminster. Most of the 'reserved' matters relate to the common UK market, but they also include international relations, defence and provisions for dealing with terrorism, immigration and nationality, national security, employment and equality legislation, nuclear safety and (interestingly) research councils. Education and training are devolved matters, as are health, the environment, agriculture forestry and fisheries, sport and the arts, local government, social work, housing and planning, economic development, the law and home affairs including criminal justice. Devolution in the UK, according to Keating, is not like the Spanish experience: it builds on existing administrative devolution in which each of the UK territories had distinctive ways of making policy and delivering services (Keating, 2001, p. 2). Indeed Paterson argues that Scotland's social welfare policy had a Scottish character for a long period pre-devolution, that was, perhaps, intensified during the Conservative administrations led by Thatcher (Paterson, 1997).

Education was traditionally an area of policy where Scottish distinctiveness was enshrined and asserted, and, as suggested above, the legitimacy of the Thatcher Government was called into question in Scotland because of its pursuit of policies that were seen as attempted Anglicization of education and were not supported by the Scottish electorate (Arnott, 1992). Since devolution there has been an attempt to promote a public debate aimed at defining priorities in education. The designation of the National Priorities for education followed widespread consultation and public debate that revealed strong continuing support for the comprehensive principle of provision. The National Priorities stress the need for improvement within a framework of enhanced equality and inclusiveness: they enable central steering of the system towards goals that are debated and largely endorsed by the public; interpreted and implemented by schools and local authorities. For the most part, devolution seems to have enabled the continuation of Scottish distinctiveness in education, while simultaneously beginning to open up some of its more traditional aspects.

Turning now to policy for KT, the UK Government has promoted the responsiveness of UK universities to KT for the new KE through a variety of mechanisms. A clear thread of commercialization and exploitation runs through this policy discourse, and this created a broadly convergent UK policy throughout the 1980s and into the 1990s. For example, the Department for Trade and Industry's flagship policy document, which we have already quoted, states that:

[A knowledge-based economy] is one in which the generation and exploitation of knowledge has come to play the predominant part in the creation of wealth. It is not simply about

pushing back the frontiers of knowledge; it is also about the more effective use and exploitation of all types of knowledge in all manner of activity. (Department of Trade and Industry, 1998, p. ii)

More recently the 2003 White Paper *The future of higher education* justifies the reform of research in the following way:

Research lays the long-term foundations for innovation, which is central to improved growth, productivity and quality of life. This applies not only to scientific and technical knowledge. Research in the social sciences, and in the arts and humanities can also benefit the economy—for example in tourism, social and economic trends, design, law and the performing arts—not to speak of enriching our culture more widely. (DfES, 2003, p. 23)

However, there is some evidence of increased divergence in the policy field of education from 1999–2000 onwards, as the Scottish parliament begins to function. In the broader field of education and social policy, there are divergent elements in Scotland from the UK norm of business as a model of effective and efficient practice, and in policy for the teaching profession (Alexiadou & Ozga, 2002; Ozga, 2005). In relation to differences between Scotland and England within the shared policy framework of the UK, there seem to be continuing differences in welfare redesign. This is apparent in policy for social inclusion. In England, Government appeared to offer social inclusion to its citizens on the basis of *exchange* (i.e., evidence of good citizenship through responsible self-management and engagement in waged work), however in Scotland social inclusion was offered on the basis of *entitlement* (inclusion as a citizenship right) (Ozga, 2003).

Most significantly for our argument are emergent differences in the policy process that have to do with less combative forms of engagement that are designed into the system (Brown *et al.*, 1999), and that have been strengthened by coalition Government in Scotland. Very high expectations of democratic renewal that would remoralize politics and create civil society as a moral realm capable of countering ‘the political amorality and excessive individualism of a dominant state’ (Paterson, 2000, p. 49) accompanied the creation of the new parliament. Despite criticisms of excessive costs and embedded cronyism, Allan argues that the processes of the parliament—in particular its powerful committee structures—provide evidence of new spaces and new productive arenas for policy-making (Allan, 2003, p. 293). It should be noted that the very existence of the parliament radically changes the context in which education policy is developed. Attempts to generate public debate and use widespread public consultation are relevant here, and Keating (2001, p. 1) points to the ‘continued social democratic tradition in Scotland and the more consultative policy style’. The impact of this on developing policy for KT, and the ways in which the different policy actors negotiate in this new policy space, is something that we are currently exploring. Analysis of these data are not yet complete, but it is certainly the case that discussion of KT as a policy issue has involved many different agencies and actors, and that it goes beyond the commercialization agenda to invoke cultural and social KT (see, for example, SHEFC, 2003). Reference has also been made by our key informants to ‘the moral duty’ of universities to engage in KT for civic society,

and to ‘cultural engagement’ rather than KT as a better term to describe the ‘enlightenment aim’.

The relevant policy texts from 2000 onwards contain both commercial and social agendas for KT. The Scottish Executive recognized early in its existence the heightened significance and broader relevance of KT in strategic thinking for post-devolution Scotland (SE, 2000) and identified additional KT funding through two routes: promotion of knowledge transfer, to support infrastructure and awareness-raising, and the knowledge transfer grant, enabling institutional developments. The KT grant was not confined to conventional commercialization activities; its purposes were wider: ‘To disseminate the outcomes of research to promote their application and commercialization for the wider economic, educational, social, healthcare and cultural benefit of society’ (SHEFC, 2001, p. 4).

The KT grant has increased by 100% in 2005–2006, and the enhanced status of knowledge transfer is further indicated by its positioning on an equal footing alongside research in the higher education review report which identifies the key challenges of ensuring competitiveness and ensuring that research ‘plays an increasing part in Scotland’s economic and social well-being, delivering the most gains possible for the Scottish economy and quality of life’ (Scottish Executive, 2003, p. 40). The review goes on to stress the importance of ‘exploitation of social science research ... [that] plays a vital role in helping to improve quality of life and improving social justice’ (p. 41).

However it is also the case that the commercialization agenda features in some policy texts, particularly in relation to Scotland’s particular needs for growth and development and the relatively poor performance of Scottish R and D as a percentage of value-added in manufacturing. There is a ‘pressing need to transfer ideas and knowledge from the research base into the marketplace’ (SHEFC, 2000, p. 19). The new KE agenda is also very dominant in SHEFC’s report *Research and knowledge transfer in Scotland*:

An efficient and productive knowledge economy is one in which commercial organizations have access to a wide range of innovative solutions to exploit market opportunities. Such economies depend upon strong interactions between companies, the knowledge base (HEIs and research institutes), investment finance and entrepreneurial individuals with market awareness, technical knowledge and access to venture capital. (SHEFC, 2002, p. 2)

In assessing the extent of policy divergence within the UK—and especially in Scotland—in the area of KT policy we obviously need to go beyond the policy texts, and we have indicated above that this work is in progress, with particular attention to the extent and type of transfer into cultural and social policy. The analysis of these data is not yet complete, and for the moment we report only on the first stage of data gathering on KT activity in Scottish HEIs, as reported on their web sites.

Universities in Scotland and KT activity: a web review

The following section provides a summary of knowledge transfer activity currently being undertaken by Scottish universities, as reported on their web sites. The intention is to illustrate the range and extent of knowledge transfer activities, although it is

acknowledged that web sites do not provide highly reliable data. A university's web site may be concerned to convey an image of the institution as a successful, burgeoning and professional 'brand', and web content may emphasize most marketable aspects of knowledge transfer. Other activity may well be less visible, or less accessible, or simply not reported on web sites. In addition, university web sites are often centrally organized, administered and updated, so that content is to some extent dependent on the awareness of the centralized service, or promptings from researchers.

With those caveats noted, Scottish university web content relating to KT emphasizes technology, science and business. Prominent and recurring headings under which KT is reported are 'Business links' and 'Industry'. Web site-specific search functions will reveal further details on these and related activities, when terms such as 'knowledge transfer partnerships' and 'proof of concept' are entered. Both terms refer to funding opportunities, the former offered by the SHEFC, the latter by Scottish Enterprise. KTPs have come to replace the Training Companies Schemes, established by the Department of Trade and Industry (and the Science Research Council) in 1975. The DTI explains the aim of the partnerships thus:

To facilitate the transfer of knowledge and the spread of technical and management skills and encourage investment in training, research and development. To provide business based training, supervised jointly by personnel in the knowledge base and in business, for high calibre graduates intending to pursue a career in industry. To enhance the levels of research and training in the knowledge base that is relevant to business by stimulating collaborative research and development projects and forging lasting partnerships.

The Proof of Concept (POC) fund was launched in 1999 with the primary objective of supporting the development of technology breakthroughs prior to the point of commercialization (this funding is also available to NHS bodies and other research units beyond the HE sector). According to their web sites, 11 of the 20 SHEFC funded HEIs in Scotland have received POC funding. Research areas range from projects focusing on the harnessing of tidal energy to digital designing. There is apparently less activity funded by the KTPs, with some six web sites reporting involvement in this context. It should also be noted that POC and KTP activity is not confined to one form of institution (i.e., ancient or modern universities or specialist HEIs such as arts and music colleges), although the newer universities do appear to be slightly more active in KT linked to these two areas. As might be expected, the specialist institutions are significantly less involved.

Of course, KT in the Scottish HEIs is not restricted to activity funded from these sources. Web sites list an array of other activity, both within and beyond the areas covered by POC and KTPs. These include developments in the fields of optoelectronics and semi-conductors, treatments for neurodegenerative diseases, the development of new technologies relating to the manufacture of concrete, catalytic gas sensors, flood relief systems, various advanced pharmacological products, radio communications, and microelectronics. In the specialist arts-based HEIs, KT activities can also encompass areas of technology and medicine; for example one college has developed a chair equipped with ultrasound that enables the examination of patients suffering from varicose veins.

Although we may be oversimplifying, the web-based KT content tends to take on two characteristics. The first is a ‘business links’ (or similar) section, where universities seek to advertise their availability and willingness to work with commercial enterprises, SMEs and other external concerns. Content here will usually link to a separate page or section explaining the role of KTPs and similar means of support and joint-venturing. The second characteristic is the widespread use of terms that convey a sense of up-to-the-minute newness and hi-spec technical capacity. KT regularly emerges as something of a hyper-modern activity, exploring uncharted territory, whether in relation to the environment, the human body or the virtual, digital spheres. Perhaps as a consequence of this, there is often a tendency to conflate knowledge transfer with ‘technology transfer’ (thus potentially losing sight of the much broader scope of the former).

A lexicon of frequently occurring terms created from the contents of HEI web sites includes the following: ‘commercial outreach’, ‘enterprise management’, ‘innovation’, ‘student placements’, ‘CPD’ (continuous professional development), ‘consultancy’, ‘technical solutions’, ‘licensing’, ‘leading-edge technology’, ‘commercialization funding’, ‘commercial outreach’, ‘patent applications’, ‘spin-out (and ‘start-up’) companies’, ‘entrepreneurial activity’, ‘intellectual property rights’ and so on. Clearly, then, the focus is on commercial and business relevance, and information relating to non-commercial KT activity is difficult to locate. The emerging picture is not without complexity, however. KT is not simply presented as commerce, or capitalist venturing. Numerous tensions and dilemmas are already evident, even at the surface-level identified by the terms listed. Consider, for example, the terms ‘commercial outreach’ and ‘intellectual property’. The former suggests collaboration, partnership and linkage with external business interests, and thus—by implication—some kind of symbiotic relationship between an HEI and a commercial organization, and a consequent blurring of the boundaries between the public and private sectors. The latter term pulls in a quite different direction, however. Here, the idea of ‘intellectual property’ implies that knowledge, expertise and information are owned by the university—and that the university controls the content and right to exploit this knowledge. The inference is therefore one of safeguarding the knowledge products of the public sector, rather than seeking to push them out into the private sector. Put briefly, then, the following definition of KT that has been extracted from one HEI web site can be understood to typify the currently visible institutional view of the KT agenda:

Knowledge transfer (KT), the exploitation of our intellectual expertise and know-how for commercial ends, has been identified as a key development area. ... KT is also an area that allows us to develop our partnerships with the wider community for mutual benefit.

The ambiguities and difficulties of the KT agenda are hinted at in the latter part of that statement. The irony here is that, while KT does undoubtedly encourage universities to be more responsive to a wider milieu, the breadth and depth of that community is up for negotiation, and the possibilities for civic, cultural and political engagement may not be apparent to many academics.

Conclusions

It could be argued that it is in the definition of civil society that a new post-devolution, post-welfarist 'collective narrative' may be constructed, to provide energy to 'embedding' policy, including policy for KT. The account given here is intended, at least partly, to reiterate the importance of the local in responding to, and mediating globalizing pressures and travelling policies. We have attempted to argue that policies may get recontextualized and remodelled according to local and national histories, traditions and social relations, even where they are concerned directly with serving the knowledge economy, and even where they are apparently designed to ensure commodification and alienation of knowledge. One of the fundamental characteristics of globalization is that it can revitalize local institutions and formations, including those based in major civic institutions such as Scotland's universities. Faced with homogenizing travelling policy; particular groups or societies can be encouraged to revisit and reconstruct the value basis of their organization; and generate new energy in its production within social and cultural institutions. Such agendas may need to be written against what seem to us to be some of the more insidious forms of travelling policy: for example those that link knowledge to the economy within a wholly commercializing framework. In the work of defining and developing KT there is perhaps, possibility of greater divergence from England because of emergent definitions there of 'the public', which seems to be a space that has been sucked into the market. Resisting that definition may be enabled by judicious use of existing resources that re-engage with some of the older Scottish traditions of civil society. Scottish Enlightenment traditions envisaged civil society as a foundation for reciprocity, mutuality and cooperation beyond the calculus of pure exchange: in other words, for knowledge transfer.

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