ESRC Research Project on *Knowledge Transfer in HE in Scotland*

Working Paper 5

KNOWLEDGE TRANSFER: RESEARCHERS' RESPONSES TO POLICY

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BACKGROUND: KNOWLEDGE TRANSFER AND RESEARCH STEERING

This paper attempts to communicate some recent and continuing work on Knowledge Transfer in Higher Education in Scotland. 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 commercialisation and technology transfer of the late 1980s and 90s, and this business-like orientation remains dominant in the KT policy discourse. Earlier research suggests that commercialisation opportunities are also uppermost in the minds of institutional managers and the increasing number of KT directors/officers who are responsible for translating management decisions into School and Department-level practice (Jones 2006 *forthcoming*).

KT represents a significant attempt to reshape the relationship between research and policy: it is part of a repertoire of research steering practices (Kenway, Bullen and Robb 2004, Ozga, Popkewitz and Seddon 2006) that align HE/research with successful competition in the new Knowledge Economy. At the same time, it is important to recognise that all such 'travelling' policy (Jones and Alexiadou 2001) enters a space that has its own politics and institutional practices. Academic and institutional cultures respond in different ways to overtly commercial imperatives, and there may be tensions with other policy drivers. In addition, in the Scottish context, post devolution, there have been differences in education policy, including in HE (Keating 2001, Ozga 2003, Ozga 2005). In KT such differences seem to be emerging: in the policy discourse, for example, there is an attempt in Scotland to encourage KT in the broader public interest, and in relation to social justice, civic engagement, community and cultural issues (Ozga and Jones 2006). While the policy discourse may support such developments, there are other factors that work against them, including the

steering capacity of the UK government, and its effects on HE policy in Scotland, the impact of UK level steering policies , notably the RAE, and the need of HEIs across the UK to raise income through commercialisation. In addition, a very significant factor affecting the take up and interpretation of KT is the response of researchers to this policy. That response may well be affected by a range of factors, including disciplinary location and formation, career stage, material conditions of work, institutional pressures, and personal motivations. The research reported here was concerned to explore the ways in which those factors, and others, affected the interpretation of and engagement with KT by researchers in selected areas of research in Scotland, namely Health, Education and Technology.

The Framework for the Research

These possible tensions and contradictions between what might be called 'civic and social' KT and 'commercial knowledge economy' KT, inspired the research project that this paper, in part, reports on. KT has considerable implications for research, and raises wide-ranging questions about the production and use of research knowledge, including questions about how research knowledge is constructed, how it is understood, who benefits from such transfer, and for what purposes. The project explored some of these larger questions through a focus on KT activity in non-commercial areas, where the transfer of knowledge is promoted for civic or social purposes. The research drew on a range of relevant intellectual resources, including sociology of education, sociology of knowledge and education policy studies, to explore the ways in which researchers understand and respond to KT, with specific attention to the fields of Health, Education and Technology**.** The aims and objectives of the research were: (a) to map and categorise knowledge transfer activity in the HE sector in Scotland, (b) to map and categorise institutional provision to support KT, across the HE sector in Scotland, (c) to find out how academic cultures in Health, Education and Technology understand and respond to KT, and (d) to identify obstacles to and enablers of successful KT in these sectors in HE in Scotland. The empirical investigation combined quantitative and qualitative methods, in three overlapping stages:

Stage 1: explored the policy context of KT, including the national framing of KT and research policy in post-devolution Scotland, and the institutional policy that shaped the context in which researchers work;

Stage 2: explored research cultures, processes and responses to policy in the research community working in Health, Education and Technology; with specific attention to KT and KT-related issues;

Stage 3: was an in-depth investigation of the knowledge transfer practices of three applied research centres in contrasting institutional settings.

This paper focuses on the results of stage 2 and stage 3 of the research. Before looking in detail at this material, we need to set out a little more background on the possible policy tensions in KT in Scotland.

The policy context in Scotland

During the 1980s and much of the 1990s KT was largely defined across the UK as a search for greater commercialisation. However by 2000, following Devolution in 1999, there were signs that this policy area, like others, was being given a particular Scottish inflection (Paterson 2000, Allan 2003). The Scottish Executive followed the global script in its constant preoccupation with creating a 'Knowledge Society' and building 'Smart, Successful Scotland' (HEFCE 2000a, SHEFC 2001), but in the detail of its policies to support KT there are some interesting departures from the emphasis in England. The Scottish Executive promoted KT 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 commercialisation activities; its purposes were wider:

> *'To disseminate the outcomes of research to promote their application and commercialisation for the wider economic, educational, social, healthcare and cultural benefit of society'.* (SHEFC 2001:4)

When the Higher and Further Education Funding Councils were merged in Scotland in 2003, the broader social agendas were very visible in the new Scottish Funding Councils' corporate plan:

> *'The term knowledge transfer (KT) is used to describe the ways in which Colleges and Universities use their knowledge, ideas, skills, expertise and assets to bring benefits to the economy and society in general, whether this is at local, national or international level.'* (SFCs Joint Corporate Plan 2003-2006).

Tensions between that broader civic agenda and the global pressures to extract maximum value and clear policy direction from research may well follow from the UK government's drive towards evidence-informed policy making and the increased steering of research towards problem solving ('what works') and consolidation of knowledge. The evidence-informed 'movement' connects to KT because (a) it supports a focus on lessons learned from research; (b) it requires attention to the processes of transfer and to how practitioners receive and transfer knowledge and (c) it may encourage a tendency to fund evaluation that has clear policy relevance rather than curiosity-driven research.

However the civic/public good discourse remains present in Scottish policy texts, notably the Higher Education review of 2003, the report of which identifies the following key (and possible conflicting) challenges for HEIs in Scotland:

(i) ensuring competitiveness and

(ii) 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'*

The report continues by stressing the importance of:

> *'the exploitation of social science research … [that] plays a vital role in helping to improve quality of life and improving social justice'* (Scottish Executive 2003:41).

The emphasis on the particularities of the Scottish context is not intended to deny the significance of the knowledge economy agenda. The needs of the knowledge economy apparently require that public institutions, like Universities, become less concerned with public good and more committed to private enterprise (Fuller 2003, Kenway et al 2004). However it may be that the attempt to create a more collaborative form of governance in post-devolution Scotland is also influencing the ways in which KT is being thought about, especially in relation to public good and public policy issues. The policy discourse is certainly loaded with such references, and our interviews with Scottish policy makers in stage 1 of the research suggest that Scotland is, indeed, inflecting the knowledge economy script in particular ways.

KT and the Research Community

That, then, is the background against which we undertook to explore the ways in which researchers understood and engaged with KT. We drew on the earlier work reviewing policy texts and interviewing policy makers, as well as a survey of institutional KT managers, to support the development of the Survey in Stage 2**.** A 'map' of the research landscape in the selected fields of Health, Education and Technology in the 20 HEIs in Scotland was constructed, providing a large data base drawn from 14 institutions whose websites revealed research activity in the areas of Health, Education and Technology. These were classified by type as 'Ancient', ie of 14^{th}-16^{th} century origin (4 institutions) 'Old', ie of 18^{th}-19^{th} century origin, and roots in science and technology, (4 institutions) and 'New' ie post-1992 institutions (6). There were 127 research centres containing 1,200 academics distributed across these institutions. Given the time and resources available, we decided to focus on 'applied' research. We constructed a sample of 600 researchers in Education, Health and Technology, evenly distributed across types of institution, and all working in Research Centres or Units that appeared to be engaged in research that explicitly sought to improve policy, practice, or public outcomes so that considerations of audience and wider application were likely to be present.

The ideas and issues that we sought to explore in the Survey were also shaped by the resources drawn from the growing literature on the nature of knowledge, and on knowledge production for the knowledge economy/society. The key ideas here related to changes in the role and nature of knowledge (for example in the shift from mode 1 to mode 2 knowledge in a new context of reflexivity), in which knowledge, policy and practice and associated repertoires of expertise and scientific procedure are understood as themselves subject to scrutiny and interrogation (Nowotny et al 2001, Delanty 2001, Edwards and Usher 2000) We therefore designed questions that explored researchers' views of knowledge production, to see if they were influenced by these ideas, which have obvious relevance for KT, especially civic or social KT. The survey questions, accordingly, explored disciplinary formation and shaping of research, and its effects on researchers' agendas and purposes. The enquiry aimed to assess the impacts of external and internal research drivers on research, with the

assumption that these different factors would have consequences for attitudes to dissemination/transfer. There were three main areas of enquiry: (i) personal/background details including role and status, and funding sources (ii) attitudes to, and views about research, knowledge and knowledge transfer (iii) views about the research field, its characteristics, contribution to society and policy, and capacity for KT. There was also a 'free' section for general comments on research, dissemination and knowledge transfer.

The survey was emailed to a large target population of 600 researchers, because we (correctly) anticipated low response rates. Follow-up emails and telephone calls elicited a response from 83, of whom 41 were in Education, 21 in technology and 21 in Health. The low response rate (13%) is indicative of the low levels of recognition of KT among researchers in general: it seems that KT is regarded by most researchers as something that they are not concerned with or that they do not do. Responses were highest from researchers in senior positions (47% of respondents), those with more than ten years experience (60%) and on permanent contracts (64%). Thus the results are not representative of the views of researchers in general, but are biased towards those of established research leaders. It may be that the low response rates from less established researchers indicate a relationship between job insecurity, the need to prioritise applications and project work, and the lack of engagement in or involvement with KT.

The survey data were coded and analysed using SPSS, and produced descriptive statistics on (a) Background Information about nature of post, sources of funding, preferred funding sources, distribution of time on research and research-related tasks (b) personal views on research, motivations, degree of autonomy, pressures on research agendas, nature of knowledge produced, processes of knowledge production and dissemination (c) nature of the Field (ie Health, Education Technology): degree of tacit or coded knowledge, nature of disciplinary boundaries, quality assessment, contribution of research, audience, dissemination practices, barriers and attitudes to KT/use of KT funds.

SUMMARY OF FINDINGS

This section of the paper reports some of the findings from the analysis of the survey data, that relate to the ways in which researchers may –or may not-engage with KT. The findings are grouped under three main headings: dissemination and KT, motivations for research, and research and knowledge.

Dissemination and KT

There is little evidence from the survey that researchers know about KT funding or institutional policy for KT support. Yet the vast majority of the researchers who responded to the survey are active disseminators, and the majority are using multiple modes of dissemination, tailored for different audiences, and recognise that dissemination has changed, to embrace workshops and conferences for user groups. A small minority indicated that

dissemination was now characterised by engagement of all those involved in and expected to benefit in planning, conducting, evaluating and reporting research findings. Dissemination is high on researchers' agendas, but it seems that KT is assumed to be a different kind of activity. This is probably to some degree a question of terminology, but may also reflect the gap between research cultures and institutional, entrepreneurial KT cultures. In the first stage of the enquiry we found that KT institutional managers were highly focused on commercialisation possibilities and activities, and that they had business backgrounds. It may be, then, that both KT managers and the researchers interpret KT as commercialisation, and do not recognise that KT exists in what might be termed non-commercial or public good areas. In fact researchers in this study are strongly committed to, and shaped by, public and policy concerns, but this work is not being recorded or recognised as KT.

Data relating to obstacles to effective dissemination produced some interesting results. A key factor is lack of time, and the associated lack of resources: these may reinforce one another, especially for researchers on 'soft' money, where dissemination activities may be limited because of the need to apply for new grants before completing current projects. It is felt that dissemination is not adequately funded. Related points concern the lack of recognition for dissemination work, and the absence of real incentives to do it, especially as it is not recognised by institutional promotion procedures, which favour traditional outputs.

These factors all point in one direction, and indeed the main obstacle to dissemination is the RAE, which is the key source of recognition and status for researchers. The RAE was the subject of a large number of comments in the 'free' section of the survey, where it appeared as the significant obstacle to active dissemination and (by extension) to serious engagement with knowledge transfer. Once comment stands for many:

> *"It's really not about what's most effective – it is all about what counts for RAE – basically, if it doesn't count on RAE returnability I don't have time to do it. This is ruthless, but that's what the RAE is all about. It isn't something I like – I am not by nature ruthless, and am not competitive either, nor do I normally undertake work with an eye to keeping my position, but again – those are the characteristics that the RAE promotes, and people like me struggle with this, I think."*

Motivations for doing research

The motivations for research recorded by respondents to Survey 2 reflect strong policy orientations: researchers in Education (87%) and Health (60%) are motivated primarily by the wish 'to inform policy development and implementation', (in contrast to Technology, where only 29% identified this as a significant motivation). Across the three areas, researchers also confirm that research is more institutionally and policy-driven in recent years (37%), while only 23% say that it is more intellectually driven (technology researchers select this more frequently, at 31%). While Education researchers identify 'informing policy development and implementation' as their main motivation for doing research; they also gave considerable importance to 'making a contribution to advancing knowledge in my field'. Education

researchers also feel that they can set their own research agendas 'most of the time' and saw 'engaging users' as more important than did their colleagues in Technology and Health

Across the three fields of health, technology and education, there is a significant percentage of researchers (44%) who feel that their research is more externally driven than it used to be, and a substantial minority (37%) who feel that their research is increasingly driven by institutional planning. It is striking that only a minority (15%) feel that their research is driven by their career planning, and only 23% feel it is intellectually driven[1].

Knowledge and Research

The relationship between forms of knowledge and capacity to transfer is more difficult to read from the data. There were difficulties in analysing the data, as the questions addressing the nature of knowledge in the field were considered by some respondents to be difficult to answer, and we have missing data (which might also suggest that these are, indeed, areas of weak coding or boundaries). Across the different fields, there is an emphasis on pragmatic research methods, on externally-generated criteria of quality and on practice and policy-oriented outcomes. Researchers do research 'to produce knowledge that can make a difference to the wider community' (63%) and to 'make a contribution to advancing knowledge in my field' (57%). Perhaps unsurprisingly in these applied fields only 13% do research to enable theoretical developments or methodological developments (8%). Researchers across the fields report a degree of insecurity of status, along with considerable pressure on funding and on time. It is possible that the combination of material conditions of work, and weak disciplinary framing, reduce capacity for reflexivity and thus for consolidating knowledge, and this may affect transfer (including transfer in its traditional RAE-assessed forms). However it could equally be argued that these characteristics should support new knowledge production in the context of application (ref), and are thus more conducive to transfer. More in-depth work is needed on this topic.

DISCUSSION

What do these findings tell us about knowledge transfer in Scotland, and do they reflect policy steering towards social and civic outcomes, as articulated in the KT policy discourse? It seems that there are gaps or fissures in the KT agenda, among the different participants involved in it. The first stage of the enquiry suggests that, at the policy level, there is appreciation of the possibilities of KT in the specific context of Scotland, where knowledge is identified as a major resource: 'the universities allow us to punch way above our weight' (Scottish Enterprise Respondent 1). In the context of the decline of manufacturing and heavy industry, 'knowledge is a key competitive weapon,' (SHEFC/Scottish Enterprise 2002). Policy-makers, whatever their location, connect the specific context of Scotland to the need for cultural and social KT, along with KT as a contributor to public policy, in their overall

[1] These are 4 items selected from a range: not all researchers selected them, so the %ages do not total 100.

assessment of KT and its role in the creation of a KE. This complex interlinking of economic, cultural and social references provides a frame for their discussion of emergent KT policy. Within that generally broad approach to KT there are differences of emphasis: Scottish Enterprise sees KT as part of the internationalisation and globalisation of Scottish business, MSPs see KT as not exclusively about commercialisation or social and cultural policy, but cutting 'right across the board'; the Funding Council identifies policy-related KT as part of universities' contribution to social and civic well-being.

If we move from that policy macro-context to the meso-level of institutional KT managers, it seems that commercialisation possibilities continue to shape KT engagement by HEIs. There is an almost universal lack of attention to cultural, social or civic KT in institutional planning or documentation. In the survey returns from KT managers, only 2 HEIs highlighted their public sector KT work. It is evident that there has been a considerable growth of KT activity in Higher Education in Scotland recently, with KT playing a significant role in institutional strategic planning, but there is little evidence of social and cultural KT in reporting and website documentation of this development. The dominant KT areas are biochemistry, biotechnology, engineering, medicine and pharmacology, ICTs and software development.

At the micro-level of research work, the survey data suggest that KT is understood by researchers in the fields of Health, Education and Technology as commercialisation, and most do not see it as concerning them. Yet they are all very strongly engaged with, and committed to, dissemination. The low recognition of and response to KT is partly a question of terminology, but it is probably more than that. The institutional focus on commercialisation is excluding researchers who are engaged in social and civic KT, and who may well be responsive to the more contextualised and inclusive version of KT being articulated at national policy levels.

In summary, then we conclude that there is some evidence that policy 'steering' of research has effects on researchers' priorities/choices: researchers in the survey do indicate that they are increasingly policy driven, but they are also demonstrating engagement with making their research useful in addressing of social problems. There is evidence of strong commitment among researchers to active dissemination, but a shift into knowledge transfer is inhibited (a) by failure to identify with transfer, which they understand as commercialisation and (b) by the strong effects of the RAE in pushing researchers towards traditional indicators of recognition and impact. Other issues that surface from this research, and that require further investigation, are to do with the insecurity of the research career, and the effects that has on disciplinary formation and on the sense of identity of researchers-perhaps especially those in applied fields. Despite the rhetoric of policy, there is little evidence of researchers' engagement with social justice or the possible wider agendas of KT/KE, perhaps because their material conditions of work do not enable such agendas to be foregrounded, and perhaps also because institutional translations of KT policy are not welcoming to social scientists.

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