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Sustaining knowledge exchange and research impact in the social sciences and humanities: Investing in knowledge broker roles in UK universities

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Introduction

Over the last decade, UK higher education policy has developed an increased focus on the
"impact" of academic research, as have higher education policies in Europe, North America,
Australia and many industrialised countries (Donovan, 2008; European Commission, 2007;
ESRC, 2009; Jongbloed & Zomer, 2010; Molas-Gallart & Casto-Martinez, 2007). In the UK
this focus has intensified since 2000, notably through the recommendations in the Warry
Report about increasing the impact of the research councils (Research Council Economic
Impact Group, 2006). In 2009, the Economic and Social Research Council (ESRC) and other
research councils began requiring applicants to describe the anticipated impacts of their
research, and also increased the orientation of reporting requirements toward research
impact (ESRC, 2012: 18-19). Most recently this trend may be seen in the new Research
Excellence Framework (REF) 2014,[1] in which twenty percent of assessment will be based
on the benefits of research to "the economy, society, culture, public policy or services,
health, the environment or quality of life, beyond academia" (REF, 2011: 40).

In Scotland, where research for this paper was undertaken, a clear commitment to maximise
research impact has also been articulated. One of 45 national targets set by the Scottish
Government for public service activity is to "Improve knowledge transfer from research
activity in universities" (Scottish Government, 2007: 47). Changes to higher education and
research policy have led to investment in new infrastructure, such as the creation in 2005 of
Interface, a Scottish-wide brokerage organisation, described as a "matchmaking" service
between business and research institutions (www.interface-online.org.uk). The Scottish
Funding Council (SFC), the body that allocates funding to Scotland's colleges and
universities, is currently consulting on proposals for a single national knowledge exchange
office, to "harmonis[e …] systems and approaches to establishing linkages between
academia and industry" (SFC, 2012: 5). These developments are in line with Europe-wide
"institutionalisation" of knowledge exchange by universities (Geuna & Muscio, 2009),
including investment in formal institutional structures such as university or college-wide
Technology Transfer Offices, which often have a commercialisation focus.

Within these new structures, but also outside them, there is an emerging and growing group
of university staff with a remit to support the use, impact and dissemination of research
(Knight & Lightowler, 2010: 544-45). Such roles have commonly existed in Canada and
elsewhere for a longer period of time, but in the UK, are now increasingly to be found in the
social sciences and humanities. In this paper we explore the experiences of this group

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[1] The REF will assess the quality of research in UK higher education institutions and inform the
allocation of research funding, It replaces the Research Assessment Exercise (RAE). See
http://www.ref.ac.uk/

through an interview study at the University of Edinburgh (UoE), where knowledge
brokerage roles in the College of Humanities and Social Science have increased in the last
two years from 17 to at least 27. Based on our findings, we argue that there is a tension
between the policy-level commitment to research impact and the value placed on knowledge
brokerage and knowledge brokers at the institutional level. We show that funding models,
short-term contracts, and posts combining knowledge exchange with other functions result in
a transient professional group and a squeeze on knowledge brokerage, which limit the
effectiveness of knowledge brokers in achieving research impact.

Previous work on knowledge brokerage and brokers

Lomas (2007: 131) defines knowledge brokerage as "all the activity that links decision
makers with researchers, facilitating their interaction so that they are able to better
understand each other's goals and professional cultures, influence each other's work, forge
new partnerships, and promote the use of research-based evidence in decision-making".
Kammen et al. (2006: 608) argue that the focus of knowledge brokers "is not on transferring
of the results of research, but on organizing the interactive process". Similarly, the Canadian
Health Services Foundation (CHSF) defines knowledge brokering as the "human force that
makes knowledge transfer (the movement of knowledge from one place or group of people
to another) more effective" (CHSF, 2003: i).

Knowledge brokers are therefore agents who support interaction and engagement with the
goal of encouraging knowledge exchange, supporting research use and strengthening
research impact. In the university context, knowledge brokers will include those with an
exclusive focus on research communication or dissemination; knowledge exchange or
knowledge transfer; and/or professional training or continuous professional development
(CPD) drawing on the research of their centre, network or field. However, knowledge brokers
will often have other responsibilities (Lomas, 2007: 131), and thus include research
administrators and academics who have a specific and significant remit in supporting
research use, dissemination or impact. For knowledge brokers based in higher education,
the term knowledge exchange (KE) or knowledge transfer (KT) is often used to describe
their roles and responsibilities.

In much of the literature knowledge brokers are characterised as being in between the
worlds of research and policy (Bielak et al., 2008: 7; Lomas, 2007; Ward et al., 2009: 268).
Meyer argues though that it is more fruitful to think about brokers as being in between
peripheries rather than worlds (Meyer, 2010), and Nutley et al. write of knowledge brokers
bridging "research and policy communities" (Nutley et al, 2007: 63). Often for simplicity's
sake, knowledge brokers have been defined as linking producers and users of knowledge

(Meyer, 2010; Urquhart, 2011; Kammen et al., 2006), although we would challenge this simplistic separation of knowledge producers and knowledge users (Kitagawa & Lightowler, 2012: 9).

Ward et al. (2009) identify three roles performed by knowledge brokers: "knowledge management" (finding, packaging and disseminating information), "linkage and exchange" (facilitating discussions between researchers and decision-makers) and "capacity building" (developing capacity for future knowledge exchange). The Canadian Health Services Foundation lists the tasks of knowledge brokers as including:

- bringing people together to exchange information and work together;
- helping groups communicate and understand each other's needs and abilities;
- pushing for the use of research in planning and delivering healthcare;
- monitoring and evaluating practices, to identify successes or needed changes;
- transforming management issues into research questions;
- synthesizing and summarizing research and decision-maker priorities; and
- 'navigating' or guiding through sources of research. (CHSF, 2003: i)

Knowledge brokers thus tend to be involved in a wide range of activities, using tools that include "organizing seminars or meetings […], developing databases [and] producing plain-language booklets" (Meyer, 2010: 121). This wide range of activities is confirmed in the recent Professional Development Framework for Business and Community Engagement, developed by the Association for University Research and Industry Links (AURIL) and Joint Information Systems Committee (JISC) (AURIL and JISC: 2012). However, "the typical brokering devices used still need to be identified and characterized in more detail" (Meyer, 2010:121).

There is some evidence that knowledge brokerage is increasing in importance across a range of sectors. Meyer (2010:119) highlights the emergence or rise of knowledge brokering in engineering (Johri, 2008), IT (Pawlowski et al., 2000), health (CHSF, 2003) and academia (Kissling-Naf, 2009). Kakihar and Soresen (2002) further argue that knowledge brokering is a fundamental characteristic of postmodern professionals.

Methods

The evidence presented in this paper is based on an interview study with knowledge brokers employed across the College of Humanities and Social Science, UoE. Our interest was in staff working directly to broker the knowledge of academic departments, research centres and projects. We did not interview those supporting knowledge exchange centrally through the university's commercialisation and technology transfer office, Edinburgh Research and

Innovation (ERI). In practice our participants were not tasked with commercialisation
activities, given our focus on the humanities and social sciences.

We conducted 13 semi-structured interviews, each lasting approximately one hour, between
March and May 2011. Initial interviewees were recruited via an existing network of
knowledge exchange staff within the College, facilitated by the central College Knowledge
Exchange Office at ERI. A further three interviewees were recruited using a snowball
technique, in part because it became apparent during data collection that significant
knowledge brokerage responsibilities were being allocated to research managers and
administrators, not all of whom were members of the College knowledge exchange network.

Given the limited research on knowledge brokers in higher education, this study was
deliberately exploratory. Based on a literature review, as well as auto-ethnographic work
about our experiences as knowledge brokers (Knight and Lightowler, 2010), we devised a
broad-ranging interview schedule covering the effectiveness of knowledge brokerage,
activities involved, background and experiences of knowledge brokers, skills set,
management and organisational experiences, future plans, and reflections about the
brokerage role. Semi-structured interviews allowed exploration of emerging themes and
experiences. Interviews were audio-recorded and transcribed by an independent company.
We then undertook thematic analysis according to our literature review, research questions
and interview data itself. Coding was undertaken independently by each author, manually
and using NVivo qualitative data analysis software, and then compared between
researchers.

This study may be classified as "peer" or "insider" research, since when it began, both
authors were knowledge brokers within the College of Humanities and Social Science, UoE.[2]
We would challenge being positioned in a simple way as "insiders" conducting research
about "our own". People in general, and knowledge brokers in particular, cannot be so easily
categorised; "we are all 'multiple insiders and outsiders'" (Mercer, 2007: 4; quoting Deutsch,
1981: 174), and our status shifts depending on the individual situation and dynamics
involved. Nonetheless the co-authors had directly experienced or observed many of the
issues explored in this paper. This shared experience facilitated access to information and
strengthened our understanding. We were mindful of making assumptions based on
previous knowledge and recognised the danger of not probing as deeply as we would if we
were ignorant of the issues raised (Coghlan, 2003).

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[2] Although Dr Lightowler was at that time formally employed by the University of Stirling, she
worked for a cross-institutional consortium, the Scottish Centre for Crime and Justice Research,
which includes UoE, and consequently spent one day per week based within the College.

Our peer researcher status required specific ethical consideration, as the co-authors had existing relationships with the majority of participants and "confession can be made more freely to an insider, since shared group membership makes similar experience more likely" (Platt, 1981: 82). This potentially gives researchers information which would normally only be available in conditions of greater intimacy. The study was reviewed by the School of Social and Political Studies Research and Research Ethics Committee, UoE, and we took various steps to mitigate ethical concerns.

In recruitment documents, we explained the special implications of peer research in "lay" terms: for example, that we as colleagues might remember personal experiences and views stated in interview. We offered participants the option to choose which of us would interview them, without any reason being required, and we chose not to interview personally our direct colleagues or friends, allocating these interviews to the alternative researcher. We offered participants the usual protections of confidentiality, anonymity, and the opportunity to check their transcript to amend or remove comments they did not want included. Finally, we provided participants with the opportunity to comment on our findings before publication, including this paper. As well as offering ethical protection, these latter steps were designed to minimise the methodological risks of peer research, explored further in the discussion.

Findings

Fixed-term employment
The majority of our participants – ten out of our thirteen– were on fixed-term contracts. These were attached to discrete research centres and programmes, themselves generally funded for a fixed term, either by the research councils or directly by government. Contract duration for these ten participants ranged from one to four years.[3] The lack of sustainable employment is systemic –one participant noted she had never had a permanent contract since finishing university studies. Moreover, the three participants in our study who held permanent posts were all research administrators or managers, whose roles included a significant knowledge broker component. All three of these posts had developed over time "a growing emphasis on knowledge exchange". Thus where permanent posts did exist within our interview cohort, permanency had pre-dated the addition of knowledge brokering responsibilities. In addition, as noted, permanent posts were the exception rather than the rule.

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[3] Under UK employment law, renewal of a fixed-term contract beyond four years entitles the employee to permanent status, which largely explains this.

Once the current source of funding expired for fixed-term posts, the future of these roles was uncertain – or it was certain that the post would cease. The phrase "up in the air" recurred when participants discussed the future, and over half the cohort noted uncertainty surrounding future employment. For instance, one commented that "There is no real job security. I kind of don't know what my next job is going to be". The position of contract knowledge exchange staff is similar in some ways to contract research staff, a notoriously "marginal" and vulnerable group within universities (Collinson, 2003). However, we found at least a perception of greater protection for research roles, whether or not this is real. As one participant approaching the end of her centre's funding commented:

> "There are a lot of researchers here who will be absorbed into the university […]. They are not firm messages but there are pretty clear messages that support staff linked to the grant, your job will just evaporate."

The prevailing sense of uncertainty may have been particularly acute at the time we undertook data collection. This was in early 2010, and several participants referred to the financial crisis and its impact on funding for research and knowledge exchange.

Grading and reward

The grading of knowledge broker posts was inconsistent across the interview cohort even where responsibilities and experience were similar. There was a concentration at Grade 7 (equivalent at UoE to Research Fellow on the academic scale), but grades ranged from PhD studentship level (funded through a PhD scholarship) to Grade 8 (equivalent to Lecturer). Within posts, there was also no consistency, with mid-level knowledge brokers often undertaking support tasks, such as room bookings and catering orders, because of a lack of junior administrative support. As one described:

> I'm not sure that HR have an understanding of the level of responsibility that a KE [knowledge exchange] role can entail. […] When you are communicating to a very important stakeholder audience […] and using that built-up knowledge of ten or fifteen years to do those things, it doesn't necessarily come across in a job description, or not […] in a way that HR would recognise it. […] I also find that there are some […] activities within the role […] that are well below the grades.

Although not universal, the low monetary value placed on knowledge brokerage in some cases was impacting on morale and encouraging staff to move on early. This was also closely tied to the lack of career progression pathways (discussed below), since promotion within a role relies on a re-grading of the postholder's responsibilities.

Training and support for professional development

Participants stressed the importance of existing professional networks for support and development, but also mentioned gaps in mentoring, and organisational barriers to accessing training. As noted above, the College set up an informal college-level network for

knowledge exchange staff in 2009, coordinated by the College's Knowledge Exchange Manager. As one participant described: "The knowledge exchange group […] has been really, really good, and really upskilling for me and to enhance my knowledge because I was coming from a totally different background […]." The same participant noted the need for mentoring, however: "I think it would be very useful to have a mentor […]. Maybe they could see a path through the university structures for instance, or a bit of direction […] I don't really have that relationship with somebody that's a couple of steps ahead […]."

In at least one case we found that a knowledge broker classified as administrative staff was unable to access relevant training provision: "When I tried to access some of the staff development opportunities I was told that I wasn't academic so these courses weren't available to me. I think at this time I was project manager or something and I was like 'but I have a project to manage, this course would be really helpful' and it was like 'the funding doesn't work out because you are not academic staff'." Beyond the immediate benefits that would accrue from attending such a course, this situation creates longer-term barriers because of the links between professional development and career progression, examined further below.

Lack of career pathways
Participants described a lack of structured promotion or career development pathways at the university, and associated this with being on fixed-term contracts. Some compared the situation within universities to other organisations or sectors, based on their previous experience, or that of friends and associates. As one participant put it:

> "I don't feel that I'm part of a kind of career structure here. It's a temporary job [… In my previous public sector role] it was very […] clear what […] your role was. You know pay structures and […] opportunities for promotion. That's the one thing that concerns me is that [… be]cause […] I'm working on a particular project […] there's not really anywhere for me to go […] I would just have to wait till something else was advertised."

Another participant described the disillusionment that has resulted from short-term contract employment and consequent lack of structured career development opportunities, comparing herself with peers in other sectors. Discussing the uncertainty beyond the imminent end of her current contract, she said:

> "I don't know if there will be a job for me. I don't know if there will be a token gesture comms post somewhere or if there is going to be something where they genuinely want me to do things. […] I am at the point now where I am thinking if I could have done it over again would I have come to work for the university and done this. I look at my friends who have more structured careers in HR or marketing. Who are definitely on a career ladder. They are coached, they have got all these types of

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> development opportunities happening and I am like 'maybe I should have done that' and 'maybe I need to get out of this sector'."

Overall, we found that knowledge brokerage is not (yet) considered a long-term career prospect, at least at this university. As one participant commented, "In order for me to be doing [this] in five years time I would probably need to think that there is a fifteen year career in it. And right now I'm not sure".

The classification of posts as administrative, the lesser value placed on administrative roles within universities, and indeed the very existence of an administrative/academic divide, were offered as further factors in the lack of structured development and promotion opportunities. Even in permanent posts, several participants pointed out the apparent ceiling for administrative staff, often with some frustration:

> "I don't, for me, either have the personal capacity or a strong urge to go and do any kind of postgrad, and I think that that is a huge hindrance to any career I have at *any* university. […] I'm a grade 7 and […] even on the admin scale grade, to get to a grade 8 or a grade 9, you then start to talk about MBAs and things like that […]. I think it's extraordinary on the admin scale not to have better support for professional development."

This participant, amongst others, saw no future for herself in the university: "this is probably about the level I'm gonna get to in the university and therefore this role has a finite time and interest level for me". As she pointed out, "I suspect that they [the university] lose a lot of good management people that way, and other organisations have better, more consistent approaches". Some interviewees portrayed themselves as caught between the two higher education worlds of academia and administration: "I don't have the option to do anything that is more academic. I don't have that qualification. [But] I don't want to do anything that is more admin". With the exception of those in hybrid research-KB roles (see below), interviewees did not express interest in an academic career path. Nonetheless, participants whose roles were classed as administrative compared their experiences and opportunities negatively with those available to academics, emphasising the negative consequences of devaluing non-academic contributions within universities.

There were clearer pathways for those who combined knowledge broker functions with research. All those in hybrid research-KB roles hoped to continue to a PhD and/or academic career, though one named private-sector consultancy as a close second-best. This did not mean that these participants wanted to eliminate knowledge brokerage activities. One interviewee in particular described the desire to integrate knowledge exchange into a primarily academic identity: "I want to be an academic. It's just that I [would] like to redefine what to be an academic is".

Cross-sector mobility

We found that knowledge brokers have a highly transferable skill set and were mobile across sectors. All but one interviewee had worked previously outside academia. At least six participants had worked in the private sector, six in the public sector, and three in the third (charitable) sector. Previous posts included health education, civil service, software engineering, retail, information management, design, local government, engineering, pharmacology and banking. In addition, many participants had career histories spanning diverse interests, combining (for instance) engineering with arts, science with communication, or software development with training. Most participants also anticipated working outside higher education in the future. Just under half of our interviewees (5 out of 13) said that they would like to be working in a similar role to their current one in five years' time, but acknowledged that this might be in a different organisation or sector, or indeed working freelance or as a consultant. While some participants would ideally like to stay working in the university, and in some cases were frustrated at perceived barriers to this (as described above), others indicated that they were more committed to communications, knowledge exchange, or similar, than specifically to the university setting. For some, their commitment was to the translation of research specifically, whilst for others their professional commitment might be to another element of the knowledge brokerage role. As one participant with a communications background put it, when asked whether she was particularly interested in research translation: 'No […] it's about messages and messaging. And I think if you can see there's a value in it, it doesn't really matter to me'.

Hybrid roles

Consistent with previous literature, knowledge brokers in this study carried out a very wide range of activities within their roles, some related to knowledge brokerage, but others entirely unrelated. This reflects what we have described elsewhere as the "hybridity" (formal or informal) of most knowledge exchange roles within higher education (Knight & Lightowler 2010). Activities undertaken by the knowledge brokers interviewed included event design, organisation and delivery; writing and editing outputs (newsletters, briefings, press releases, website material); developing evidence-based products; developing and nurturing relationships with stakeholders; providing training; administration; supporting grant applications; undertaking research; encouraging and supporting academics to undertake knowledge exchange; monitoring impact; and strategic planning. Several participants highlighted the importance of multi-tasking and prioritising in the knowledge broker skills set, given the broad-ranging and varied nature of such roles.

Several posts were part-time, resulting in individuals piecing together full-time work from a combination of two, or even three, part-time posts at the same university. Additionally, and more commonly, knowledge brokerage was combined in a full-time post with other responsibilities, such as research management or administration. In three roles (the hybrid research-KB roles mentioned previously), knowledge brokerage was combined with significant research responsibilities. These posts were distinguishable from traditional academic research roles by the much greater emphasis on knowledge brokerage, which was at least equivalent to that on research, and that they were involved in brokering knowledge produced by others (not just disseminating one's own research). In further cases, knowledge brokerage was combined with other "professional services" responsibilities – activities that defy the traditional academic/administrative categories. As this Business Manager elucidated,

> "it's a real hybrid role where you can be sort of facilities manager, IT support, HR adviser, strategic planner, secretary, accountant, auditor, grant manager, proposal processor, IRG processor, you know, and knowledge exchange broker […] all rolled into one in the mix."

This participant did not have a specific research remit, but in practice, having quantitative research skills, would also "dip in and out of doing bits and pieces of research as well" when a "resource gap" arose.

In certain cases, the varied, broad and hybrid nature of knowledge broker posts works well. Participants often mentioned enjoying the variety, flexibility and freedom these roles offer, and were not necessarily keen to narrow or define their remit, even where they saw this as overly broad or unclear. Some described their responsibilities as genuinely interconnected, mutually reinforcing and productive. This was more common in hybrid research-KB posts, where participants described a synergy between the two sides of their job, the one reflecting on the other. Such interconnectedness was also mentioned by two respondents in research administration or management roles that included knowledge brokerage. One concluded that dividing these responsibilities would not be practical:

> "If we had a […] sort of specialist knowledge exchange role, what would *they* do? […] I'm finding it quite difficult to chunk it up because some of it's quite interconnected. Because we are such a small research team, it would be hard to justify a lot of different roles. Financially, it would be hard to support […]."

Another participant with research management and knowledge exchange responsibilities commented that the two sides of her role had "a lot of overlaps", especially in relation to the REF.

However, the broad-ranging nature of knowledge broker roles can also mean that postholders are "spread too thin". Seven out of thirteen interviewees indicated that their remit

was broad or unclear; one commented, "this role is really really wide and covers so many things and sometimes it is quite unmanageable". In hybrid research-KB posts, perhaps influenced by the academic culture of long and irregular hours, respondents routinely worked evenings and weekends to keep on top of workload. The majority of interviewees were early-career, and it might be argued that time management and prioritisation of competing demands are skills that may require further development and training. However, this study identified systemic reasons for the ongoing capacity challenges many participants described, and these are specific to the way that knowledge brokerage is currently resourced at this institution, and we suspect many others. Notably, competing responsibilities were a particular concern for two of the three knowledge brokers whose roles had a strong administrative focus, and for whom knowledge exchange had been added to an existing range of responsibilities. As one explained,

> "the lady that was here before who did the same job obviously didn't have knowledge exchange in her job. And they've kind of thrown it into mine, if you like, because people realise that it's something that needs to be looked at […] but not really considered what kind of resource it'll need [… T]hey didn't really consider the […] practical knowledge exchange activities […] So there was no kind of time built in […]."

The combination of knowledge brokerage with other activities results in a squeeze on the time available for knowledge brokerage, often making it difficult to prioritise this. Again, this seems to be especially the case in research management and administration roles, where there are competing priorities across a particularly wide range of responsibilities. As one stated, "I'm kind of out of capacity and I am very conscious that there's an awful lot of things that I would like for us to be doing, particularly in knowledge exchange". However, as she pointed out, the task of preparing costings for the centre's primary funder – also her responsibility – was "the ultimate priority at the moment [be]cause it secures everybody's jobs". Inadequate capacity, as well as difficulty isolating blocks of time amongst many competing tasks, had particular impacts on participants' ability to undertake non-urgent, but very important longer-term tasks, including strategic planning and evaluation. Responsibility for administrative support tasks occasionally caused frustration:

> "you can end up spending ridiculous amounts of time trying to track down lost invoices with finance, which you'd hoped to spend an afternoon doing, you know, something else that feels more valuable, writing up a case study or something"

This knowledge brokerage squeeze was most evident where knowledge exchange had been added as a responsibility to an existing post, or where its importance had increased over time in response to the REF and related external pressures. Moreover, where knowledge brokerage had been "tacked on" to an existing administrative role, these new responsibilities

could be unclear, and some administrators took on this remit without prior experience or training:

> "more and more [research administrators] seem to be getting this kind of knowledge exchange role kind of thrown in with them if you like. And I think a lot of people are like me, and they're not too sure what to do with it or where to go or what kind of responsibility they have."

These factors too might make it difficult for knowledge brokerage to take priority. This participant, for instance, admitted that the bulk of her time was currently spent on research management, knowledge exchange being "almost an afterthought at the moment".

Disconnection from the wider university

Finally, many of our participants described a lack of connection or ambivalent relationship with the wider university. As one said: "We're not really part of the university. We are but we're not. We are when we want to be". This disconnect results largely from the employment of knowledge brokers by discrete research centres and projects, as discussed. As another broker described: "it [the research centre] does fit slightly outside the main university structure [...] this is kind of a stand-alone. It just happens to be sited at a university".

Most interviewees were aware of the source of funding for their own post, and several participants directly associated their sense of attachment with that source of funding, distinguishing between university and research council or other funding. Where a post was funded by an external organisation (such as Scottish Government), knowledge brokers sometimes identified more closely with them than with the university or even the host centre: "I'm line managed and supported here [within the research centre…] but […] I do feel I report on a daily basis to the people that I'm actually working with [...] I suppose I feel more connected with government than I do with the university."

Moreover, the nature of knowledge brokerage roles, on the boundaries between institutions and sectors, arguably encourages a sense of disconnection from the host institution. Thus the prevailing sense of disconnection from the university was not necessarily seen negatively, since it allowed the knowledge broker to focus on external relationships: "I'd really rather keep my job more outward-facing than [be] sucked into the university itself". However, participants also reported challenges associated with cross-institutional and cross-sector work, since higher education support services, such as press offices and IT, tend to be centralised at individual universities and focussed on provision within that institution.

Discussion

As detailed, the knowledge brokers we interviewed were primarily employed on fixed-term contracts; experienced high levels of job insecurity; and were not always well-supported in terms of training or staff development. Reward and recognition were inconsistent, and participants had an ambivalent relationship with the wider university. Hybrid roles were common, and clear career pathways lacking. Interviewees had a highly transferable skill set and were mobile across sectors.

Although this study focussed on one university (a limitation discussed below), our findings show that the UK "impact agenda" has not necessarily translated to security and support for knowledge brokers. We found a lack of long-term funding for knowledge brokerage posts, combined with a tendency for knowledge brokerage functions to be added to existing administrative roles without consideration or support. Compared with permanent academic and, to some extent, administrative posts at the same institution, this suggests that less value is placed on knowledge brokerage activities and roles, despite the increased importance of research impact within higher education funding policy. The jobs of the majority of our interviewees were funded as part of discrete research centres or projects. Arguably therefore, the emergence and rise of social science knowledge broker roles at this university at least is due to increased commitment and resources for knowledge exchange from public funding bodies (notably the ESRC), but has not yet translated to greater institutional commitment or clear support structures.

Insofar as this study explored areas investigated in previous research, our findings are in line with the existing literature on knowledge brokers, across sectors and internationally. Robeson et al (2008: 81) highlighted the problem of isolation for knowledge brokers working in public health in Canada, with associated challenges for support and professional development. The lack of training opportunities and support for professional development has recently been acknowledged as a challenge in the UK higher education sector, resulting in the Professional Development Framework for Business and Community Engagement (AURIL & JISC, 2012). The hybridity of knowledge broker roles, and wide-ranging activities carried out, are also evidenced across sectors and countries (Lomas, 2007: 131). Again, supporting evidence specific to the UK university sector comes from the Professional Development Framework for Business and Community Engagement, which was developed through rigorous consultation with knowledge exchange organisations and staff (AURIL & JISC, 2012). Ward et al (2009) and Meyer (2010) in particular have noted that knowledge brokers are located on the margins of communities and organisations. More generally, the difficulties facing non-academic staff within universities are well-documented, as is (more recently) the emergence of boundary-spanning professional staff (Whitchurch, 2008, 2009a, 2009b). Some of our findings relate specifically to the resourcing of knowledge brokerage in the UK university context and have not previously been explored. These include the

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mainstay of fixed-term employment; grading of knowledge brokerage roles and activities;
and the lack of career pathways.

Our findings are likely to derive from a conflict between the impact agenda emerging from
the UK Government, research and higher education funding councils, and the value
historically placed on academic, administrative and "third stream" activities in UK higher
education. Our findings may thus represent a temporary failure of practice to "catch up with"
policy at a specific historical moment for UK universities. It is possible that these results are
specific to Scotland, although there is no obvious reason to suggest this. It is also possible
that our results might reflect the practice of the single university at which data was collected,
perhaps due to internal replication of hiring practice and knowledge exchange resourcing
models – which is further examined below.

As discussed under Methods, this study was a form of "peer research". As noted, our
personal experiences and views necessarily influenced our research design and analysis,
and our findings are inevitably shaped by our "insider" status and knowledge. It is possible
that we have been more inclined towards interpretations that match our own experience than
those that would contradict it. Insofar as our research topic has been explored previously
however, our findings are supported by others' research, as noted above. Moreover, as part
of our methodology, to address the possible negative effects of peer research, we
deliberately sought feedback from our participants, and this did not generate contradictory
interpretations or views. We also heightened our own awareness of our experiences through
an auto-ethnographic paper (Knight & Lightowler, 2010), with a view to protecting against
unconscious bias. Based on this, it is clear that some of our personal experiences are *not*
reflected in the findings of this study. In particular, the "confusion about responsibilities and
the temptation to re-enter academia" that we argued may result from knowledge exchange
staff holding a PhD (Knight and Lightowler, 2010: 550) was not supported by this study. Very
few of our interviewees held a PhD, or were studying towards one, and academia was
certainly not a "temptation" for most. Those few interviewees who anticipated an academic
career were those already working in hybrid research-KB posts, and there was little sense of
confusion or conflict.

A limitation of this study is that it was carried out within a single institution, the University of
Edinburgh, a research-intensive university in Scotland.
Given the scarcity of research with knowledge brokers in the UK and in universities, this
study nonetheless contributes valuable knowledge to our understanding of how knowledge
brokerage is being resourced in the social sciences and humanities in UK universities, at a
time of significant policy change. It also enables us to see patterns clearly within one
institution. Further research is needed with social science and humanities knowledge

exchange staff at a wider range of universities across the UK's constituent nations, to discover whether these results are generally applicable. This might take the form of interview or other qualitative studies, or quantitative surveys.

The practical relevance of our findings for universities, higher education and research funders, and policymakers is detailed below. Although this study was undertaken with university-based knowledge brokers, we anticipate that these suggestions may also be useful across other sectors.

1. Universities should reflect on how to capture learning and maintain relationships developed by knowledge brokers.

Knowledge brokers are likely to have short-term contracts, and career pathways beyond the institution where they are based, and indeed beyond the higher education sector. While we argue that this situation should ideally change, universities would benefit from developing mechanisms to capture and share the learning developed through these short-term investments. These might include requiring postholders to write up the lessons learned from their project, and/or report progress to research and knowledge exchange directors or committees within the department or college. Moreover, to maximise research impact, universities should consider how best to maintain relationships developed by brokers between external stakeholders and individual research centres and projects, even if, as is likely, the individual who nurtured the relationship is no longer in post. This could involve formalising relationships between external stakeholders and the research unit/university in memoranda of understanding or other agreements, and/or creating cross-sector working groups or committees that will endure even if individual staff on either side move on. Evidence about improving research utilisation highlights the importance of long-term relationships, partnerships and trust. This clearly represents a challenge to be addressed when brokers are employed on short-term contracts.

2. Universities, research and funding councils should consider whether project-based funding is the best way to support knowledge brokerage roles.

Currently, knowledge broker posts in the social sciences are dependent upon project-based funding, often from the ESRC, and therefore are defined to appeal to the criteria set for this form of funding. A characteristic of project grants is that funders do not want to pay for "more of the same" beyond the initial funding period. However, this may conflict with the need to maintain long-term relationships in achieving research utilisation and impact. We suggest that funders consider the potential effectiveness of supporting knowledge brokers to do "more of the same", rather than undertaking new activities, or building new relationships. Longer-term funding schemes for knowledge exchange may be more effective. Our findings

indicate that short-term, project-based funding encourages creativity and innovation in knowledge exchange, and we would not wish to limit this; thus, funders may wish to strike a balance. This is an issue that requires further exploration.

3. More could be done to support professional development of knowledge brokers.

Our findings highlight that knowledge brokers have not necessarily had prior experience: sometimes knowledge brokerage responsibilities were added to existing duties. Further, knowledge brokers tend to be attached to individual research centres or projects, rarely working directly with other knowledge brokers. Moreover, we found knowledge brokers placed value on existing professional networks, saw gaps in mentoring and experienced difficulties accessing appropriate training. Together these findings indicate the benefit of, and need for, professional development opportunities for knowledge exchange staff. Elsewhere (Knight & Lightowler, 2010) we have discussed the value of professional networks, and encourage other universities to consider this approach, as well as mentoring programmes and training.

4. Universities should consider career development pathways and support for knowledge brokers.

Knowledge brokers are a growing cohort of staff within the humanities and social sciences in UK universities, and policymakers, funders and institutions publicly describe knowledge exchange, knowledge transfer and research commercialisation as strategically important. Yet our findings highlight a lack of career development opportunities within higher education, particularly beyond the mid-career point. Knowledge brokers are likely to have a highly transferable skills set and previous employment experience outside academia. Coupled with short-term contracts and consequent lack of job security, this results in a highly mobile workforce and loss of expertise and experience to units and institutions, as well as rupture of the necessary long-term relationships for enhancing knowledge exchange and research impact. People transfer across sectors has benefits in terms of sharing experience and knowledge, and to some extent this may be the nature of these boundary-spanning roles. However, if universities wish to capitalise on knowledge exchange employees for maximum research impact, they need to provide secure employment and clear opportunities for development and progression, and show that they value experience and skills in this area. Otherwise, there is a real risk of losing knowledge exchange staff to the public, private and third sectors at a point when their experience and skills mature and are thus especially valuable, including for mentoring more junior staff.

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