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9. Theories and Practices of Knowledge Brokering

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Abstract

This chapter examines a specific kind of practice dedicated to moving knowledge around and creating connections between researchers and their various audiences: knowledge brokering. It looks at the practices, theories, professions and identities concerned with knowledge brokering. The chapter argues that research on knowledge brokering needs to capture more than just the issue of moving – and transforming – knowledge. The positionality of knowledge brokers is also a key issue: the identity of and spaces occupied by knowledge brokers raise complex questions, as much as the invisibility, complexity and variability of brokering practices. Knowledge brokering needs to be captured in a multifaceted way, by being attentive to the practices involved, the devices created and used and the benefits and limits of their “in between” and peripheral status.

Introduction

This chapter reviews the literature on a specific kind of practice dedicated to move knowledge around and create connections between researchers and their various audiences: knowledge brokering. Over the past two decades, the term knowledge broker(ing) has become increasingly popular. “Knowledge brokering” is a term that is used in job postings within research institutions and beyond, and it has been called an “emerging profession” (Holgate, 2012) in a context of increasing importance given to research impact, although in a “supply push model” (Knight & Lyall, 2013).¹ As a consequence, it has also become a research object. The number of papers containing the term rises from 2 in 1997 to 86 in 2020, with a significant growth since 2018. On Ngram Viewer, the request “knowledge broker” within Google Books shows an increase of 1,307 per cent between 1990 and 2019.

A Web of Science search with the term “knowledge broker*” in either the title or abstract field yields 702 results, two-thirds of which are published in the following four countries: USA, Canada, England and Australia.² Most articles are published in fields such as public environmental occupational health (11.4 per cent), management (11.1 per cent), healthcare sciences services (9.5 per cent), environmental sciences (9.4 per cent), health policy services (8.8 per cent), and environmental studies (8.7 per cent). The term is thus mostly mobilised to discuss environmental issues and healthcare. This area of research is characterised by the important role taken by decision-making recommendations and an orientation towards the production of knowledge and tools intended for professionals (see, for example in education, Malin & Brown, 2020).

Who or What Is a Broker?

Broadly speaking, knowledge brokers can be defined as persons or organisations that facilitate the creation, sharing and use of knowledge (Sverrisson, 2001). Able to link know-how, know-why and know-who, knowledge brokers work in the public domain as much as in the private. Knowledge brokering is on the rise in a variety of areas: the “boundary spanning knowledge broker” is a new role for engineers (Johri, 2008); academies of science adopt the role of a broker (see Kissling-Naf, 2009); the category “virtual knowledge brokers” was proposed to widen brokering to digital services (Verona et al., 2006); among IT professionals, there is a proliferation in brokering activities (Pawlowski et al., 2000); and even governing agencies (Rubin & Ness, 2021) or whole countries (Oldham & McLean, 1997) are said to act as knowledge brokers. In a variety of domains and fields, knowledge brokering is growing in importance (Bielak et al., 2008), including the academic world, in a context of opening up science. The aim of knowledge-brokering activities is then to establish and maintain links between researchers and their audience via the appropriate translation of research findings (Lomas, 1997).

In the literature, the term knowledge broker or brokering has been used to talk about firms, salespeople, project management offices, nurses, community leaders, NGOs, activists, information technology professionals, scientists, researchers, project management offices, physiotherapists, mid-level managers, programme evaluators, corporate incubators, consultants, the World Bank, contract research organisations, geographers, principal investigators, journalists, evaluation units, international doctoral students, the World Health Organization (WHO), actors, children, academic networks, teachers, caregivers, migrants, higher education institutions, the Organisation for

Economic Co-operation and Development (OECD), clinical librarians, etc. In more general terms, broker's roles have been discussed as follows:

In business, a broker is an agent, promoter, dealer, fixer, trader, someone who buys and sells; in politics, a broker is a diplomat, mediator, go-between, negotiator; in the information world, a broker is someone who knows how to access or acquire information and who provides a gateway to information resources; in education, a broker is a proactive facilitator who connects people, networks, organizations and resources and establishes the conditions to create something new or add value to something that already exists. (Jackson, 2003: 4)

Some argue that knowledge brokering is a fundamental characteristic of postmodern professionals, who have to adopt fluid work practices and circulate between several communities (Kakihara & Sorensen, 2002). But new positions specifically dedicated to brokering have also emerged, which means that the circulation of knowledge with other organisations or within an organisation (see Chiambaretto et al., 2019) became enough of a concern to justify the existence of full-time employees. We can make the assumption that knowledge brokers are part of the functions created by managerialism. They need qualities such as interpersonal (see Topp et al., 2018; Wye et al., 2019) and communication skills and the capacities to listen (CHSRF, 2003; Duncan et al., 2020), for persuasion (Goldfeld, 2010: 81) and to assess information, as well as its wider political context (CHSRF, 2003). It has been argued that “[t]heir expertise resides in working with sensitivity, empathy, humility, reflexivity, flexibility and pragmatism” (Duncan et al., 2020: 10).

A key sector for knowledge brokering is healthcare, where the need to bridge the gap between research results and the use of these results for patients is often underlined. The practical and theoretical work done by the Canadian Health Services Research Foundation (2003) is an often-quoted example and has served to popularise the notion of knowledge brokering.

With the professionalisation of knowledge brokering, dedicated spaces were created, of which the following are a few examples. Science shops are small entities that carry out scientific research on behalf of citizens and local communities, thus responding to the general public's needs for expertise and knowledge. They act, in particular, as intermediaries between academia and various societal groups (Wachelder, 2003; Schlierf & Meyer, 2013). Within a majority of universities, a new organisational form – the university technology transfer office (TTO, see Vignette 10.1) – and a new occupation – the professional university technology transfer manager – have emerged

over the past couple of decades as interfaces at the margins of the university (Vogel & Kaghan, 2001). Research on such organisations has, for instance, looked at organisational factors to encourage technology transfer (Jacobson et al., 2004; Comacchio et al., 2012), compared the performances between TTOs (Hewitt-Dundas, 2012) and analysed the role of knowledge transfer organisations in university-industry collaborations in terms of “proximity” (Villani et al., 2017). At the professionals’ level, their activities have been studied (Fisher & Atkinson-Grosjean, 2002), but rarely via an ethnographic approach (Noack & Jacobsen, 2021), to conclude on their role in the contemporary transformation of science and universities (Vogel & Kaghan, 2001). Caswill and Lyall (2013) insist on the historical and societal construction of the interactions between researchers and users and the intermediary work brokers provide.

Vignette 10.1: Knowledge Brokering in Research Institutions

Today, universities and research institutes frequently recruit knowledge brokers in TTOs to guide their researchers who want to transfer their results into the economic sector or to collaborate with companies on joint issues. Research on French TTOs shows that such brokers are not only often trained in intellectual property law but also have a degree or a PhD in the area they are specialised in.³ It could be doctors who did not choose the research path or researchers undergoing a career change. Their mission is to elaborate what can be transferred from academia and how it can be done in discussion with all partners. They also raise awareness of innovation opportunities among researchers, engineers, technicians and PhD candidates who are not necessarily familiar with outcomes other than standard scientific productions like journal publications or conference papers. What we want to underline here is that they act as administrative and legal guarantors as well as researchers’ advisers, co-creators of the transferred product and innovation ambassadors. Their activities are centred on the creation of economic value but they theorise with project leaders all the potential users and impacts research can generate (e.g., social and environmental). They frequently stress the need to fight against the “ivory tower” phenomenon and the belief in a thick frontier between companies and academia.

A Variety of Practices behind “Brokering”

Brokering involves a range of different practices: the identification and localisation of knowledge, the redistribution and dissemination of knowledge and the rescaling and transformation of this knowledge. Brokering knowledge thus means far more than simply moving knowledge – it also means transforming it.

Knowledge brokering involves work in articulation, communication, identification, mediation, education and so on. All these activities require not only a variety of skills as we have shown, but also tools such as organising seminars or meetings (see Sverrisson, 2001: 317), developing databases, producing plain-language booklets (Kramer & Wells, 2005: 431), developing digital transfer instruments, prototypes and demonstrators (Noack & Jacobsen, 2021: 5) and so on and so forth. Knowledge brokering cannot be confined to one activity but offers a “diversity of possibilities” (Bammer et al., 2010) and happens at multiple scales through the use of different tools and techniques (Lyytimäki et al., 2015). Because of this multiplicity and complexity, it is arguably difficult to assess the impact and effects of this practice (Dobbins et al., 2009; Bornbaum et al., 2015).

Knowledge brokering looks very different in the various spaces and fields mentioned above, not least because the needs and expectations of the knowledge user might differ substantially – be it local communities in search of specific knowledge, corporations wanting profitability, doctors and patients calling for effective treatments, policymakers needing to make decisions, etc. Knowledge brokering should thus arguably be seen as a “tailored process highly dependent on the context and the needs of the users” (Lyytimäki et al., 2015: 314). Moreover, most of the time, this adaptation work is preceded by prospection work. When the potential use of academic results is unknown, important work is needed to define the knowledge, identify users and transform the scientific result into a prototype, a product and an expertise. As a consequence, brokers have to educate themselves continuously within a given field and be close to the users, which explains why they are often specialised in precise knowledge areas.

To sum up, we see that on the one hand, the activities of knowledge brokers can noticeably differ – and this diversity is crucial to take into account in empirical and analytical work describing them. On the other hand, the common denominator between these professionals is their intermediation activity in the active sense of the word. They are perpetually involved in “co-creational and multidirectional knowledge-production” (Noack & Jacobsen, 2021: 11).

Making Sense of Brokering

Wenger (1998: 109) has offered a useful definition: “brokering [...] involves processes of translation, coordination, and alignment between perspectives. [...] It also requires the ability to link practices by facilitating transactions between them”. Knowledge brokers are said to act in

three different manners: as knowledge managers, linkage agents (between producers and users of knowledge) or capacity builders (through enhancing access to knowledge, Oldham & McLean, 1997). Above all, brokers often see themselves as “translators” between worlds. It is indispensable, for moving and establishing connections between knowledge or agents, to understand each other: “The task is none other than that of constructing a language in which the parties can place themselves and engage with each other in mutual understanding” (Barnett, 2003: xvii, emphasis removed), especially between universities and firms, where TTO managers see a “culture clash” (Fisher & Atkinson-Grosjean, 2002: 458). Therefore, in addition to translating from one world to another, they have to create a common language and are a sort of “linguistic creators”.

A helpful concept to theorise knowledge brokering is the notion of translation. Callon (1986) defines translation as a process involving several moments: defining an actor; testing, stabilising and specifying the roles of this actor; and, finally, rendering it mobile. In Law’s (2002: 99) words, “To translate is to connect, to displace, to move, to shift from one place, one modality, one form, to another while retaining something. Only something. Not everything. While therefore losing something. Betraying whatever is not carried over”. Brokering can thus be conceived as being a form of translation with a specific emphasis on the following features: a need for at least two simultaneous translations and a reification and increased visibility of the role of “translators”, that is, brokers.⁴

Let us also mention Shinn (2002: 611), who coined the term transversality – a practice that “crosses cognitive, economic and societal boundaries”. In particular, he identified an informal and unofficial group of people, “research technologists”, who operate at the interface between institutions. He writes, “They stand ‘in-between’ orthodox professions and bodies, and are thereby interstitial. They both sustain instituted differentiations and divisions of labour and violate them” (ibid.: 612). The specific links between institutions result in a transversality in brokers’ everyday practices: they therefore need to pursue “hybrid careers” and “develop a personality make-up suited to sustain many-sided professional relationships and ‘multi-lingual’ cognitive worlds” (Joerges & Shinn, 2001: 7–8). In doing so, like managers at technology transfer centres, their role is to undertake bridging and coordination activities which eventually allow for “boundary spanning” to take place (Comacchio et al., 2012).

Some authors argue that knowledge brokering in academia can be conceived as “boundary work” (Gieryn, 1983). Studying Canadian TTOs, Fisher and Atkinson-Grosjean (2002: 461–2)

characterise brokers as “archetypal boundary workers who look across and negotiate the boundaries separating academy, industry and the State. [...] The manager’s role as one who understands both the university and industry is to protect everyone’s interests including the university”.

In the end, brokering includes a wide range of activities characterised by mediating at the interface between two worlds that don’t understand each other well. This latter particularity is constitutive of the positionality and identity of these professionals.

Peripherality, Invisibility, Identity: The Positionality of Knowledge Brokers

It is common to argue that knowledge brokers are somehow “in between” worlds (Satterfield et al., 2002; Lomas, 2007; Bielak et al., 2008). Yet, we would like to argue that a more fruitful way to think about those in between two or more worlds is to think in terms of peripheries. The term “periphery of practice” has been developed in the community of practice literature (Wenger, 1998: 117), and it has been argued that there are “multiple, varied, more- or less-engaged and inclusive ways of being located in the fields of participation” (Lave & Wenger, 1991: 35–6). What, then, about those people who are peripheral to two worlds? Some have argued that knowledge brokers might be well placed to resist the “dogmas” of the domains they are eventually meant to bring together (Hargadon, 2002: 77). How do knowledge brokers describe, experience and gain capital from their “double peripherality”, that is, from the fact that they are partially connected to the two worlds they bridge? And what is the cost of being marginal to multiple worlds, especially since these marginalities might be viewed with suspicion in academia and firms?⁵ In the face of conflicting expectations, they shape a “dual identity” between science and management that failed to build legitimacy within universities where they are located (O’Kane et al., 2015).

Another layer to the question of the knowledge broker’s position is the issue of visibility. Despite the emergence of spaces that specialise in the translation of knowledge between different worlds, knowledge brokering still tends to be unrecognised and unplanned (Johri, 2008; see also Wenger, 1998: 110). There is a lack of support and training for knowledge brokers (SurrIDGE & Harris, 2007), and brokering is usually not professionalised nor established within academic institutions, although incentives for knowledge exchange by funding agencies do exist (Hering, 2016). It is

said to be an activity that is usually not acknowledged nor recognised in institutions (Bielak et al., 2008), an activity that tends to be invisible and take place “backstage” (Vogel & Kaghan, 2001: 61) and that is “subtle and unnoticed” (Goldfeld, 2010: 81). Therefore, knowledge brokers often try to make their roles and work visible and appear valuable to others. This might be especially difficult within the value system and the hierarchies of the academic world, a world that rewards and prioritises disciplinary training, journal papers, research grants (SurrIDGE & Harris, 2007: 309) and monopolistic organisational linkages (Joerges & Shinn, 2001: 8). As a consequence, the work of knowledge brokers often falls “between the cracks” of current evaluation systems (Knight & Lightowler, 2010: 551) and the “dark side” of knowledge brokering – the tensions regarding brokers’ in-betweenness and between different kinds of knowledge – are often overlooked (Kislov et al., 2017).

As a case in point, here is an extract from an interview about science shops which describes the difficulty of evaluating and recognising brokering activities in comparison to other academic activities:

Science Shops [...] will never be academic departments. How good is the department of Chemistry in “X” University at being a Science Shop? I suspect that it would be terrible. Science Shops have a particular purpose and particular role – acting as a broker between at least two worlds is a remarkably difficult thing to do and I think that if Science Shops are judged strictly by the rules of one world or the other they will always come up short. (Levesque, 2004: 5)

It must be noted, though, that invisibility comes with its benefits: some research technologists opt for (social) invisibility because this is “fully consistent with the tenets of the interstitial stance, and such a measure drastically reduces the risk of jealousy and enmity” and helps to avoid turf battles (Shinn & Joerges, 2002: 215). Perhaps, this invisibility is inevitable: because the role of knowledge brokers lies in moving and making things flow across boundaries, erecting boundaries (around their own practices) is not an option. Our own empirical research has shown that actors themselves often argue that their role is not meant to be the centre of attention: researchers and users are the core of brokering, and brokers have to withdraw once processes are on track. In a sense, when their contribution becomes invisible, it signifies that brokering has succeeded. What is more, knowledge brokers produce, enable and facilitate movement, and they themselves are in movement. They

move back and forth between different social worlds. Not only are they transferring knowledge in one direction only, they also exchange knowledge through moving between places. It is useful here to mention Osborne's (2004: 440) definition of a mediator as "the intellectual worker as enabler, fixer, catalyst and broker of ideas. Perhaps the salient feature [...] is the association of mediators with movement. The mediator is simply the one who gets things moving [italics removed]". Hence, the word "transfer" does not do justice to the practices of knowledge brokers. Like De Laet (2002), we hold that terms like "travel" and "transformation" are more suitable than transfer. Knowledge brokering is indeed collective and interactive (see Osborne, 2004: 443). This collective exploration is based on two key movements. On the one hand, there is a translation of knowledge from one world to another. On the other, we see efforts to make knowledge socially, politically, and/or economically robust. So, both the translation of knowledge and the translation of accountability or usability take place. The end result of these translations is the production of a new kind of knowledge – what has been called brokered knowledge (Meyer, 2010). Brokered knowledge is knowledge made more robust, more accountable, more usable; knowledge that "serves locally" at a given time; knowledge that has been de- and reassembled. Brokers' work also impacts research institutions as a whole: it contributes to redefining the relationship between "applied" and "basic" science and to transform the world of higher education (Vogel & Kaghan, 2001: 359).

To conclude, research on knowledge brokering needs to capture more than just the issue of moving – and transforming – knowledge. The positionality of knowledge brokers is also a key issue: the identity and interstitiality of knowledge brokers raise complex questions as much as the invisibility, complexity and variability of brokering practices. Knowledge brokering needs to be captured in a multifaceted way, by being attentive to the practices involved, the devices created and used and the benefits and limits of its "in-between" and peripheral status. This means nothing less than researching the pragmatics of knowledge brokering.

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¹ While this chapter focuses on the contemporary period, during which the term “knowledge brokering” has been coined, discussions of brokering and knowledge transfer from a historical perspective can be found for instance in Schaffer et al. (2009), Charle et al. (2004), Schlögel (this volume), as well as in Caswill and Lyall (2013) regarding the social sciences specifically.

² The search was performed in October 2021.

³ This study is based on qualitative and quantitative PhD fieldwork by one of the authors of this chapter (VB) conducted between 2019 and 2021 in TTOs and academic valorisation projects, in particular at the French National Centre of Scientific Research (CNRS).

⁴ For another discussion of the term “translation”, see the chapter by Schölger in this volume.

⁵ The situation is different in popularisation, for example, since the norms of universities and the general public are not as conflicting. Yet, popularisation does generally not fall within knowledge brokers’ jurisdiction, but communication officers’: it thus provides a clue about which worlds are considered to be sufficiently separated to justify brokers’ intervention. This also raises the question about which situations require the interventions of a broker and which do not. While this question is difficult to answer on a general level, it can be noted that various actors (i.e., governmental agencies, civil society organisations or users) are able to bring together academic knowledge and other kinds of (extra-academic and contextualised) expertise, in domains such as inclusion, innovation and sustainability (see Bortz & Gázquez, this volume).