SPECIAL ISSUE

Building inter-organizational synergies in the regional Triple Helix

Introduction

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The idea of the ‘Triple Helix’ has become an inescapable fixture in the landscape of those studying the relationships between industry and higher education since it was first advanced by Henry Etzkowitz and Loet Leydesdorff in the early 1990s (*cf* Etzkowitz, 1993; Etzkowitz and Leydesdorff, 1995). A central part of the notion was the reinvigorating effect of having three partners in the relationship – what they called the *tertius gaudens* (Etzkowitz and Leydesdorff, 1996). The fact that industry, government and universities all had different goals and aims meant that any pairing of them would inevitably at some point reach an impasse which would be extremely difficult to resolve; but a third partner in an outside sector could bring these tensions to the surface and develop constructive solutions to the problems that would enable progress to be made.

Etzkowitz and Leydesdorff identified that a strong Triple Helix was characterized not only by good partnerships between actors, but by the way the tensions played out. Inevitably, coalitions faced problems that led to tensions, and so it was in the spaces where those tensions could be most productively solved that the

most dynamic and economically successful places evolved. The success of these places could consequently be attributed to the fact that their Triple Helix arrangements were sufficiently fluid and oriented towards achievement (that is, that they were entrepreneurial Triple Helix arrangements) as opposed to those places where arrangements were left to one dominant force, whether the state (*dirigiste* in the language of Cooke, 1998) or the market (*laissez-faire*).

The Triple Helix notion has become very popular since the concept was advanced, and it is now used extensively by academics, policy makers and practitioners talking about the messy business of improving innovation policy. Indeed, in Europe, the *ex ante* conditionality requirement for all countries to have in place Regional Innovation Strategies for Smart Specialization (‘RIS3’ strategies) before they are eligible to receive Structural Funding has seen the Triple Helix become, for the first time, part of a statutory institutional governance repertoire (European Commission, 2014). At the same time, questions may be asked about whether the Triple Helix model is a suitable

analytical tool for those important parts of the innovation landscape that it does not adequately include.

Calls for the inclusion of civil society in a Triple Helix echo arguments from Leydesdorff not to consider the idea of three kinds of partner restrictively (Carayannis and Campbell, 2011; Leydesdorff, 2012). But our critique of the concept goes farther than that, and suggests that the spread of the idea has seen a blurring of its meaning, and a resultant increasingly sloppy application to a very wide range of contexts to which the concept has widely varying applicability. To an extent, this development is the very reason why the idea has become so popular; a range of people searching for a way to talk about an issue that is inherently complex have found something accessible in the notion. However, this strength in popularity is also a weakness, because it has hindered the coherent development of the Triple Helix concept. For it to be more than a policy panacea (*cf* Martin and Sunley, 2003) there is a need to define it clearly and to specify under which conditions and in which ways different kinds of Triple Helix arrangements may function.

From our own perspective, as scholars looking mainly at the regional scale, there seem to be problems in applying at the sub-national level an idea that depends on national government involvement; national government then inevitably appears as a *deus ex machina*. This special issue therefore seeks to bring some precision to the idea of the regional Triple Helix concept (hereinafter RTH, *cf* Etzkowitz, 2008). The five papers that follow offer a set of practical but rigorous examples of how to understand effective dynamic regional innovation coalitions. The challenge for the RTH is to find ways to make entrepreneurialism more of an automatic response, to create cultures and norms that invisibly guide actors to co-operate and interact in innovation and risk-taking in order to improve regional economic performance. In a sense, building effective regional Triple Helices means finding ways to insert entrepreneurialism into the 'DNA' of a place, and the practical ways of achieving this emerge as a set of strong messages from this special issue.

To situate this argument in a wider perspective, we reflect on the meteoric rise of the Triple Helix concept and its infusion into ideas of regional economic development as the RTH. The speed of the concept's emergence has left a number of important lacunae that future developments need to address. We present a brief overview of the five papers in this special issue of *Industry and Higher Education*, which has its origins in a session on the Regional Triple Helix at the 2013 Triple Helix Conference, held in London on 8–10 July 2013. These five papers together constitute a useful starting point towards better understanding how industry

and higher education can come together to shape the evolving development trajectories of particular territories.

The 'policy concept' of the Triple Helix partnership

Since the notion of the Triple Helix emerged it has become almost paradigmatic in its dominance of particular fields of innovation studies, policies and practice, particularly those linked to territorial economic development. The original academic articles have become classics, picking up thousands of citations in territorial innovation studies and spawning what may be considered a new 'field of territorial innovation models' (*cf* Moulaert and Sekia, 2003). Many key multilateral policy organizations, such as the World Bank and the OECD, have internalized and are now themselves transmitting the message that innovation and place matter, and the Triple Helix has become a key means of conveying this message and making it central to policy (*cf* McCann and Ortega-Argiles, 2013). With pressure from multilateral and national policy makers, it is hardly surprising that Triple Helix models have become a 'holy grail' for those seeking to make places more entrepreneurial, whether working in universities, local government or innovative businesses.

At the same time, however, it is clear that different people mean different things when they talk about the 'Triple Helix'. Some, particularly those most closely associated with the Triple Helix Association, are talking about two convergent bodies of literature explaining territorial dynamics from either a neo-institutional or neo-evolutionary starting point.¹ There is also a much broader group of academic researchers studying territorial innovation who find it useful to make a distinction between the three different components and to explore the three sets of bilateral relationships as well as the collective effects they have. Practitioners may be concerned with trying to bring together a group of actors and encouraging rather more collaboration than competition in innovation. Innovation policy makers may be searching for a language in which to make their interventions palatable and alluring. Key opinion formers at the highest level (national, multinational, global) are trying to find ways to encourage more attention to innovation more generally.

One reason why the Triple Helix concept has been so successful is that it has had the conceptual power to speak to all of these constituencies simultaneously and to help them address particular intractable challenges related to the development of the knowledge economy. To the scholar, it is capable of carrying a highly nuanced story of the context-dependent way in which

innovation cultures build up in particular places over time as a result of the interplay between complex constellations of innovation actors. To the policy maker it becomes an alluring language that can create a widespread mobilization across society and the economy towards a highly desirable end without necessarily bankrupting an already stretched Finance ministry. However, this flexibility comes at a cost, especially when these different communities using the concept in different ways attempt to learn from each other.

In a sense, we have been here before with the idea of 'clusters', which became ubiquitous in economic development strategies in the 1990s. Martin and Sunley (2003) identify the problem that arises when an academic theory becomes an uncritical socio-economic development idea, calling it a 'chaotic concept'. Böhme and Gløersen (2011) demonstrate how the idea of 'territorial cohesion' has evolved into multiple meanings as it has emerged as a way of articulating regional development problems in Europe. Because the concept became entangled in a number of policy developments, it was being used in six different ways by six very distinct communities, and these different meanings were by no means mutually compatible. This made it impossible to achieve agreement on practical policy details, such as indicators to measure progress towards cohesion, and ultimately placed the whole notion at risk of becoming non-implementable.

This idea of the chaotic concept has much in common with Bøås and McNeill's (2004) idea of quasi-concepts. These authors looked at how the term 'sustainable development' had lost any real meaning in the course of becoming ubiquitous. They argued that a dialogue between enthusiastic policy makers and researchers had led to it becoming:

'... a concept which is more than simply a slogan or buzzword because it has some reputable intellectual basis but may nevertheless be found vulnerable on analytical and empirical grounds. What is special about such an idea is that it is able to operate in both academia and policy discussions.' (McNeill, 2006 (*sic*), p 336, quoted in Jenson and Harrisson, 2013, p 15)²

It was this threat, that the Triple Helix model is evolving into a policy or quasi-concept, that stimulated both the conference and the special session. If it is a concept that applies to every situation, then it is extremely difficult to understand how to apply it differently to different situations. Is the aim to describe existing regional arrangements, to explain how these arrangements have emerged, or to try to imagine a

better future? Are we trying to evaluate progress towards an ideal type, encourage that progress, or chart and understand the evolution of places in their own unique contexts? Addressing each of these questions requires very different kinds of approaches and different studies and tools – something we now consider in the context of the RTH.

The rise of the RTH quasi-concept

The idea of the Triple Helix emerged at the time of the popularization of a particular set of high-technology spaces in which strong industrial sectors in emerging areas were driving strong economic growth, making them popular best practice places for policy makers (Markusen, 1987; Saxenian, 1994). From the early 2000s, policy makers became increasingly interested in the idea of the Triple Helix at the regional scale to help improve the performance of regional industries (Charles *et al*, 2003). This has formed part of a more general effort to encourage interactive and dynamic policy frameworks for supporting innovation in ways that create clear economic advantages for the host regions. The original idea had a clear regional dimension, inspired by close links between universities (MIT and Stanford) and high-technology clusters (Boston and Silicon Valley), mediated by smart policy interventions (Etzkowitz and Leydesdorff, 1995).

Since 1990, there has been a steadily growing interest in encouraging regional innovation policy. In Europe, the European Commission launched a small-scale pilot of Regional Technology Plans in eleven regions, seeking to bring government, universities and firms together to map the potential for local connections and develop instruments to achieve it (Morgan, 1997). By 2000, all of the European Union's then 15 member states were being encouraged to develop Regional Innovation Strategies and by the time ten former Eastern Bloc states joined in 2005 innovation was the dominant theme in European cohesion policy. By 2014, Structural Funding had been made contingent on countries having in place regional Smart Specialization strategies that identified areas of strength in consultation with regional industry and universities (European Commission, 2014).³ The foundations appear to have been laid for RTH concepts to be widely used in policy making and as the basis for further studies of building synergies and addressing conflicts in regional innovation environments.

However, there is a question about the extent to which these new concepts are genuinely achieving traction with policy makers. It has been suggested that all that has been seen in the shift from clusters to smart specialization strategy is the rebranding by policy

makers of their clusters as foci of smart specialization, without taking account of the other interactive and dynamic elements (Pugh, 2014). The practical question arises of what precisely is useful about Triple Helix concepts from a policy perspective. It is widely acknowledged that not all regions can be the new Silicon Valley (even if that is a widely-expressed desire by policy makers). The phenomenon of ‘thin institutional borrowing’ is well documented in the field of regional development (Lagendijk and Cornford, 2000). But, given the ambiguities concerning what, essentially, a Triple Helix policy might involve, it is hard to criticize policy makers when their best-practice lessons have been drawn on the basis of supposedly objective studies. It has long been acknowledged that we cannot say successful places are successful simply because of one or two factors (such as regional venture capital or platform organizations), but at the same time academics and policy makers alike often attempt to transfer policy ideas precisely on that basis rather than developing a fuller understanding of how to build innovative places.

Ultimately, the ideal policy is one that creates automatisms and tendencies towards intervention without necessitating wide-scale (and expensive) intervention. So the ‘holy grail’ of innovation policy has been to find ways to deliver co-ordination-at-a-distance among a range of partners. We see the solution here as a return to the metaphor of the Triple Helix as a play on the idea of the Double Helix and the continually evolving DNA at the heart of life. The aim of Triple Helix policy is to create a kind of entrepreneurial regional ‘DNA’, unique to the regional context and with the capacity to encourage new combinations (‘mutations’) that can lead to the development of new industries. We therefore argue that the key challenge for research is to understand how particular kinds of micro-interactions insert themselves into this regional entrepreneurial DNA, to create a longer-lasting legacy of change ultimately manifested in more entrepreneurial, more competitive and wealthier places.

The papers in this special issue

Each of the papers we have assembled in this special issue has its own perspective on this issue of how entrepreneurialism and innovativeness can become part of a place’s ‘DNA’, so that people and organizations are unconsciously guided to embrace more collaborative and synergetic behaviours. We do not claim that the coverage is systematic or comprehensive, because the papers have emerged from a conference session; but they do capture stories from places where a Triple Helix perspective has generated useful insights. They

therefore provide a means to understand the practicalities of making places entrepreneurial, and in particular the challenge of converting occasional activities into regular behaviours, and ultimately into landmarks of those regional environments. Given the fact that the involvement of universities is a distinguishing feature of Triple Helix arrangements, it is perhaps unsurprising that most of the papers take the university as their starting point. However, at the same time they also highlight how interactions and relationships between the regional partners create regional attitudes and characteristics that make it reasonable to talk of regional cultural change.

In the first paper, Lazzeroni and Piccaluga look at one way in which more entrepreneurial ‘DNA’ can be infused into a place. It has long been recognized that universities can play a role in the *genius loci*, the spirit of a place, and Michela Lazzeroni and Andrea Piccaluga ask how universities can weave themselves into the trajectories along which places develop (Leihy and Salazar, 2012). They point to the fact that in addition to the direct effects on the economy there are two other important ways in which universities infuse new behaviours into places. The first is through their wider connections, what the authors call the ‘relationality’ of universities, in attracting and anchoring new globally-mobile elites through ‘glocalization’ processes (Swyngedouw, 1992). The second is the effect universities have on the local culture, creating a ‘knowledge landscape’ which echoes Churchill’s declaration that ‘First we make the buildings, and then they make us’ (Benneworth, 2014). These factors together help to embed a hybrid glocal entrepreneurial science culture, which helps to co-ordinate local actors and invisibly guides Oxford, Leuven and Pisa, the examples chosen by Lazzeroni and Piccaluga, towards high-technology, ‘high-road’ development trajectories.

The second paper considers an additional role played by the university in Triple Helix arrangements – that of supporting the development and implementation of appropriate policies and, in particular, of locking-in high-technology development trajectories by developing synergies. In this context, Helen Lawton Smith and Rupert Waters examine the role a university can play in places where entrepreneurialism is already a part of the regional ‘DNA’, by acting as a regional innovation organizer (Etzkowitz, 2008). Taking the example of Oxford, they identify how the partners came together collectively to target a number of constraining factors for the local development environment, affecting innovation, skills, infrastructure and finance. However, despite these measures the policy solutions and interventions did not become woven into the regional environment; rather, the policy solutions and

interventions remained one-off and fragmented. Lawton Smith and Waters highlight the difficulty of creating synergies in even the most propitious innovation environments – a salutary reminder for policy makers and practitioners less blessed with entrepreneurial innovation assets than the Oxford environment.

In the third paper, Chang Ho Lee, Sharmistha Bagchi-Sen and Jessie Poon consider an underexplored dimension of the Triple Helix: the relationships within particular spheres, in this case the academic sphere. The paper focuses on the effort required to change internal institutional architectures in higher education institutions to ensure that entrepreneurial activities leave a more significant and enduring regional legacy. In particular, Lee *et al* discuss the domain of translational research, in which efforts are made to create collaborative environments where technologies can be moved quickly from laboratory to innovative activity. The case study of the Buffalo Medical Campus in New York State brings with it the ethical challenge of moving through the clinical experimental stage and, from an innovator's perspective, ensuring that appropriate regulatory hurdles are cleared. The paper highlights the importance of pre-existing linkages between universities and firms for the facilitation of entrepreneurial activities; these linkages may come about through joint research, training and mentoring activities. They then become pathways by which innovativeness is imparted to entrepreneurial carriers and embedded into new technology businesses, creating regional growth patterns. Regional entrepreneurial capacity, therefore, depends on the presence of these networks.

In the fourth paper, Kazuhiro Nozawa shifts the focus away from the university domain to the role of government, and the complex interplay between the exogenous national level and the subnational level, in shaping regional Triple Helices (RTHs). Again building on Etzkowitz's (2008) notion of the regional Triple Helix as an interplay of three spaces – knowledge, consensus and innovation – Nozawa considers an RTH as functioning as a collective relationship between actors in a regional coalition. Drawing on three prefecture-level examples, he argues that the Japanese version of the RTH that has evolved reflects Japan's relatively poor record of entrepreneurship, its dominance by the manufacturing sector and the importance of collaborative local technology centres for co-ordinating relationships between universities and innovative SMEs. Although there were variations in the particular coalitions, reflecting different institutional, sectoral and firm characteristics, common to all was the fact that they did not achieve completeness: that is to say, they could not provide all the linkages needed to

stimulate economic growth and development, and external linkages remained important.

Finally, Magnus Klofsten, Dzamila Bienkowska, Inessa Laur and Ingela Sölvell reflect on the relationships between cluster initiatives and regional Triple Helix activities. In particular, they examine whether policy and concept learning from cluster theory and practice can be applied to the case of the regional Triple Helix. Klofsten *et al* identify five factors that characterize successful cluster initiatives, and suggest that these may be applicable to measuring, evaluating and directing regional Triple Helices. They argue that there needs to be a clear gap that the initiative will fill, a set of motivated actors, useful activities, a critical mass and an effective structure. These findings are particularly salient for those charged with the practicalities of delivering regional Triple Helix activities, and the paper provides a useful basis for thinking through the limits of policy intervention in inserting entrepreneurial 'genes' into a place's innovative DNA. Klofsten *et al* conclude by pointing to the importance of continual mutual learning between Triple Helix partners, and the need for policy interventions to recognize and support those learning activities.

Notes

¹http://triplehelix.stanford.edu/3_helix_concept (accessed 08 December 2014).

²The Jenson and Harrison report claims that this quotation originates in McNeill, 2006, but consulting the original McNeill paper reveals that the quotation is entirely embedded in a quotation from the antecedent paper.

³'100% suspension of interim payments could be applied for a priority axis devoted to R&I under a national/regional OP, already at the time of OP adoption, in a case where there is no documented national/ regional research and innovation strategic policy framework for smart specialisation (since this constitutes a significant prejudice as regards the effectiveness of EU intervention).' (European Commission, 2014, p 20).

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