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Editorial for virtual special issue ‘New theoretical and policy perspectives on regional innovation systems’

Beyond top-down recipes to connected innovative places

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Introduction

The regional studies community has a long history of engaging in policy issues and conducting research at the confluence between theory and practice, and certainly around regional innovation policy. Since the early 1990s, a number of theoretical ideas made their way into policy, particularly (but not exclusively) at the European level. A prime example here is the regional innovation systems (RIS) concept, coined by a number of regional economic geographers in the 1990s (Cooke, 1992), which ultimately became a guiding rationale for regional and innovation policy (Asheim, Boschma, & Cooke, 2011). Indeed, Cooke (2008) cites regional innovation policy as a key source for the RIS concept’s development; the concept was from its genesis always closely linked to practice.

RIS is not unique here in achieving a high degree of policy interest: a number of theoretical approaches to regional economic development and innovation, including the triple helix, national innovation systems, innovative milieu, creative cities and learning regions, will all be familiar to readers as they have been widely discussed and studied in various settings over the last 20 years. What marks the RIS concept is its persistence as both a concept and policy blueprint: we see its core ideas and elements being subsumed and reconfigured into contemporary European regional innovation policy discourses around smart specialization.

Whilst the smart specialization concept does have an academic history, it has quickly been subsumed into policy thinking; research on smart specialization is only now catching up with policy practice (Foray, David, & Hall, 2011). We can see smart specialization as the latest step in evolving ideas around regional economic development and competitiveness, the new policy agenda repackaging a number of pre-existing ideas and approaches associated with earlier RIS work. But how relevant and useful such an approach is to diversity of European regions, including weaker, peripheral and non-competitive regions, is debatable: this special issue makes a timely contribution to testing the applicability of these ideas in ‘real world’ settings.

Over the past decade, a number of important issues inherent in the RIS concept have been identified (e.g. Doloreux & Parto, 2005; Iammarino, 2005), regarding RIS theories’ key concepts of system components, boundaries, causal relationships and system performance measurement (Carlsson, Jacobsson, Holmén, & Rickne, 2002). These remain largely unresolved as the concept continues to be used primarily as a normative/
prescriptive policy tool (Uyarra & Flanagan, 2010). There remains a clear need to critique further these emerging ideas in different regional settings, unpacking and ideally resolving these fundamental shortcomings, and testing the RIS approach’s usefulness to practitioners in different regions as a policy blueprint.

The current virtual special issue of this journal on Regional Innovation Strategies speaks to this agenda; this editorial sketches out potential future research agendas building on the gaps in current knowledge and theory identified. Three specific research gaps emerge in the papers: first is the often scant consideration of both inter- and intra-regional connectivity as a vital element in RIS performance; second is the vital but oft-overlooked issue of balancing between top-down policy and theoretical approaches and bottom-up activities within regions; and third is the persistent underrepresentation in the literature of poorly performing/partial/dysfunctional RISs.

**Shortcomings in the ‘regional innovation system’ (RIS) academic-policy community**

By considering different dimensions of RIS and innovation policy, this special issue represents a range of researchers’ efforts to advance our understanding of the applicability of theory, elucidating the shortcomings and offering potential advancements for future regional innovation theory. Taken together, we can identify significant lacunae in the existing state of the art, something increasingly important as ever more resources are devoted to regional innovation policy (in Europe and beyond). Each paper addresses a different element of extant theory, offering important insights on advancing our understanding of regional innovation dynamics and appropriate policy frameworks. Each provides a new and interesting geographical context; taken together they collectively highlight important gaps in current understandings of regional innovation theory (and policy).

**Multilevel tensions in regional innovation policy**

An identified weakness in extant RIS theory is vagueness regarding the functioning and importance of inter- and intra-regional connections. Two papers highlight both dimensions, illuminating how RISs function both within and between regions at different policy levels. They clarify the presence of tensions in developing RISs at a variety of levels, which hinders both academic understanding and the development of appropriate policy solutions.

Shin investigates a regional research and technology organization (RTO) in Gyeonggi province, South Korea, identifying interesting dynamics and tensions between the regional and national policy levels. He charts a transition from a more ‘top-down’ national innovation system focusing on national high-technology sectors to a more ‘bottom-up’ RIS focusing on small and medium-sized enterprises (SMEs). Shin questions whether national and regional priorities/needs can comfortably co-exist. The Gyeonggi ‘GSTEP’ case study suggests that this is not always possible, with pre-existing tensions between policy-makers at different levels creating intractable problems. He highlights the absence of consideration of such issues in contemporary RIS and smart specialization literatures, arguing we need to understand better how both top-down and bottom-up policies can be harnessed for regional development. Multilevel tensions provide the backdrop to many regional innovation policy efforts, but remain under-theorized and discussed.
Also tackling this thorny issue of multilevel tensions, Van den Broek and Smulders examine how cross-border regional horticultural innovation systems developed in Venlo (the Netherlands) and Lower Rhine (Germany). They identify institutional hindrances negatively influencing cross-border cooperation processes. Their institutional view facilitates conceptualizing cooperation between actors in a cross-border innovation system as a multilevel institutional architecture; that architecture is hampered via divergent regulations, laws, norms and values. Their study reveals challenges in cross-border collaboration surrounding trust, irritation, cultural differences, and divergent regional and national contexts for innovation policy or institutional architectures within which actors are embedded. They distinguish horizontal and vertical dimensions: cross-border collaboration does not necessarily correspond with increased collaboration between different levels within each nation. They call for greater investigation of multilevel dynamics and institutional architectures when considering cross-border regional innovation policy.

From general RIS theories to particular innovative places
This special issue also includes researchers’ attempts to apply and interrogate RIS theory in diverse regional settings that differ from ‘ideal’ RISs, addressing an established yet persistent literature gap concerning a lack of RIS theorization in weaker and peripheral regions (Tödtling & Tripl, 2005). Komninaki’s paper responds directly by applying RIS theory to a comprehensive study of Dytiki Ellada’s (Greece) RIS, responding to a critique of the lack of RIS development in non-successful regions. The case study allows her to provide a conceptual framework revealing four key bottlenecks or weaknesses in the RIS: weak organizations, inefficient institutions, inadequate infrastructure and loose interpersonal interactions at different geographical scales. Whilst specific elements may be present in an RIS, they do not necessarily function collectively as a good system; a whole-system approach should instead consider the wide variety of actors and dynamics. Komninaki concludes by proposing a practical tool to assist scholars and policy-makers in this task.

Miller considers the role and functioning of RTOs, this time turning our attention to an RIS with identified structural weaknesses: Scotland. The RIS framework is utilized as an analytical tool to unpack some of the issues facing weaker, peripheral innovation systems. He provides the example of the Strathclyde Technology and Innovation Centre (TIC) as a policy attempt to address linkages, themes and services, and strategic capability issues in the RIS. Miller argues against transplanting RTO models from successful cases into underperforming regions, promoting a more flexible and pluralistic conception based on the identified weaknesses of the RIS. The RIS theory is employed in this paper in order to conduct ex-ante evaluation of a programme, and Miller finds it to be useful in this regard.

The role of universities in RISs
Two papers in this issue, by Sánchez-Barrioluengo and by Korotka, focus in on an element of the RIS often featuring in policy efforts: higher education institutions. Whilst RIS theory acknowledges their existence, this is often broad and generic with surprisingly little examination of the specific dynamics of universities’ roles and functions in the RIS. Korotka focuses on Twente, the Netherlands, questioning whether geographical proximity is a prerequisite for university–industry collaboration, or whether other types of proximity are more important for building local linkages, following Boschma’s (2005) framework. She finds that 53% of researchers cooperate predominantly with national partners, with
only 10% citing the local area as industrial partners’ primary location, suggesting different types of proximity are associated with collaborations at different geographical scales. Cognitive, social and organizational proximities proved to be most influential in determining academics’ partner choice, with geographical proximity not a prerequisite for effective relationships. A number of policy recommendations emerge to enhance collaboration between academics and local SMEs for greater regional economic development success. By unpicking the importance of geographical proximity for university–industry collaboration, this paper challenges the fundamental basis of the RIS.

Sánchez-Barrioluengo’s paper takes a wider view across different regions, questioning not only how universities influence their surrounding regions but also how regional characteristics shape universities’ performance across Spain. She defines two clusters of universities in Spain: those that are geographically localized and traditionally positioned (performing better with the exception of teaching), and those that are not. The institutions that are not geographically localized and traditionally positioned, which show weaker performance in terms of economic contributions, are overwhelmingly located in weaker/peripheral regions with fewer local actors demanding universities provide knowledge and innovation. She questions the one-size-fits-all approach to Spanish university economic development policy, suggesting instead to build on the strengths of institutions and regional characteristics; e.g. universities in peripheral regions contribute regionally via teaching whereas the universities in core regions contribute via third mission activities.

Towards a future research agenda for regional innovation systems (RISs)

When taken together, these contributions also highlight at least three important gaps in the current theoretical and policy state of the art regarding understanding and implementing regional innovation policy.

Connectivity within and between regions

Firstly is connectivity both within and between regions; smart specialization theory refers to this as being important but provides few guidelines or mechanisms for implementing this pragmatically, with little clarity provided as to which actors should be engaged and how. Beyond referring to a crucial but little elaborated ‘entrepreneurial discovery process’, there is scant guidance on building collaboration and shared understanding across the region around the key strengths. Theory need better understand who are the key regional actors to clarify precisely with whom policy-makers should be engaging in entrepreneurial discovery processes and steering the direction of travel. Korotka is here important in helping us to understand how actors collaborate in innovation systems, and what are the key determinants of this; she highlights the need for policy encouraging and exploiting different types of proximities rather than relying on geographical proximity alone.

The theory provides little instruction on how to build inter-regional links, beyond vague statements about their importance. Van der Brock and Smulders also illuminate this oft-overlooked dimension by considering cross-border regions, usually ignored in dominant discourses which situate regional policy-making neatly within a national context and framework. They lead us to question how smart specialization enables these cross-border systems, highlighting that despite the rhetoric of encouraging intra-regional links and the common sharing of ‘enabling technologies’, theory has very little to say about how different policy-making cultures and institutions can be built across borders.
These papers make interesting additions to the growing work examining multiple territorial settings for innovation policy (e.g. Laranja, Uyarra, & Flanagan, 2008) and conceptualizing innovation dynamics as multi-location and multi-scalar phenomena (Crevoisier & Jeannerat, 2008).

**Balancing top-down concepts with bottom-up strategy development**

Another considerable gap is the balance that should be achieved between the rollout of top-down concepts and bottom-up decision-making and strategy-building. It is well demonstrated that ideas emerging from leading regions may not necessarily translate well into heterogeneous regional settings; an issue inadequately addressed within contemporary smart specialization theories. A balance has yet to be achieved between (1) tried-and-tested recipes that have been proven to work and act as a means of sharing knowledge and best practices, and (2) providing frameworks that appreciate heterogeneous regional contexts and allocate local policy-makers and regional communities sufficient autonomy. Balancing between inter- and intra-regional linkages, as per the well-cited phrase ‘local buzz global pipelines’ (Bathelt, Malmberg, & Maskell, 2004), is an especially pertinent issue to border regions, alongside other weaker and peripheral regions dealing with problems of lock in.1 There is often an assumption that this dynamic can work in an unproblematic manner, ignoring the tensions and difficulties inherent in working in a multilevel or cross-border policy environment. The omission of any real handling of this issue in smart specialization guidance and literature represents a significant oversight. The concept needs to address better how and why people work together, and how best to encourage this within and across borders, rather than assuming that the presence of certain factors and their geographical co-location automatically leads to collaboration and spillovers.

The papers in this special issue all apply regional economic development theory in diverse settings, many of which lie outside the typical exceptional or core setting. Komninaki’s paper is commendable for attempting to render the RIS framework more relevant to policy-makers in peripheral regions by creating a framework for identifying bottlenecks in the system. In calling for more bottom-up and regional perspectives, her paper elucidates the challenges being faced by policy-makers in peripheral regions, often overlooked by the main theories. These fail to account for and often gloss over pervasive problems of weak organizations, inadequate infrastructure, and loose interpersonal interactions in the current smart specialization discourse.

Sánchez-Barrioluengo also turns our attention to the challenge of peripherality in the context of enhancing universities’ performance and economic roles. Her study underlines the importance of regional characteristics in shaping economic strategy and performance, and highlights the need for more studies that take a wider view of these, and how they impact upon different elements of the innovation system. Her study also causes us to question the one-size-fits-all conceptualization of universities’ roles, and that the current predominant framework offers little insight to regional policy-makers as to how to harness their specific characteristics and attributes (including their institutional and organizational assets).

**Innovation theory and strategy for all regions**

Examining peripheral and weaker regions is certainly a central tenant of contemporary research; both Miller and Pugh examine such characteristic regions in the UK – Wales
and Scotland. Miller is also concerned with universities, and how they can collaborate more with regional firms given the underlying RIS characteristic in Scotland of the scarce network links, a more general characteristic of weaker RISs. His paper illuminates this important shortcoming in current thinking, which does not fully explore the innovation networks that exist within regions, and assumes that policy is operating within a black box of functioning RISs. Taking this line of thinking further, Pugh considers the application of smart specialization in the weaker region setting, exploring some of the assumptions built into the theory, and how regions may be (mis)interpreting the concept. The paper highlights some important dangers inherent in taking a recipe book approach, potentially well suited to leading and core regions, and attempting to apply it in heterogeneous settings.

This special issue provides a challenge to our leading incumbent theories of regional innovation systems and policy, advancing the state of the art by highlighting and beginning to fill significant gaps in our current knowledge. Each takes a critical and challenging position, with at their core a need to illuminate what is really happening ‘on the ground’ in different regional settings. The task is also one of storytelling by uncovering the different approaches and experiences across different regions, allowing a mutual learning process to take place. A final important common element that is worth reiterating in these papers is their relevance and desire to inform major policy debates; each offers perspectives, challenges and recommendations for policy-makers, building on the strong tradition of the field of regional studies.

Disclosure statement
No potential conflict of interest was reported by the author.

Note
1. For a discussion of which, see Martin (2010).

References


