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Michael Porter's Cluster Theory as a Local and Regional Development Tool – The Rise and Fall of Cluster Policy in the UK

Jon Swords

Geography and Environment

School of Built and Natural Environment

Northumbria University

Newcastle upon Tyne, UK

jon.swords@northumbria.ac.uk

0191 243 7942

Abstract

There has been much written on industrial agglomeration, but it is Michael Porter's cluster theory, above all others, which has come to dominate local and regional economic development policy. His work has been adopted by the OECD, EU, national and local governments the world over. He and his consultancy group have led reviews of national economic growth strategies in dozens of countries. This rise to prominence, however, is in the face of widespread critique from academics. Cluster theory's theoretical foundations, its methodological approach and practical implementation have all been unpicked, leading some to label little more than a successful brand riding the wave of new regionalist fashions. Despite libraries of incredibly useful books and articles on clusters, there remains an absence of work which interrogates the translation of clusters into, and then through local and national policy. The aim of this paper is to go some way to remedying the situation by examining the influence of Porter's cluster theory is charted through an examination of UK regional development policy in the 1990s and 2000s. To help map the journey of clusters

into and through UK economic development policy actor-network theory (ANT) is adopted as an explanatory framework.

Keywords – Michael Porter – Clusters – Policy – UK

1. Introduction

For over a century economic geographers and those in related disciplines have sought to better understand processes of industrial localization. Myriad theories with origins in numerous disciplines have sought to explain why firms in particular sectors of the economy, and in particular places in the world locate together. Policymakers seeking to foster regional economic growth have consulted these theories, some have proved useful, other less so, and much has been ignored. Michael Porter's cluster theory, however, has been adopted above all others by policymakers the world over.

His approach is built on the concept of competitive advantage and has been utilised as a development tool by the EU, OECD, national governments, regional development agencies and local authorities around the world. This level of popularity with policymakers is rarely seen emanating from academia, and it is a particularly impressive feat given the level of criticism his theory has attracted. Numerous academics have written about the conceptual flaws in Porter's work (Martin and Sunley, 2003; Taylor, 2010), but regional economic development policy over the past two decades, until recently at least, has been dominated by clusters. Despite libraries of incredibly useful books and articles on clusters, there remains an absence of work which interrogates the translation of clusters into, and then through local and national policy. The aim of this paper is to go some way to remedying the situation by examining how that has happened in the UK context.

The life (or more accurately lives) of clusters have been described as ‘elusive’ (Malmberg and Maskell, 2002) and ‘chaotic’ (Martin and Sunley, 2003) and it is only relatively recently this complexity has begun to be unpacked (Benneworth and Henry, 2004; Vorley, 2008). By way of example Maskell and Kabir (2006) identify over 1300 academic papers mentioning clusters between 1990-2004, and Martin and Sunley’s (2003) paper critiquing clusters has been cited over 340 times (Web of Knowledge, 2011). To help map the journey of clusters into and through UK economic development policy actor-network theory (ANT) is adopted as an explanatory framework. ANT is particularly useful to follow the story of clusters because it focuses “on how things are ‘stitched together’ across divisions and distinctions” (Murdoch, 1997: 321), in this case the intertwining of academics in a number of cognate disciplines (business studies, economic, and economic geography), policymakers, knowledges, concepts, evidence and policy.

In mobilizing such a framework the limitations of pure ANT method are acknowledged. As O’Neill and Whatmore (2000: 124) explain ANT is not an “‘off-the-peg’ theoretical template which can be imported to frame the story in some formulaic way”, rather it provides ‘rules of method’ which can be applied to better understand complex networks of relations (Lagendijk and Cornford, 2000). Lagendijk and Cornford use these rules to explore the growth of a regional development industry. Their paper takes a general examination of how two concepts – clusters and learning regions – have been enrolled into regional development policy. This paper is a useful starting point both in methodological and empirical terms. What is missing, however, is an illustration of the how real policy and policymakers became enrolled in a clusters actor-network.

The basic premise of ANT allows this by ‘following the actors’ and their heterogeneous relationships within a network (Latour, 1997). Importantly, actors are not just individual people, but include organizations, artifacts, knowledges and concepts: “[a]ctors can be

defined as any entity able to associate texts, humans, non-humans and money” (Callon, 1991, p. 140). Without going into too much detail (see Murdoch, 1995; 1997; 1998 for its use in geography) it is necessary to introduce three key elements to aid the following explanation: translation, alignment and black boxes.

Translation is the process by which actors are drawn, or enrolled, into actor-networks. Through negotiation actors become aligned or disciplined to the same way of thinking and acting. This occurs as actors “appeal to other actors, to enroll them, to mobilise them, and to align and fix interest relationships” (Lagendijk and Cornford, 2000: 211). This happens as “actors (1) construct common definitions and meanings, (2) define representativities, and (3) co-opt each other in the pursuit of individual and collective objectives” (Bardini, 1997: online). Transformation of actors as this occurs is an important process to allow alignment to be achieved: actors gain ‘shape and function’ as they are disciplined in a network (Murdoch, 1997), and these functions might be multiple.

When alignment is at its strongest a network is stabilized and what Latour (1988) terms ‘black boxes’ can form. This happens when sets of knowledges, technologies, ways of acting become so established they are no longer questioned: “[a] black box contains that which no longer needs to be considered, those things whose contents have become a matter of indifference” (Callon and Latour, 1981 p.285). The result is certain ways of thinking or acting, particular knowledges or technologies become ‘obligatory passage points’ that must be passed through and accepted to form an actor-network (Clegg, 1997).

A major weakness of using ANT is the lack of context it reveals. Callon (1999) seeks to address this with the idea of framing actors’ relations and disconnections. Lagendijk and Cornford (2000) take this further by drawing on Clegg’s (1997) work on combining theories of organization fields with ANT. Organisational fields can be thought of as collections of

similarly acting organisations, and provides a useful way to think about the context or background in and through which actor-networks form. They also provide ways to consider from where power emanates as it circulates and is used by key intermediaries - or 'relay agents' - in processes of translation, transformation and black boxing (Lagendijk and Cornford, 2000).

To help organize this story of clusters a linear narrative is set out in this paper as a heuristic device to trace their spread through UK policy chronologically, and the explanation is, therefore, necessarily simplified and partial. What is revealed, however, is an account of how Porter aligned himself with a regional development field which at the end of the 20th century had transformed itself into an industry compatible with the ideas Porter was promoting (sections 2 and 3). This alignment of ideas and objectives was paralleled around the world and in the case of the UK saw central and regional government enrolled into a clusters actor-network (section 4). Academics were less easily enrolled, but the drive for greater entrepreneurship in universities and the sheer popularity of Porter's concept meant academics became, if somewhat reluctantly, part of the network (section 5). Academics' critique of clusters, together with the advance of alternative theories has seen the influence of cluster decline in recent recent years (section 6).

2. Porterian Clusters

Michael Porter is an American business economist. In 1990 he published *The Competitive Advantage of Nations*, a book which built on his earlier work on competition (Porter, 1979) and sought to explain the conditions which allow countries to accrue competitive advantage in particular business activities. Porter conceptualised a 'competitive diamond' (Figure 1) of factors that, he claimed, influence a country's competitive performance in international markets (Porter, 1990).

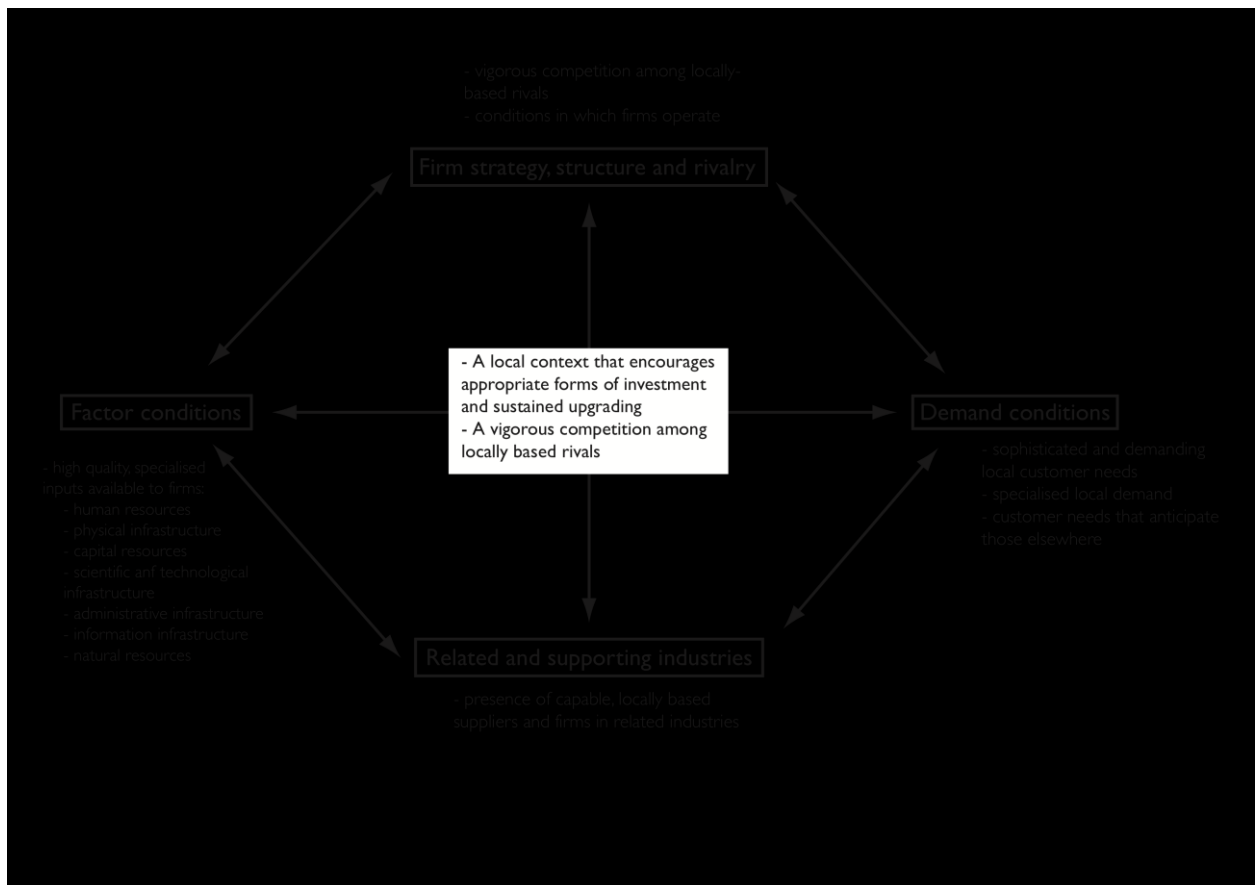


Figure 1: Porter's Competitive Diamond (Porter, 1990)

He subsequently developed this theory arguing that the interactions in the competitive diamond are more intensive, and therefore more effective when firms operate in close proximity (Porter, 1996; Porter, 1998a; 1998b). As evidence of this he pointed to the fact that clusters of firms in similar industries are “strikingly common around the world” and that a country’s most globally successful firms are likely to be clustered (Porter, 1990: 120). He also suggested 99% of employment in US regional economies is concentrated in local clusters (Porter, 2001; see also Martin and Sunley, 2003). At this scale, he argued, clusters of

firms can generate competitive advantages from enhanced productivity levels, higher innovation and new business formation (Porter, 1998b).

For policymakers, understanding these factors is achieved through cluster mapping exercises, which form the first stage of any cluster development strategy, and are designed to identify existing and potential clusters. Once a cluster has been identified its strengths and weaknesses are determined, before tailored interventions are developed (Rosenfeld, 1997 outlines a series of questions policymakers use in this process). The explicit territorial element of Porter's model and the case study approach to mapping clusters was instantly attractive to policymakers.

Lagendijk and Cornford (2000) argue the *Competitive Advantage of Nations* played a central role in black boxing the cluster concept. This only happened through a process of translation, however. In the early 1990s it was others who appropriated Porter's ideas and created their own versions of clusters. The OECD, for example, adopted and promoted clusters to foster innovation systems (Bergman, 2001; Benneworth and Henry, 2004). The transformation of Porter's own ideas came later. His original work focused on the scale of the nation, but as interest in his cluster theory increased he shifted the emphasis of clusters and competitive advantage to regions. As he explained in the introduction to his 1998 edition of *The Competitive Advantage of Nations*, "[w]hile the book is set at the level of the nation, the same framework can and has been readily applied at the regional, state, and city level" (xxi). The increased prominence of networks in economic development, and notably theories of innovation led Porter to shift his ideas again so "the cluster concept could be absorbed within regional development agendas" (Lagendijk and Cornford, 2000: 214). In the early to mid-1990s, then, we see Porter aligning the cluster concept, and in turn himself, with regional policy makers. To appreciate this more fully, to understand the transformation of

policy makers to a clusters way of thinking, and thus explain how Porter's ideas became so dominant, it is necessary to examine the organisation field of regional policy making.

3. Regional Policy Making and Porter's Popularity

Martin and Sunley (2003) suggest Porter's accessible writing style and his ability to convey complex relationships and processes without reference to theoretical language found in much of the academic literature was an important factor. Porter made it his explicit aim to "capture the complexity of what actually happens in companies and industries in a way that both advances theory and brings that theory to life for practitioners...[to] effectively bridge the gap between theory and practice" (Porter, 1998: 1-2). Thus, there is little use of terms such as flexible accumulation, post-Fordism, neo-Marshallian nodes or untraded interdependencies one might find elsewhere in the academic literature. In their place Porter uses terminology from economics and business studies, language familiar to policymakers, literally translating theory and case studies for a non-academic audience. The story of Porter's rise to prominence is not as straightforward as writing for your audience. Of particular importance is the way economic policy environment changed in the late 20th century, allowing Porter's ideas and policymakers to align their goals into a common set of objectives.

To begin with Porter's work proposed a shift of focus from the macroeconomic conditions for growth to the microeconomic foundations for growth and explicitly outlined the role of policymakers in building these foundations. This chimed with policymakers working in a changing economic governance regime. After the Second World War economic development approaches in the developed world were underpinned by a 'spatial Keynesianism' characterised by government intervention to balance economic prosperity between better and poorer performing regions through redistributive investment, welfare payments and

demand-led incentive policies (Tomaney, 2008; see also Brenner et al., 2003; Tickell and Peck, 2003). The forces which revealed the importance of regionalized industrial districts - the hollowing out of the nation state, the rise of neo-liberalism and associated approaches to regulation (Amin, 2001; Jessop, 2002) - also revealed the incompatibility of spatial Keynesianism with the new economic world order. This led to a rethink of how to foster economic development in a way that allowed regional economies to flourish (Whitford and Potter, 2007). In the UK the Conservative government elected in 1979 halted planned industrial policy and privatized large portions of nationalized industry. This ushered in a new approach to economic development policy along with an increased emphasis on attracting foreign investment. In parallel with these shifts, the Thatcher government centralized control over local authority expenditure, prompting the latter to seek new strategies for local and regional economic development (Lagendijk and Charles, 1999). Clusters could be aligned with this change relatively straightforwardly for a series of interconnected reasons. Five broad shifts can be identified, each of which helped create an organisational field more open to Porter's ideas.

First, supply-side interventions had been popular since the 1970s, and although many had disappointing results, ready-made cluster policy which focused on relatively inexpensive interventions such as technology and training support was appealing to those seeking to foster economic development (ibid). The message was policymakers could influence local and regional economic development relatively cheaply. In addition success stories from Emilia-Romagna in Italy, Batten-Württemberg in Germany and Silicon Valley in the US were invoked as exemplars of what could be achieved (Lagendijk and Cornford, 2000).

Second, clusters provided a way to balance endogenous development and inward investment. In turn, collaboration between domestically and internationally owned firms could increase the benefits of inward investment, criticised in some quarters for being too

footloose, by embedding it in regional economies through clusters. It was also hoped small firms would learn from their larger counterparts as collaborative and supplier-buyer networks developed and, in a best case scenario, local spin-offs could be created automatically rooted within a region.

Third, clusters took a more holistic approach to industrial development by focusing on vertically and horizontally integrated strategic groups rather than the traditional, strictly defined sectoral groupings of previous industrial policy (Roelandt and den Hertog, 1999).¹ Such groupings allowed for shared research and development capacity, and permitted policymakers to claim they were achieving the latest buzzword concepts such as innovation, competition, synergistic growth and associational economies which go along with high-tech and research intensive oriented clusters (Hospers and Beugelsdijk, 2002).

Fourth, some policymakers and practitioners could create jobs for themselves as a regional service class emerged. This group ensured its own continued existence by promoting and reproducing clusters, creating new development agencies and related new regionalist style policies (see Lovering, 1999; 2001). In part, this was spurred by new approaches to funding regional development, particularly from the European Union. Projects focusing on innovation and networking, and organized with an emphasis on partnership working and policymakers acting as facilitators of growth, emerged as the model for the regional development industry (Lagendijk and Cornford, 2000).

Fifth, as well as political factors Porter sets out ideas which are generic and flexible enough to be relevant to a range of contexts, and thus are attractive to policymakers on a practical level. His definition of a cluster is undoubtedly broad and thus policymakers and

¹ Although it has been argued that some forms of cluster policy differ little from industrial policy approaches (Hospers, Sautet and Desrochers, 2008).

practitioners can use its “all-embracing universalistic notion” of firms working together doing similar things in the same place to form policy responses to changing economic conditions (Paniccia, 2006: 90). This is aided on a practical level clusters came with a ready-made methodological tool box. The methods, case studies and exemplars contained in Porter’s books offered provided apparent ‘off-the-peg’ examples of how this could be done. *The Competitive Advantage of Nations* quickly became a best seller and must read handbook for regional policy makers. As clusters became more popular, assisted by their legitimization as the OECD (1996; 1999) and the European Union heralded their success, consultants specialising in cluster mapping began to emerge. This was led by Porter’s own Monitor Group, launched in the 1980s by Harvard entrepreneurs. Monitor was instrumental in mobilising clusters in a series of contexts around the world, enrolling ever more policy makers into a growing network of cluster converts. By the early 2000s consultants, or what Martin and Sunley (2003: 25) term flying cluster-makers, were extending the reach of clusters around the world.

This constellation of factors and related actors combined and (trans)formed into an ever growing actor-network of cluster-related policy frameworks, growth objectives, ways of fostering development, organisations, consultancies and knowledges that blackboxed cluster theory as the approach for regional economic development.

4. Cluster Policy in the UK

With policymakers convinced of cluster theory’s usefulness, how has it been mobilised in policy? Against the backdrop outlined in the previous section, this section charts the rise of cluster policy in the UK context, tracking its journey through various reports and strategies as national and regional government actors were enrolled through the 1990s and 2000s.

While in opposition in the 1990s New Labour made regional competitiveness a key part of their wider economic development strategy. In 1995, deputy party leader and key proponent of regional policy, John Prescott asked the Regional Policy Commission to consult on the future of regional governance. They reported their findings a year later in *Renewing the Regions* (1996). Amongst many recommendations, the Commission argued the future of UK economy depended on the competitiveness of the country's regions and backed the need for Regional Development Agencies (RDA) to pursue this goal. Key figures developing New Labour's economic policy, particularly Ed Balls, believed the English regions possessed latent economic potential that once mobilized would drive growth and RDAs could achieve this (Tomaney, 2002). A year after they came to power their vision for the future of the UK economy was published in the white paper, *Our Competitive Future: Building the Knowledge-driven Economy* (DTI, 1998). This reiterated the findings of the Regional Policy Commission on regional competitiveness, and outlined the role of clusters in achieving regional development invoking examples of the City of London, Italian shoemaking and Silicon Valley. Its references include Porter's *On Competition* and his highly cited *Harvard Business Review* paper (Porter, 1998). In 1999 the Department for Trade and Industry (DTI) commissioned a nationwide cluster mapping exercise, the RDAs became operational and the DTI established the Cluster Policy Steering Group to bring together ministers with experts from academia and the public and private sectors.

One of the outcomes of the Cluster Policy Steering Group's work was the Department of the Environment, Transport and the Regions' (DETR) *Planning for Clusters* white paper (2000). This document outlined the need for a more responsive land-use and infrastructure planning system to meet the specific needs of growing clusters. A year later the DTI published its *Enterprise, Skills and Innovation* white paper (DTI, 2001a), which called for all regions to build on indigenous assets to create competitive advantage, and outlined central government resources to support this approach – £50m was made available to RDAs over

two years through the Innovative Clusters Fund. Clusters, then, had become the foundation for regional economic development within the UK enshrined in legislation, with the RDAs tasked to deliver cluster policy (Tomaney, 2002). Three of Whitehall's most important departments – the Treasury, Department for Trade and Industry, and Department of the Environment, Transport and the Regions – were all enrolled in a network of actors adopting clusters theory. Important Departments such as these furthered the legitimization of clusters, strengthening the concept's power and making Porter's work an obligatory passage point for regional development in the UK. Enrolment of these Departments into a clusters actor-network extended it and aided the alignment of a series of other actors, such as RDAs and local authorities who were required by central government to include cluster development strategy in their regional economic strategies. This requirement included listing potential clusters, to map existing clusters and implement cluster development strategies through public-private partnerships (Peck and McGuinness, 2003), which in turn extended the actor-network again by commissioning cluster mapping programmes from consultants and academics.

In 2001 the DTI published *Opportunity for All In a World of Change* a white paper outlining the contribution that universities – as generators of knowledge and technological advancement – should make to clusters. This was backed by £80m in the form of the Higher Education Innovation Fund, to be used by universities to establish centres of innovation and aid knowledge transfer to local clusters. Again in 2001, the DTI unveiled the results of the UK-wide cluster mapping exercise in *Business Clusters in the UK - A First Assessment* (DTI, 2001b), which identified 154 clusters in the UK. These ranged in size and significance and included an assortment of activities including whiskey making, financial services, aerospace, antiques dealing and toiletries production. Their concentration also varied greatly. Every region of the UK outside of London could lay claim to an agriculture and food processing cluster, whereas other activities were unique to particular places. For example, nuclear fuel processing in

North West England, motor sport in South East England, music production in London, and opto-electronics in Wales, amongst others. The DTI mapping document was welcomed by academics and policymakers alike for its rigour and methodology (Nachum and Keeble, 2003; Benneworth and Henry, 2004). This document proved incredibly useful and by listing clusters an RDA should focus on became a new obligatory passage point for policy makers funding cluster mapping exercises, writing cluster strategies and selling their region's economy.

In 2002 the Economic and Social Research Council, together with the DTI, funded a further assessment of the UK's clusters, this time led by Michael Porter, which, unsurprisingly, recommended a sustained programme of cluster development (Porter and Ketels, 2003). To aid this endeavor the DTI and English RDAs published *A Practical Guide to Cluster Development* (Ecotec Research and Consulting, 2003). This document reiterated the Government's commitment to cluster-led regional economic development, and provided strategic, methodological and practical tools for cluster policy, reproducing the arguments made by Porter and the growing number of cluster theorists in academia and policy circles. It is revealing to contrast the position of Porter relative to policymakers in the early 2000s compared to the start of the previous decade. In the 1990s Porter had to transform his theories to align them with policymakers, but by the 2000s it is policymakers aligning themselves with Porter. He is placed at the centre of the network as a key intermediary and powerful actor actively disciplining those around him.

Within six years of coming to power, and nine years after the Regional Policy Commission reported, New Labour had made increased productivity and competitiveness the key goal for economic development, and clusters the *de facto* tool to achieve this. Millions of pounds had been spent on their development, and numerous government agencies, along with the university sector, were involved in delivering and monitoring cluster policy. The interests of

national and regional policy makers has been aligned with Porter, Monitor and other cluster-actors to combine a set of knowledges, actions and texts about regional growth. These actors had constructed common definitions of clusters and their operation, and translated their collective objectives into the pursuit of a particular kind of regional development through clusters. Cluster theory had been black boxed in the UK policy arena as this network 'acted as one' in the mobilization of clusters in policy.

5. Academics and Clusters

The story outlined in the previous section is only part of the journey clusters have taken through the 1990s and 2000s. To fully understand clusters one also needs to consider their relationship with academia because, in contrast to policy makers, academics have not been so easily aligned.

Academics have been concerned with territorial production complexes such as clusters for decades. In the 1980s there was a resurgence of interest in the region as a scale of economic organisation and a key concept for policy intervention (Storper, 1995; MacKinnon et al., 2002). Libraries of research on variously termed agglomerations, industrial districts, regional innovation systems, learning regions and clusters, amongst others, emerged as academics sought to explain how regionally embedded networks of firms operated. Unlike Porter's theory, however, policymakers ignored much of this work as it was not aimed at them, nor was it written in accessible terms. Achieving policy relevance has long been difficult to economic geographers (Pollard et al., 2000; Martin, 2001; Dorling and Shaw, 2002; Ward, 2005), and the attention Porter's clusters got from policymakers prompted many to examine and mobilise his concepts in academic analyses. In addition, during the 1990s and 2000s universities were under pressure to attract income from sources beyond their traditional funding streams and be more entrepreneurial. Undertaking consultancy-like work was an

attractive way to do this and many academics met the demand from policymakers for cluster mapping studies. Through academic and consultancy research, then, economic geographers and those in cognate disciplines began to be enrolled into the actor-network of clusters. The power of the cluster brand so successful in selling the concept to policymakers also had an impact on academic work on territorial production complexes as addressing Porterian clusters became an obligatory passage point for work on regional development, not because of its usefulness, but their success and place at the centre of economic policy meant it could not be ignored. Crucially, though, the concept had heterogeneous relationships with, and meaning for different actors. To put it crudely, policymakers were far more convinced than academics of their value². That is not to say all policymakers were convinced, or that all academics were not, however.

The critical approach of academics threatened to destabilize the place of clusters in regional development as they opened up the black box and began to critique Porter's work. An area of particular contention was how to define clusters. The generalisable nature of Porter's original definition which made clusters so attractive to policymakers, was problematic for academics. For example, on scale Porter claims "[t]he geographic scope of a cluster can range from a single city or state to a country or even a network of neighboring countries" (1998b: 199). With this in mind, Martin and Sunley (2003) pose the question: just how important is geographical proximity in clusters? Further, Porter maintains competition is key to the success of clusters. But again, Martin and Sunley (2003: 15) point out that the competitive strategies that Porter's concept of competition is built on – differentiation, cost leadership and focus – are largely generic and have been criticised by business, industrial and management studies scholars for being superficial, hard to measure, unspecific, not independent or universal as Porter claimed.

² That is not to say all policymakers were convinced, or that all academics were not.

Unpacking the definition of clusters was made more complex as academics applied it in various settings, and adapted, transformed, and redefined what constituted a cluster. This is the way academics work, of course, refining concepts through their use and it led to an array of definitions (see Martin and Sunley, 2003; Belussi, 2006). A great deal of this work was robust and useful (see, for example, Henry, Pinch and Russell 1996; Henry and Pinch, 2000; Bassett, Griffiths and Smith, 2002; Nachum and Keeble, 2003), but too frequently cluster mapping failed to properly identify and understand the links, spillovers and flows within an industry and outside a region (Bahelt, Malmberg and Maskell, 2004; Dunford and Greco, 2006; Saxenian, 2006). On the one hand Porter's original theory is generalisable, which makes it useful to policymakers as a starting point to understand the linkages between firms in a locale – aided by the competitive diamond and supply chain analysis framework. On the other hand, this generalisability means the theory is conceptually elastic. This has provided the opportunity for academics and policymakers to stretch it beyond normal limits, often combining it with other explanations of agglomeration (Benneworth and Henry, 2004; Vorley, 2008). A tension can be identified here for academics trying to balance academic rigour and conceptual development, demands of clients with potentially different understandings of clusters, and the drive for relevance outside the academy. In ANT terms these motivations are not mutually exclusive and academics can have multiple roles as critics and legitimisers of Porterian cluster theory.

The search for a coherent definition was unsuccessful, and by the mid-2000s the term 'cluster' was being used to describe used to “refer to a localized industry configuration, such as a local or regional concentration of industrial firms, and their support infrastructure which are closely interrelated through traded and untraded interdependencies” (Bahelt, 2005: 205). Porter's cluster concept was now so big it had engulfed decades of academic work. Such 'sloppy thinking', however, led academics to describe the cluster concept as 'fuzzy' (Markusen, 1999), 'chaotic' (Martin and Sunley, 2003) and a 'conceptual headache'

(Malmberg and Power, 2006). These critiques have focused on methodological issues, attacking the use of ungeneralisable case studies and hard to measure ‘soft’ features (Markusen, 1999), a lack of clarity in definitions (Martin and Sunley, 2003), under explanation of key characteristics (Nooteboom, 2006), ambiguous use of labels (Belussi, 2006), and confusing application of previously developed concepts (Malmberg and Power, 2006). As Taylor puts it, “the cluster model has been built through the accretion of layer upon layer of contingency generated through the interpretation, re-interpretation, conjecture and extrapolation of stylised facts buttressed by weak empiricism” (Taylor, 2010: 276). So while academics were enrolled into a clusters actor-network, they were done so reluctantly and alignment was difficult meaning the network became destabilized resulting, as the next section illustrates, in the decline of clusters as a policy tool.

6. Where is cluster policy now?

Cluster had their peak for policymakers in the UK in the mid-2000s. In 2004 New Labour’s regional strategy took a major hit as the people of the North East of England rejected proposals for an elected regional assembly that would have seen more power devolved to the regional level. Plans for further referenda in other regions were abandoned. In the years that followed, the scale at which regional development policy was focused shifted, moving from regions to city-regions as an accountable scale of intervention was sought. This period saw a confusing array of approaches to foster economic competitiveness emerge, operating at different and often conflicting scales (see Valler and Carpenter, 2010). Clusters continued to feature, albeit less dominantly. In the final Main Economics Paper published by the Department for Business Innovation and Skills³ (BIS) under New Labour – released two months before the general election – *Learning from Some of Britain’s Successful Sector: an historical*

³ Formerly Department for Business, Enterprise and Regulatory Reform, the successor to the DTI.

analysis of the role of government (2010) celebrates cluster policy as key to the development of competitiveness. In contrast to the 154 identified nine years earlier, only five clusters are highlighted, albeit in great detail.

In others part of government, HM Treasury for example, and especially since the Conservative-Liberal Democrat coalition came to power the influence of clusters in economic policy has waned. Or rather explicit reference to clusters and, particularly, to Porter has declined. Clusters still feature, but as part of a range of policy interventions for local, regional and national growth. This is in part due to criticism of Porter's approach, an increasing evidence base of poorly executed cluster policy, the rise in popularity of other approaches which revealed the growing significance of cities, and the need to combine productivity focused interventions with housing, planning and transport policy⁴. But mainly due to widespread acceptance of the advantages of firm proximity and specialization in general, outwith of Porter's theory (Spencer et al., 2010). This appreciation is part of a wider trend seen in the work of, and engagement from policymakers with economists concerned with so-called New Economic Geography (NEG). The blackbox of clusters has been opened and exposed to a critical light that destabilized the actor-network. One could conceive this as clusters being absorbed into a new network of knowledges, concepts and tools for regional development. Indeed, the enrolment of NEG into the policy field, and economic geographers' reaction to it bares striking similarity to the journey outlined above.

7. Conclusion

By way of conclusion let us address the use of ANT as an explanatory tool for telling stories such as these. First, this article has told a necessarily simplified, partial, and in places crude,

⁴ See the Review of Sub-national Economic Development and Regeneration (HM Treasury, 2007).

story of clusters through policy and academia. A pure ANT approach means “following networks all the way along their length” (Murdoch, 1997: 332), but the number of actors connected to the cluster concept is huge. As highlighted in the introduction there have been at least 1600 academic articles mentioning clusters from 1990 until the time of writing (Malmberg and Maskell, 2002; Martin and Sunley’s, 2003; Web of Knowledge, 2011). As these numbers indicate tracing such a network completely is an impossible task. Moreover, dealing with the complexity of ideas and actions of actors would take a lifetime and always be only a partial explanation. But by taking a relational or associational perspective, even a partial one, light can be shed on the role of myriad actors in making a concept, if not successful, then at least popular (Lagendijk, 2003). This has been done successfully by scholars positing a multi-perspectival approach to understanding the black box of clusters (Benneworth and Henry, 2004).

Importantly, there is a need to reject the idea “there is no need to step outside the networks for all the qualities of spatial construction and configuration of interest will be found therein” (Murdoch, 1997: 332). A fuller, more useful account can only be achieved by examining the organisation fields in and through which actor-networks gain meaning (Clegg, 1997; Lagendijk and Cornford, 2000). In this case I have attempted to do this by examining the wider UK policy and academic arenas, and their transformations. Combining Clegg’s work on organisation fields with ANT also helps understand the multiple roles of different actors, their heterogeneous relationships and motivations within and outwith actor-networks. Academics acting as consultants, for example, helped legitimise and reproduce clusters, while colleagues heavily critiqued the concept because of pressures to be entrepreneurial and engage beyond the academy. Similarly, not all policymakers were convinced of clusters’ efficacy, but were bound by central government to foster them. The nature of the clusters actor-network meant it gained size and strength as clusters were simultaneously promoted and critiqued. The actor-network became destabilised, however,

as criticism outweighed legitimization. ANT and organisational fields can thus be useful in tracing the evolution of ideas through and between academic and policy arenas in a series of national and international contexts. One needs to be careful, however, to move beyond the network to understand the contexts from which networks gain meaning.

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