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EXAMINING 'CORE-PERIPHERY' RELATIONSHIPS IN A GLOBAL CITY-REGION: THE CASE OF LONDON AND SOUTH EAST ENGLAND

This paper examines the interdependencies between the London 'core' and the South East England 'Mega-City Region'. London's description as a monocentric city in the European Spatial Development Perspective, belies functional connectivities that make a wide area to the west of the capital a web of dense inter-urban linkages. How are advanced business services creating a functional geography that differs from binary territorial representations? What are the implications for policy and theorisation? This paper addresses these questions with specific reference to South East England and the 'core-periphery' thesis.

Mega-City Region	Polycentricity-monocentricity	Core-periphery
Advanced Producer Services	Binary	Functional specialisation

Examiner le rapport 'centre-périphérie' dans une cité-région mondiale:
étude de cas de Londres et de l'Angleterre du Sud-Est.

Cet article cherche à examiner les interdépendances entre le 'centre', à savoir Londres, et la méga-cité-région de l'Angleterre du Sud-Est. Dans le European Spatial Development Perspective (perspective sur le développement géographique européen) la description de Londres comme ville mono-centrique dissimule les connectivités fonctionnelles qui font d'une grande zone à l'ouest de la capitale un grand réseau de liens interurbains. Comment les services aux entreprises haut de gamme peuvent-ils créer une géographie fonctionnelle qui se distingue des représentations territoriales binaires? Quelles sont les implications quant à la politique et à la théorisation? Cet article cherche à aborder ces questions-là spécifiquement en ce qui concerne l'Angleterre du Sud-Est et la thèse 'centre-périphérie'.

Méga-cité-région / Polycentrisme-monocentrisme / Centre-périphérie / Services aux entreprises haut de gamme / Binaire / Spécialisation fonctionnelle

Classement JEL: O18; O20; R11; R58

Untersuchung der 'Kern-Peripherie'-Beziehungen in einer globalen Stadtreion: der Fall
von London und Südostengland

KATHRYN PAIN

In diesem Beitrag werden die Interdependenzen zwischen dem 'Kern' London und
der 'Megastadtregion' Südostengland untersucht. Aus der europäischen
Raumentwicklungsperspektive wird London als monozentrische Stadt beschrieben,
wobei aber die funktionalen Verknüpfungen ignoriert werden, die ein großes Gebiet
westlich der Hauptstadt in ein Netz enger interurbaner Verknüpfungen verwandeln.
Wie schaffen gehobene Wirtschaftsdienstleistungen eine funktionale Geografie, die
sich von den binären territorialen Repräsentationen unterscheidet? Welche
Auswirkungen hat dies auf Politik und Theoretisierung? Diese Fragen werden in
diesem Aufsatz unter besonderer Berücksichtigung von Südostengland und der
'Kern-Peripherie'-These behandelt.

Megastadtregion
Polyzentrität-Monozentrität
Kern-Peripherie
Wirtschaftsdienstleistungen
Binär
Funktionale Spezialisierung

JEL codes: O18; O20; R11; R58

Análisis de las relaciones 'centro-periferia' en una región-ciudad global: el caso de Londres y el sureste de
Inglaterra
KATHRYN PAIN

En este artículo examino las interdependencias entre el 'núcleo' de Londres y la
'región mega-ciudad' al sureste de Inglaterra. En la descripción de Londres como
ciudad monocéntrica en la Perspectiva de Desarrollo Espacial Europeo se ignoran
las conectividades funcionales que convierten una amplia zona hacia el oeste de la
capital en una red de densos enlaces interurbanos. ¿Cómo crean los servicios
comerciales avanzados una geografía funcional que difiere de las representaciones

territoriales binarias? ¿Cuáles son las repercusiones en la política y la teorización?

En este artículo abordo estas cuestiones con referencia específica al sureste de
Inglaterra y la tesis de ‘centro-periferia’.

Región mega-ciudad
Policentralidad-monocentralidad
Centro-periferia
Servicios avanzados de productores
Binario
Especialización funcional

JEL codes: O18; O20; R11; R58

INTRODUCTION

The overarching hypothesis of the ‘POLYNET’ research has been that contemporary processes of globalisation are giving rise to a new urban phenomenon in North West Europe - the global ‘Mega-City Region’ (MCR) (INTERREG IIIB North-West Europe, ‘POLYNET: Sustainable Management of European Polycentric Mega-City Regions’, HALL and PAIN, 2006). This is an increasingly *functionally interconnected* space that is distinct from ‘mega-city’ regions in Pacific Asia whose urban networks support manufacturing activity. Like Scott’s (2001a) ‘global city-region’, the North West Europe MCR is located around cities of global status and has multi-scale linkages associated with its post-industrial economic functions. But, in POLYNET, this phenomenon is specifically defined by high-value, *knowledge-based functions* in ‘Advanced Producer Services’ (APS), that have a key role inter-linking Castells’ informational ‘space of flows’ with the global city ‘space of places’ (CASTELLS, 2000). The study addressed a

key issue for European policy - whether this emergent urban space is becoming more *polycentric* and, if so, more sustainable?

While two of the eight regions included in the study - The Randstad, Netherlands and the RhineRuhr, Germany - are self-evidently *morphologically* polycentric, London and Paris are regarded as *monocentric* cities in European spatial strategy that provides the framework for Member State policy (*European Spatial Development Perspective: ESDP*, EUROPEAN COMMISSION, 1999; *Spatial Vision for the North Western Metropolitan Area*, NWMA SPATIAL VISION GROUP, 2000). But the findings for South East England challenge this perspective and cast doubt on the relevance of polycentricity as a policy tool in regional planning, hence there is a particular need to re-examine the South East England case and its implications for spatial theorisation and policy.

The transnational research results are reported in full in Hall and Pain (2006). They reveal that morphological polycentricity, which describes the size and distribution of towns and cities across a region, has no direct bearing on *functional* polycentricity associated with knowledge-intensive business services, regarded as crucial for European economic growth in the Lisbon Strategy (EUROPEAN COUNCIL, 2000). Furthermore, while the concept of the ‘Polycentric Urban Region’ (PUR) has been associated with environmentally sustainable and balanced regional development in spatial planning policy (DIELEMAN and FALUDI, 1998; KLOOSTERMAN and MUSTERD, 2001), the POLYNET results show that regional polycentrism generates cross-cutting travel by car that actually compromises environmental priorities. Nor is balanced functional

development found in any of the regions studied regardless of their urban morphology. All eight regions have an uneven distribution of knowledge-based economic activities and a large concentration of *global* firms and functions in just one 'First City'. Ironically, although South East England appears relatively monocentric in terms of the size and distribution of its towns and cities, it proves the most functionally polycentric region in the study.

Taking up the call of Pain and Hall in the introduction to this special issue, the purpose of this paper is to explore the interactions and flows which construct the critical spatial relationships in MCR processes by focusing specifically on the detailed qualitative evidence from South East England interviews. The central question to be addressed is whether present European spatial guidance provides a relevant basis for MCR policy and, if not, what new theoretical insights are needed? The opening two sections of the paper problematise these two key focii - policy and theorisation. In the first section, the main precepts of European spatial policy and the theoretical premises that underpin these are outlined. A mismatch between the major changes defining MCR spatial relations in globalisation and the use of binary spatial constructions in policy - specifically, the 'core-periphery' metaphor and the concept of polycentrism - is identified. In the second section, the development of the core-periphery thesis, and its potential limitations, in Krugman's highly influential (1991a, b) 'New Economic Geography' model are outlined briefly. In the third section, the detailed qualitative evidence from interviews with business actors in South East England is then turned to in order to shed light on the way in which MCR processes work in practice. The final concluding section considers the

overarching implications for policy and theorisation.

**THE EUROPEAN SPATIAL POLICY FRAMEWORK:
THE PERVASIVE INFLUENCE OF BINARY SPATIAL CONSTRUCTIONS**

The central ESDP concept, polycentricity, has been applied at three European policy scales – *intra-urban*, *intra-regional* and *inter-regional* (EUROPEAN COMMISSION, 1999) – it is the latter two that are the main focus of the POLYNET study and this paper.

At an *intra-regional scale*, urban polycentricity has been seen as a form of ‘decentralised concentration’ in which activities are clustered across a number of towns and cities of similar size as opposed to being concentrated in just one centre, as exemplified by the POLYNET Randstad and RhineRuhr regions. As already discussed, this urban development form is seen as contributing to balanced and sustainable regional development. At a Europe-wide *inter-regional* scale, polycentrism is seen as promoting a more balanced and sustainable pattern of development between a European ‘core’ of dynamic economic development – referred to as the ‘Pentagon’ and bounded by the cities of London, Paris, Hamburg, Munich and Milan – and an under-developed ‘periphery’, recently extended as a consequence of European Union (EU) enlargement. ‘Global cities’ London and Paris within the Pentagon, are regarded as urban ‘cores’ while the term ‘periphery’ is used to refer both to declining primary sector urban economies and under-developed rural agricultural areas. Polycentrism is thus seen in the ESDP, as a prescription for uneven economic development at a scale of inter-regional *and* inter-city

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3 *core-periphery* spatial relations.
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8 But, while the vision for the Lisbon Strategy which set out in March 2000 to make
9 Europe the most competitive economy in the world by the year 2010 (EUROPEAN
10 COUNCIL, 2000), drew on Castells' (1996) conceptualisation of an informational
11 economy that is increasingly dominated by the *space of flows*, the POLYNET results on
12 MCR development, summarised earlier, suggest that the ESDP has remained rooted in a
13 traditional territorial understanding of spatial relations synonymous with Castells' *space*
14 *of places*. (see HALBERT *et al.*, 2006, p. 207). Four incongruences can be seen to follow
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29 First, a distinction needs to be drawn in spatial policy between urban morphology and
30 function to address Lisbon objectives for *economically sustainable development*. Second,
31 tensions between regional polycentricity (both morphological and functional) and
32 *environmental sustainability* - a key Gothenburg Agenda priority (SDS: *Sustainable*
33 *Development Strategy*, EUROPEAN COMMISSION, 2001) must be recognised. Third,
34 the failure of policy promoting regional polycentricity to address problems of *social*
35 *inequity* - a feature of uneven development - must be addressed (PAIN, 2006, p.197, p.
36 203; HALBERT *et al.*, 2006, p. 211). Lastly, a basic misfit between the *relational* nature
37 of MCR processes and the *scale-dependence* of the polycentricity concept requires urgent
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It is contended here that it is the use of *binary spatial constructions* to inform the ESDP that lies at the heart of these policy disjunctions. The territorial dualism implicit in the core-periphery metaphor is reflected in the concept of polycentricism and its opposite *mono-centrism*. This theorisation relates to Castells’ space of places. It fails to reflect the multi-scale interdependencies between economic, environmental and social processes associated with MCR emergence. Furthermore, it implies oppositional territorial relations which, as will be argued later in this paper, constitute an inappropriate basis for effective cross-border co-operation. Nevertheless, the development of core-periphery theory in Krugman’s New Economic Geography model (KRUGMAN, 1991a, b, 1998a, b; VENABLES, 1996; FUJITA *et al.*, 1999) continues to be highly influential in European spatial thinking.

Krugman himself admits ‘how difficult it is to go from suggestive small models to empirically based models that can be used to evaluate specific policies’ (KRUGMAN, 1998a, p. 27). Yet his work has informed major research and investment programmes (DG Regio ‘INTERREG’, ‘ESPON’: European Spatial Observatory Network), for example, Sixth Framework ‘TRANSFORUM’ modelling for future European transport policy (SESSA, 2006) and ODPM commissioned research developing an analytical framework to measure UK economic linkages (COMBES *et al.*, 2006). Given the specific focus of this paper on the interrelationship between policy and theorisation, Krugman’s model and its potential limitations are next outlined briefly.

THE CORE-PERIPHERY MODEL – AN ADEQUATE BASIS FOR POLICY?

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6 The limitations of Krugman's model have been widely debated both from economics and
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8 geography oriented perspectives (for example, Baldwin *et al.*, 2003; Martin, 1999; 2003).
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10 Its distinction between 'core' and 'periphery' (KRUGMAN, 1991a) replicates Von
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12 Thunen's (1826) use of the terms - a core representing cities and the periphery
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14 representing agricultural areas of decline (HALL, 1996). But whereas core-periphery
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16 theory has subsequently loosely informed the field of development studies - for example,
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18 distinctions between 'North-South', and 'developed-underdeveloped' world regions -
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20 Krugman has argued for a return to formal modelling to explain spatial processes as the
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22 outcome of rational economic behaviour under conditions of imperfect competition in
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24 contemporary economic geography (KRUGMAN, 1998a, p. 7).
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32 Krugman has drawn on neo-classical theory – for example Myrdal (1957) and Friedmann
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34 (1966) on the widening or narrowing core-periphery gaps in urban systems and Marshall
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36 (1949) and Pred (1966, 1977) on the reasons for industrial clustering – in attempting to
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38 model 'new economy' interactions between concentration and dispersion that reflect the
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40 locational decisions of present-day economic actors. He sees economies of scale, falling
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42 transport costs and 'footloose' production, as generating 'centripetal' clustering forces
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44 that reduce instability and risk for both firms and labour, particularly important for
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46 financial services (KRUGMAN, 1998b). Contradicting theories of the 'death of distance',
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48 associated with advances in information and communication technology (ICT) (for
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50 example CAIRNCROSS, 1997), his model seeks to explain why, instead of contributing
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52 to centrifugal forces and dispersion to distant low-wage locations, new economy activity
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increases concentration and regional divergence. In spite of expressing caution about the use of modelling as a basis for policy, Krugman suggests that regional ‘boosterism’ may help to trigger self-sustaining growth in under-developed areas (and, in consequence, decline in areas of existing agglomeration), contributing to more balanced regional economic development.

But, while the model may appear to *describe* some features of agglomeration identified in POLYNET MCR First Cities, its *explanatory power* is likely to be strictly limited. Unlike Marshall’s concept of ‘industrial districts’ which acknowledges the importance of ‘local industrial atmosphere’, ‘shared knowledge’, ‘common business practices’ and ‘social and institutional’ environment in clustering (MARTIN, 2003, p. 9), Krugman’s model is highly abstract. It has a restricted focus on *measurable* locational factors and does not take into account the relationships and knowledge flows between people (externalities) that have proved challenging to measure in POLYNET quantitative analysis. Furthermore the model is purported to be generally applicable at different scales but, as seen from the POLYNET findings on polycentricity, MCR processes differ amongst regions, reflecting national differences, specificities and local histories.

In contrast, alternative recent economic geography approaches emphasise relational, social and contextual reasons for agglomeration (for example PRYKE, 1991; AMIN and THRIFT, 1992, 1994; THRIFT and LEYSHON, 1994; PRYKE and LEE, 1995; MARKUSEN, 1996; SCOTT, 1998; ALLEN, 2000). These include the requirement for tacit transfer of knowledge that cannot be codified or measured and for diverse ‘untraded

interdependencies' (STORPER, 1995). Institutional, cultural and so-called 'evolutionary' perspectives (BOSCHMA and FRENKEN, 2005) variously acknowledge the influence of historical 'path dependency' as a cause of 'lock-in' (*Ibid.*, 2005, p. 8; PORTEOUS, 1999), the 'stickyness' of places in 'slippery space' (MARKUSEN, 1996) and the importance of more *fluid* and *scale-dependent* relational network flows (MARTIN, 2003 p. 21). A key conclusion from the (2005) NWMA 'Spatial Vision' review is that 'the economic and quality of life performance of regions is not fully explained by the core-periphery model' (DUHR and NADIN, 2005, p. 3).

The purpose of the POLYNET interview study was to supplement 'hard' data from quantitative studies with qualitative evidence on just such interactions and relationships that proved impossible to measure. Thus the South East England interviews are examined here more fully than has been possible in previous publications in order to shed light on the ways in which MCRs work *in practice*.

INVESTIGATING A MULTI-DIMENSIONAL SPACE

In contrast to ESDP theorisation, the complementary POLYNET quantitative and qualitative studies of MCR 'connectivities' have drawn on a network conceptualisation of inter-city relations in contemporary globalisation. Specifically, Sassen and Castells' conceptualisations of the 'global city' as a location for advanced business service concentration (SASSEN, 2000, 2001), yet 'not a place, but a process ... by which centres of production and consumption of advanced services ... are connected in a global city

network' (CASTELLS, 2000, p. 386). For Castells, in the new 'informational society', the space of flows increasingly defines the space of places (CASTELLS, 2000, p. 386).

Two studies preceding the POLYNET research, provided evidence of complex interdependencies between European global cities London and Frankfurt (BEAVERSTOCK *et al.*, 2001) and also between central London APS clustering and a wide area of South East England (TAYLOR *et al.*, 2003; PAIN, 2006), supporting Hall's earlier thesis of an expanding 'Greater South East' of advanced services, skills and international links (HALL, 1989, p. 3, *passim.*) and Scott's more recent theorisation of the global city-region as 'a nexus of global-urban relations' (SCOTT, 2001a, p. xiv). The POLYNET interviews were therefore designed to interrogate the flows and interactions taking place at multiple scales leading to MCR emergence. It was important to examine the extent to which potential inter-urban functional linkages, mapped in quantitative study (Taylor *et al.*, 2006 and in this issue), were substantiated, or not, by actual organisational working practises. The inside knowledge and experience of senior business actors who 'work the networks' was therefore vitally important.

148 in-depth face-to-face interviews (120 APS firms and 28 business, economic development and professional institutions) of 45 minutes to 1.5 hours in duration was analysed for South East England, including 39 taped interviews from the preceding central London study. The sample of firms from eight APS sectors was drawn from an extensive data-base of APS office locations and functions, compiled using web-based data, business directories and information supplied by industry and policy experts,

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3 focusing specifically on knowledge-intensive, business to business services in network
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5 organisations that are regional, national, European or global in scope. The eight sectors
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7 were broadly defined to include a wide variety of differentiated and multi-disciplinary
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9 knowledge-intensive services using the EUROSTAT 'NACE' classification of economic
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11 activities. Interviews across the MCR included: banking/finance (30 firms), insurance
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13 (nine firms), accountancy (19 firms), law (13 firms), management consulting/IT (12
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15 firms), advertising (nine firms), logistics (six firms) and design/property services (22
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17 firms).
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24 81 firms were interviewed in urban centres outside London: Reading (nine), Cambridge
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26 (19), Southampton (12), Crawley-Gatwick (seven), Bournemouth-Poole (nine), St Albans
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28 (five), Swindon (10), Milton Keynes (10). Sampling was designed to reflect as closely as
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30 possible, the representation of sectors and network scopes in each location. An initial
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32 letter and project information leaflet was sent to more than 300 named individuals in
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34 firms on the database, followed by a phone call and/or e-mail. All interviews were tape
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36 recorded, transcribed and coded and the transcripts entered into an 'Access' database for
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38 detailed analysis. The results illustrate the dynamic nature and complexity of South East
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40 England MCR spatial relations, and the limitations of mathematical modelling as a basis
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42 for regional policy.
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51 **MEGA-CITY REGION PROCESSES: GLOBALLY**
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53 **CONSTITUTED THROUGH NETWORKS**
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The findings reveal the intense interrelationships and flows between London and the other POLYNET First Cities and the unique role they share in the global city network. The main points briefly discussed here illustrate the importance of London’s European and global network connections for MCR relations.

Of key importance is the finding that the eight MCRs are integrally connected by intense virtual and physical flows between their First City ‘global’ APS agglomerations - firms, functions, transnational skilled labour, specialisms and business practices. But London has a singular role among these cities and is identified, by UK and foreign firms alike, as the European location for the most specialised international skills and business knowledge and the main source of innovation and key contacts. This gives it a knowledge production or ‘kitchen’ function for high complexity, high-value *global wholesale* activities, defined as advanced business services provided *between* service providers. Non-standardised, non-commoditised wholesale activities rely on very close proximity for face-to-face contact (associated with concentration and centrality (see also TAYLOR *et al.*, 2003, PAIN, 2005). The key driver behind London’s special role is repeatedly said to be global markets competition,

Global competition is the driver, you are in a more stimulating environment. You get a lot of stimuli here in the sense that you are meeting people, you are talking to people, you are constantly trying to be competitive, you are constantly trying to have the edge on other people, so you have to be in that kind of environment. (FS 1)

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6 The attractiveness of central London as an APS business cluster, and its specific
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8 clustering geography, has already been documented in detail in TAYLOR *et al.*, 2003.
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10 Having a London address, language, time zones and regulatory environment, are all
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12 important but London's tradition of 'openness' to flows of transnational skilled labour
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14 and foreign firms, is seen by senior business actors as critical to specialised production
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16 functions in international business networks. A banking interviewee comments,
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22 The process has been for wholesale traders, increasingly right across Europe, to
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24 come to London and deal from London on a remote basis. That has been the
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26 process for trading. (B 1)
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32 Close proximity is essential to allow mutual servicing interrelationships between firms to
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34 take place and this is a major contributor to knowledge exchange and innovation. The
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36 complexity of these service-supplier relationships in APS wholesale markets, makes it
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38 hard to distinguish between tacit and formal knowledge exchanges. In addition, working
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40 in multidisciplinary client teams, informal exchanges between global specialists in
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42 different firms, consolidation and organisational restructuring and 'labour churn', all
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44 contribute to intensive knowledge transfer or 'spillovers' not prioritised in Krugman's
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46 model. And 'soft', less tangible aspects of global city life and work are crucial in
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48 attracting young talent and senior APS executives to London. A financial services view is
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50 typical:
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3 London is becoming a much more cosmopolitan city ... some of the Sunday
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5 papers [are] recently putting London as the best city in the Western world for
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7 everything ... good cultural mix, the whole environment, good work prospects as
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9 well as the cultural educational side. (FS 1)
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15 The locational drivers for APS firms and labour are distinctive, illustrating the dangers of
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17 generalised economic modelling: the need for concentration and close proximity of
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19 global skills and specialisms for knowledge transfer and production to compete in global
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21 markets; complex supply-demand relationships between firms that are only made
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23 possible by agglomeration; and the importance of London's global constitution.
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29 In addition, functional specialisation between London and other European cities
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31 illustrates important differences between their agglomeration characteristics – size,
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33 sectors, intensity and quality of flows - and also the complementarities between them.
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35 Global wholesale functions require agglomeration in just *one* global city location
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37 (London) for the European region so that scarce transnational skills and specialisms can
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39 be densely clustered in one place. But other high-value, knowledge-based global
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41 functions require dispersal across a European 'network of cities' as illustrated again in
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43 banking:
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50 For salespeople in the wholesale business, some of them ... found actually
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52 [dealing from London] was not ideal. It was best for them to have a local
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54 presence and local knowledge. (B 1)
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6 But the important role played by functional specialisation in constructing inter-regional
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8 complementarities between cities, cannot be appreciated by means of quantitative
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10 investigation alone, illustrating the limitations of a 'one size fits all' model. Importantly,
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12 functional specialisation is also identified in relations between London and the wider
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14 South East of England, adding another layer of explanatory complexity which is difficult
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16 to measure quantitatively or to represent by means of mathematical modelling.
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20 21 22 *Mega-city region networks and location* 23 24 25 26

27 Comparisons between the eight MCRs strongly suggest that proximity to London's
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29 global super-connectivity makes the South East England MCR distinct from others in the
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31 study. The co-presence of international service firms and labour in London generates a
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33 great volume and intensity of high quality interactions that is 'spun out' to service Multi-
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35 National Companies (MNCs) outside it. Interview evidence (extracted from PAIN, 2005
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37 and POTTS and PAIN, 2005) on the business links between London and the eight APS
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39 centres beyond it, sheds light on the implications of MCR emergence for South East
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41 England 'core-periphery' relationships.
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48 Interviews in the eight MCR 'secondary' centres demonstrate the crucial importance of
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50 APS network links to London. The sector with the strongest apparent network
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52 connections is accountancy but very many linkages are far from obvious. For example a
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54 logistics industry expert explains that in this sector advanced service activity is embedded
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within network ‘overlays right through the South East’, including retail networks, that would be impossible to discover or quantify (Lon/I/J). Of the firms interviewed outside London, 72% have network links with London through having an office presence in both locations (POTTS and PAIN, 2005, p. 6): Reading (67%), Cambridge (95%), Southampton (83%), Crawley-Gatwick (57%), Bournemouth-Poole (67%), St Albans (60%), Swindon (80%), Milton Keynes (30%) (percentages for individual urban centres are not statistically significant as sample size varies).

Overall 62% of firms across the eight centres are part of international (European or global) networks; this applies to over two-thirds of firms in accountancy, banking/finance, logistics and management consultancy (*ibid.*, p. 6). The organisation of regional services through non-hierarchical matrix management structures facilitates co-operative working practices, information sharing and knowledge transfer (Lon/MC/1A). Regional service strategies strike a balance between offering a local ‘full-service office’ in MCR ‘natural markets’ and locating ‘skill sets’ in a few select offices where specialists can interact in proximity to the most frequent market users. Interaction between offices ensures that knowledge and skills are made available wherever they are needed, contributing to MCR functional linkages between South East England’s APS centres.

All sectors are highly concentrated in London, with the exception of logistics which is organised on a different geographical basis from other sectors. Significantly, the eight APS centres outside London similarly show no notable sectoral specialisation. Financial services are well represented in Bournemouth and logistics in Milton Keynes, Reading

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3 and Crawley are seen as important emerging service clusters for accountancy and law,
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5 Cambridge has a large representation of design and information technology (IT) firms.
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7 But a wide variety of other sectors is also represented in these centres and this has
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9 advantages for business and knowledge transfer. Interestingly, this finding is in contrast
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11 to the results for more morphologically polycentric MCRs, such as The Randstad and the
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13 RhineRuhr, which have a stronger sectoral specialisation between centres.
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20 All firms interviewed, focus on specific sub-regional service markets where there is a
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22 significant presence of business clients, particularly MNCs. For example, Reading and
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24 the 'Thames Valley Corridor' (including Slough to the east and Basingstoke to the south-
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26 west) are noted as important due to their high representation of US and European
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28 headquartered (HQd) firms. There is a strong representation of APS firms, with offices
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30 also in London, across all sectors in this area (Lon/I/L). A business expert refers to the
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32 need for firms 'to have some connection [to] the triangle between Oxford, Guildford and
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34 Cambridge but to latch into this depends on the nature of the business.' (Lon/I/L)
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41 The 'branch offices' of global and international scope accountancy firms are particularly
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43 focused on servicing international firms outside London 'with a local presence' (Lon/I/I).
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45 An accountancy expert explains how 'the Big Four will make their networks happen
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47 where there is the right business for them' (Lon/I/I). As discussed, logistics is the only
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49 sector without major management functions in London except for services provided by
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51 management consultancies, nevertheless most of the mainstream international logistics
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53 firms retain offices in central London for 'the major functions, dinners, whatever' but
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work takes place elsewhere (Lon/I/J). In banking/financial services, major ‘back offices’ of international scope firms outside London undertake largely routine support functions. For example, a major global firm ‘initially set up as a regional technology hub and, since then, has developed into essentially one of a number of global hubs ... processing and or providing technology ... processing for derivatives’ (B/F 2). But although non-retail activities in banking/finance and insurance are traditionally highly clustered in central London, there are signs that even this is changing. There are indications that some high-complexity business functions are now being undertaken in centres outside London (Lon/I/L):

The accepted wisdom is that you have got banking, insurance and finance in the city. And ... out here in the South East and the East of England ...all of that is the sort of back offices. And I am not convinced about that any more. (Lon/I/L)

Networks and interaction

The interviews shed light on the volume of *intra-firm* connectivities – interactions and knowledge transfer - taking place between the offices of firms with multiple MCR locations - the connectivities measured in APS quantitative analysis and mapped schematically (TAYLOR *et al.*, 2006, Figure 3.2, p. 61 and in this issue). Of the firms interviewed in the eight centres outside London, 58% have another office within the MCR apart from a London office (POTTS and PAIN, 2005, p. 8). Four types of network interaction between offices, and thus between MCR service centres, are identified (*Ibid.*,

2005):

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- 1) *Inter-office Support* - Internal support links between offices include IT, administration, sales, marketing, human resources, finance, accounts, shared head office, board meetings and frequent visits by senior managers and directors to different offices. Tabulation of links across the study showed that all sectors, network scopes and locations have high levels of inter-office support (*Ibid.*, 2005, pp. 8-10). Only 11 out of 81 firms interviewed outside London do not give or receive internal network support. Of those involved in inter-office support, 49 firms refer to an office located in London.
- 2) *Specialisms* - 46 firms interviewed noted specialist skills within their network (crucial in high-value, non-standardised business services) that are drawn upon by their own office and others (*Ibid.*, 2005, p. 9). The availability of transferable functional specialisms reflects the concentration of services across the MCR. For example, insolvency law is located in towns with many accountancy firms while transfer pricing in accountancy is located in areas with strong inward investment (Law 3). Specialisms are said to be ‘seamlessly’ spread across regional office networks.
- 3) *Joint Working* - Joint working between two or more offices in the same network is very common. Skills are combined by physical movement of staff between offices to work together on specific projects. For example, the healthcare arm of a major insurance firm works with the general insurance arm of the same firm to manage bodily injury claims. At least two thirds of firms in secondary centres are involved in joint working and more than 80% in Bournemouth, Reading, Crawley and Southampton. On a sectoral basis, 80-90% of accountancy, advertising and design firms are involved in joint working and 40% in insurance.
- 4) *Meetings* - Formal meetings between partners and managers of all levels of seniority, are a key form of intra-firm connectivity. Efforts are made to rotate meetings and involve all staff in order to build a sense of ‘team’. London is the usual venue for international meetings in European and global scope networks.

BOX 1

Inter-urban functional linkages

Given the scale of London's APS agglomeration at all network scopes, the number of firms interviewed showing evidence of regional *inter-firm office connectivity*, suggests a surprising amount of functional linkage between the eight APS centres as well as with London. According to industry experts, in spite of London's size and depth of infrastructure, APS business outside London is intensely competitive and this generates important cross-cutting linkages between centres across the MCR. New offices are opening in response to specific market opportunities but the growth of MCR clusters is governed by business intuition as to where *multi-sector* APS representation is increasing. As in the case of London, relationships *between* service suppliers are vitally important and are not represented in the quantitative analysis. One firm wants a presence in Reading because

Over the last ten years I think that ... banks and accountants ... are regionalising and saying well where shall we have our HQ and Reading has been winning quite a lot of those discussions. (Law 3)

Another firm agrees Reading has 'got stronger' because the Big Four accountants are in Reading, and the surveyors likewise, tend to be here. The banks tend to have their regional headquarters in Reading. So, Reading is very much a ... professional services centre ... that's definitely strengthened over the last 16 years. (Law 19)

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The Crawley-Gatwick area is perceived by several major firms to be a ‘hot spot’ in the area around London. A ‘Big Four’ accountancy firm notes how its Brighton office was merged into its Crawley office to create a new office at Gatwick:

One of the key issues for us is where do we get our work from - where are the regional corporate banking centres, where are the lawyers? ... Many of them are in Crawley-Gatwick. PWC have recently opened there and presumably they did a review and formed the same view. (Acc. 34)

As explained, within London, proximity to clients is one of several reasons for the clustering of wholesale functions and is no longer considered the most important reason – for global firms, availability of skilled labour is now regarded as more important (commonly dictating office location in relation to specific central transport hubs) and contradicting Krugman’s emphasis on demand factors. And a notable functional specialisation between offices in central London and the MCR secondary centres is apparent. Service networks and their business clients mutually benefit from proximity to London and the presence of the world class skills and specialisms available there. Depth of specialist skills in London is superior to that outside it but leverage of these skills *through networks* gives London a *complementary* relationship with other MCR urban centres. In addition, another key trend noted by an industry expert is the potential for skills outside London to attract back to the MCR, client contact functions that were once off-shored to cheaper, more distant locations and this

benefits businesses in London, 'a lot of the more flexible, more responsive kind of work is being brought back' (Lon/I/B).

The high level of MCR interaction discovered from the interviews illustrates the complexity of interrelationships between footloose knowledge-based activities, transport costs, and IT development that underlie interdependencies between space and the economy. Crucially, APS business *outside* London is as much driven by the importance of relationships between people and firms and the need for close physical proximity, as it is *within* it and this is illustrated by the interview evidence on modes of communication.

Knowledge production and transfer

Virtual Flows: The interviews reveal a huge rise in the use of virtual communications in the eight secondary centres as well as in London. E-mail in particular has transformed the way firms do business, making distance in some ways far less relevant. Virtual communications including intranet, video and tele-conferencing, allow office networks to extend geographically, and some functions to disperse, in conjunction with processes of concentration. But while high in volume, in common with other e-communications, e-mail is mainly used for internal communications within office networks and is reported not to influence agglomeration in London at all. Telephone is an ongoing highly important mode but, even outside London, virtual communications are not replacing the need for frequent face-to-face contact with colleagues, clients and other economic actors.

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While this finding supports Krugman’s thesis that declining transport costs associated with ICTs in fact have a centripetal impact, the reasons behind this are far more complex than his model suggests and proved impossible to quantify in the POLYNET study.

Face-to-Face Contact: Close proximity for unscheduled and scheduled interactions is stressed as essential by interviewees outside London as much as within it and is a key agglomeration factor but the need for face-to-face contact and travel is also growing, as illustrated by an advertising firm who,

still find the bulk of what we do is dependent on creative and visual and face to face briefing ... Our industry is very much a people-based creative industry and that’s where e-mail, texting, any kind of non face-to-face communication is bad because being creative is all about people’s emotions. ... It’s about how much the client likes it and very much the business is won and lost on chemistry between individuals. (Adv. 11)

While no data on actual transport costs was available, the rising use of virtual communications clearly does not reduce the need for travel.

Modes Intersect: The continuing need for face-to-face meetings not only maintains centripetal forces due to the need for close physical proximity but results in very high out-of-office mobility particularly amongst client-facing and senior levels of staff. A senior logistics manager reports that he only spends ‘a day a week in the office’ (Log.

30). And mobility and technology are developing in tandem and thus increasingly, virtual and physical communication flows are taking place at one and the same time – a clear indication of the need to test economic models such as Krugman’s regularly against fresh empirical evidence. Within the MCR, as one law firm puts it, ‘there is a greater use of technology because of our regional spread to enable us to function more effectively’ (Law 9).

Functional polycentricity at *intra-regional* and *inter-regional* (‘core’ to ‘core’) scales is emerging in South East England in spite of intensive use of ICTs and the high cost of travel. Movement between urban centres across the MCR of necessity (time and practicality) is frequently by car. Dense cross-cutting commuting patterns mapped to the west of London using 2001 census data (HALL *et al.*, 2006, Figure 2.10a, p. 38) are shown to be overlaid by high frequency business travel. The interview evidence on transport difficulties is substantial but a key issue is the need for improved orbital infrastructures and public transport services outside, as well as east-west within, London. A conundrum for policy is that cross-cutting travel, which is an essential feature of APS regional development, conflicts with environmental policy priorities that aim to restrict physical movement, especially by car.

The significance of ‘place’?

Evidently neither the central London APS cluster, nor the wide area around it, can be properly understood without an appreciation of the MCR as a dynamic functional space

in the European and global service economy. There is a significant difference between the skills, functions and value of APS activity associated with the London hub and that of the eight MCR regional centres. The latter are oriented towards sub-regional APS clusters and markets thus the inter-urban linkages and flows identified between them have a lower volume and intensity relative to London but the leverage of skills and knowledge *through* London is a spur to knowledge-based development outside it. Importantly, these flows are not competing with London. They reflect regional economic growth, not a movement of knowledge-based functions from ‘core’ to ‘periphery’. In fact, back-office functions that have dispersed to distant off-shore locations to reduce cost, also recentralize back to London and the South East as they become more complex, skilled and/or client facing. Centralising, decentralising and re-centralising functions are dependent on specific business sector and market orientation. Yet overall, the importance of central London clustering is not diminished but is said to be increasing - the ‘periphery’ is not gaining at the expense of the ‘core’. There is no evidence of an attraction to the fringe (centrifugal forces) for global wholesale functions, but there is substantial evidence of dynamic flows of activity within multi-scale networks which is reflected in the demand for highly flexible, and intensively electronically serviced, office buildings in central London *and* development pressures in the wider MCR.

Central London office locations are remarkably consistent. Non-standardised, high-complexity APS activity continues to require the concentration of many global actors in densely clustered central business locations. Firms pay the high cost of locating in the heart of ‘the City’, or ‘Square Mile’, because the *transnational* skills, knowledge and

markets their business is dependent on, are found there. Global firms especially, prioritise the *relationships* that occur only in special urban milieux. The all-important nuances that underpin these are not reflected in Krugman's explanation of new economy agglomeration and are far more diverse than is implied by his references to risk aversion. Furthermore, the relationship between the London 'core' and regional 'periphery' is shown to thrive on functional *complementarity*. Some regional HQd firms bemoan the difficulty of retaining 'young talent' since the most stimulating environments and jobs are located in London. But working practices in larger networks require inter-office cooperation and thus contribute to functional development across a wide MCR area. As firms join wider international office networks, either formally or through looser relationships, the MCR outside London benefits. This phenomenon is more evident in (morphologically monocentric) South East England than in any other MCR in the study, illustrating the potential for expansion of the globally networked knowledge economy around a highly globally connected First City.

CONCLUSIONS: IMPLICATIONS FOR POLYCENTRICITY AND PLANNING IN GLOBALISATION

Finally what are the implications of the interview results? Does European spatial guidance provides a relevant basis for MCR policy and, if not, what new theoretical insights are needed?

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The evidence strongly indicates that London’s conceptualisation as a monocentric core in European spatial strategy is an inappropriate basis for MCR policy. London’s strong global connectivity, which requires transnational agglomeration, proves vital for the development of MCR functional polycentricity. Relationships and informational flows within and between firms using this space to conduct business at different network scales, indicates that the polycentric functional structure of MCR linkages is stronger and more complex than shown by quantitative analysis. The results endorse the need, first identified by Scott (2001a), to re-conceptualise global city-region development processes as *multi-scale relational networks*.

The findings thus contradict the binary constructions implied by the core-periphery thesis and ESDP concept of polycentrism. MCR boundaries prove impossible to delineate because markets, service networks and their interactions, are shown to overlap and shift in an active local-global nexus. Furthermore, firms rely on *complementary network*, as opposed to *oppositional territorial, relationships* to conduct business across cities, contradicting perspectives suggesting competitive relations between cities (for example PORTER 1998, 2001; CAMAGNI, 2001). *Within* firms, skills, specialisms and information are shared between city-based offices; knowledge is transferred *between* firms through the complex relationships that are a distinctive feature of APS wholesale services. But these MCR processes are dynamic and not easily quantified, limiting the possibilities for mathematical modelling as used in the New Economic Geography.

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3 A more sophisticated theoretical basis upon which to inform policy is clearly needed.
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5 Binary thinking that reflects pre-globalisation geographies of places fails to engage with
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7 opportunities for multi-scale cooperation to exploit functional complementarities
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9 generated by firms. Regional ‘boosterism’ and ‘re-balancing’ that has been a feature of
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11 EU cooperation projects supported by Structural and Cohesion funds, and apparently by
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13 Krugman (1996), reflect space of places territorial constructions. The UK Government
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15 ‘Sustainable Communities’ strategy (ODPM, 2003a, b) and regional policy have
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17 rigorously attempted to follow EU guidance on polycentricity. The thinking behind ‘The
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19 Northern Way’ exemplifies an attempt to address problems of North-South uneven
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21 development by boosting agglomeration at a major city-region scale (ODPM, 2004;
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23 ROBSON, 2005) but the territorial locus for policy cooperation has been within the North
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25 of England.
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34 Horizontal and vertical policy boundaries were found to constitute significant barriers to
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36 effective MCR governance across North West Europe. In contradiction to OHMAE’S
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38 (1990) prediction, national context and regulation remain important in shaping MCR
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40 emergence by either opening up, or closing down, opportunities for information flows
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42 and interactions. And the ability to respond to MCR emergence effectively will be
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44 essential for three reasons.
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51 First, uneven functional development between the east and west of South East England,
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53 confirms the ongoing challenge of promoting more balanced *sustainable* economic
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55 development even in the most functionally polycentric MCR studied. This has
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implications for Government plans for major development in the Thames Gateway and Ashford Growth Areas and to the east of London which are largely disconnected from global APS networks (ODPM, 2003a; MAYOR OF LONDON, 2004; PAIN, 2006; PAIN *et al.*, 2006). But these plans must also be balanced against urgent priorities to support existing areas of concentration that prove crucial to sustain wider knowledge-based growth at different spatial scales, in particular through major investment in environmentally sustainable travel.

Second, important questions remain about how MCR emergence may affect what have traditionally been theorised as ‘dominant core-periphery relationships’ and path-dependent tendencies at national, European and global scales (SCOTT, 2001a, b). There is a vital need to extend quantitative and qualitative analysis to shed light on potential functional complementarities that could be exploited through inter-city policy networking across these scales.

Finally, while APS have a crucial role in the new economy, they are mainly associated with high-skill, high-value employment. Other prisms are needed to gain insights into how APS interrelate with the wider economy and society and thus how greater social equity might be promoted across territorial space – the EU territorial cohesion agenda. MCR emergence in South East England indicates that further theoretically and empirically focused interdisciplinary research is essential to inform joined up policy approaches on these issues, replacing current oppositional territorial perspectives on spatial planning in globalisation.

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