



European planning and the polycentric consensus : wishful thinking ?

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European planning and the polycentric consensus : wishful thinking ?

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European planning and the polycentric consensus : wishful thinking ?

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ABSTRACT - EU planning documents enhance the values of polycentrism, as a tool to promote a more efficient, equitable and sustainable development. This paper highlights how and suggests why a descriptive approach of the European urban system became progressively a normative concept. It examines how biases in the measurement of polycentricity in the ESPON 1.1.1 report are related to this normative approach. Our empirical findings don't suggest any clear correlation between more polycentricity and more economic efficiency or even more spatial equity. The paper examines the reasons of the EU tenacity to promote polycentrism. This concept seems to be the result of a political compromise and a strange hybrid between two competing approaches for the future of the European space.

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2 KEY WORDS : urban networks, polycentrism, polycentricity, ESPON, European planning
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4 policies.
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8 JEL Code : R1, R52, R58
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10 La planification européenne et le consensus du polycentrisme : un mythe
11 politique ?
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13 RESUME - Les documents de planification de l'Union européenne promeuvent le
14 polycentrisme, présenté comme un outil au service d'un développement plus efficace, plus
15 équitable et plus durable. Cet article examine comment et pourquoi une approche descriptive
16 du système urbain européen est progressivement devenue un concept normatif. Il examine les
17 liaisons entre les biais dans la mesure de la polycentricité telle qu'elle a été pratiquée par
18 l'étude ESPON 1.1.1 et cette approche normative. Nos résultats empiriques ne montrent pas
19 de corrélation significative entre des systèmes urbains plus polycentriques, plus d'efficacité
20 économique ou plus d'équité spatiale. L'article examine les raisons de la volonté de promotion
21 du polycentrisme par les autorités européennes. Cette promotion semble résulter d'un
22 compromis politique et le concept apparaît comme un étrange hybride entre deux conceptions
23 opposées du futur de la construction spatiale de l'Europe.
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37 MOTS CLES : armatures urbaines, polycentrisme, polycentricité, ESPON, politiques de
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41 Europäische Raumplanung und der Polyzentrismuskonsens : politische
42 Wunschvorstellung ?
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44 ZUSAMMENFASSUNG
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46 Offizielle europäische Raumplanungsdokumente vertreten die Idee des Polyzentrismus als
47 Werkzeug für eine effizientere, gerechtere und nachhaltigere Entwicklung. Dieser Artikel
48 untersucht wie und warum ein ursprünglich beschreibendes Konzept zu einem normativen
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2 Konzept geworden ist. Er erforscht die Verbindungen zwischen voreingenommenen
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8 Korrelation zwischen polyzentrischen Städtesystemen und wirtschaftlicher Effizienz oder
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10 räumlicher Gerechtigkeit. Der Artikel untersucht die Gründe für den Willen der europäischen
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12 Behörden zur Förderung des Polyzentrismus. Diese Förderung scheint das Resultat eines
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14 politischen Kompromisses, und das Konzept wirkt wie eine merkwürdige Hybride zwischen
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16 zwei gegensätzlichen Konzeptionen der Zukunft der räumlichen Konstruktion Europas.
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20 SCHLÜSSELWÖRTER : urbane Struktur, Polyzentrismus, ESPON, europäische
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26 Planificación europea y el consenso policéntrico: ¿una ilusión?

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28 Vandermotten, Christian, Halbert, Ludovic and Roelandts, Marcel
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30 ABSTRACT –

31 Los documentos de planificación de la UE mejoran los valores de policentrismo como
32 herramienta para fomentar un desarrollo más eficaz, justo y sostenible. En este artículo
33 destacamos cómo y por qué motivo el planteamiento descriptivo del sistema urbano europeo
34 se convirtió poco a poco en un concepto normativo. Examinamos qué relación tiene este
35 planteamiento normativo con los sesgos al medir la policentralidad en el informe ESPON
36 1.1.1. Nuestros resultados empíricos no sugieren una clara relación entre más policentralidad
37 y más eficacia económica o incluso más igualdad espacial. Aquí analizamos los motivos de la
38 tenacidad de la UE por fomentar el policentrismo. Este concepto parece ser el resultado de un
39 compromiso político y un extraño híbrido entre dos planteamientos competitivos para el
40 futuro del espacio europeo.

41 KEY WORDS :

42 Redes urbanas
43 Policentrismo
44 Policentralidad
45 ESPON
46 Políticas europeas de planificación
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INTRODUCTION

Regions and cities play an increasing role in European territorial planning strategies. In this context, the enhancement of polycentrism in terms of regional and urban planning strategies has become a key priority on EU's agenda (ALLAIN, BAUELLE, GUY, 2003). The European Spatial Development Perspective (ESDP) depicts polycentrism as a way to ensure both improved territorial planning and a more balanced development of the European space. As time went polycentrism has been increasingly credited with new virtues. What was at first a planning principle became at Lisbon's Summit in 2000 a major tool to increase economic competitiveness and the development of the 'knowledge economy'. At the European Gothenburg's Council in June 2001, where the emphasis have slightly been shifted toward environmental issues, polycentrism was presented as a key contribution to sustainable development strategies.

This enlargement of the qualities attributed to polycentric spatial planning policies to wide-ranging aspects of the collective well-fare of European citizens has been paralleled with the development of a new narrative insisting on multi-scalar approaches. The ESDP depicts polycentrism as a two-scales process/policy. First, at the European level, polycentrism is seen as a tool to stimulate new or emergent growth poles located outside the so-called 'Pentagon' — Europe's economic core stretching from London to Milan, and from Paris to German cities — and thus to transform the stigmatised EU centre-periphery spatial structure into a more balanced 'bunch of grapes'. Meantime, at the regional level, polycentrism is presented as the panacea for a balanced spatial development: polycentric urban regions (PURs) made of

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several nearby and interacting cities are supposed to be more suitable a spatial structure since
 i) they limit the supposedly socially and environmentally unsustainable concentrations,
 typical of large monocentric urban regions and ii) they form a constellation of medium-sized
 cities able, - if working hands in hands to achieve the highest standards in the international
 competition (FALUDI, 2004).

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Based on a critical study of the concept of polycentrism promoted by EU documents and
 related scientific studies, and focusing only on the national (and not the intra-metropolitan)
 level, this paper aims to discuss the conceptualisation and use of the regional and urban level
 in EU spatial planning policies. We intend:

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(i) to highlight how a descriptive approach of the European urban system was
 progressively replaced by a normative conception which is currently promoted by EU
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(ii) to examine possible biases in the measurement of polycentricity developed by EU-
 related studies, especially by the ESPON 1.1.1 study (NORDREGIO *et al.*, 2005), which
 seems to waver between a purely scientific exercise and a more policy oriented report,
 Even if this study does not implicate the EU authorities that are responsible for regional
 planning and economic development policies, one has the feeling that it is a remarkable
 example of the impact of normative presuppositions that are largely in line with EU
 spatial planning principles;

(iii) to show how our personal empirical observations contradict the presupposed benefits
 of polycentrism at European level;

(iv) to discuss the underlying logics that explain the success of polycentrism as a widely
 accepted political concept.

The methodology of this paper combines analyses based on i) a survey of recent policy and research documents (ESDP and ESPON 1.1.1. especially), ii) two empirical analyses at European level (a statistical analysis of a polycentricity index vs. economic and social indicators and a series of interviews with 'Advanced Producer Services' (APS) professionals in major European city-regions undertaken in the Polynet research programme) and iii) a critical theoretical review of the concepts of polycentricity and polycentrism. From then on, we refer with the term 'polycentricity' to any spatial structure following a polycentric pattern, whereas 'polycentrism' is used to engage with normative/political issues.

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Through a critical reading of the polycentrism concept, this paper is thus in line with the discussion about EU spatial planning, especially the conceptualization and use of the regional level in the implementation of planning strategies.

FROM THE DESCRIPTION OF EUROPEAN URBAN SYSTEMS TO EU SPATIAL PLANNING STRATEGIES

In the first part of the paper, we would like to quickly review the recent history of European studies dealing with urban systems. We observe a dominant shift from scientific descriptions of European urban patterns (of which polycentricity was but one concept among many others) to the promotion of polycentrism - a form of ideology based on the concept of polycentricity - in EU spatial planning policies.

One of the early theoretical analysis on urban structures was Christaller's (CHRISTALLER, 1933). It was based upon the empirical observation of a prevalently agro-industrial economy and society typical of south Germany at that time. In the late 50s and 60s, studies on urban patterns and networks multiplied in various countries, as well in West as in East Europe. Whether it was following a Fordist regulationist perspective or socialist planning objectives, in both parts of Europe large-scale infrastructures were required. The key issue was the provision of services and consumer goods (basic, semi-rare or rare) to all parts of the national

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territory to counter an unwanted but still very strong rural exodus. In many cases, rural exodus was seen as a negative trend not only for the new uprooted migrants arriving in large impersonal cities but also for the rural and impoverished rest of the territory (but was it really true?), J.F. Gravier's notorious book 'Paris et le désert français' (*Paris and the French desert*, GRAVIER, 1947) illustrates the raising awareness of the limits of archaic/agrarian structures still characterizing large parts of the French territory at the end of the Second World War. The implementation of Christaller-like spatial organisations by national planning authorities was first supported through the development of major infrastructures, in order both to improve the quantitative and qualitative provision of services all over the national territory, following the different levels of the urban hierarchy, and to achieve Keynesian-type economic growth. Spatial planning in the post-war years was thus considered as a contribution to Fordist development, supporting the development of rural and semi-rural areas which hosted new manufacturing plants employing low-skilled workers on assembly lines and benefited from a more general context of full employment, rising wages, and decreasing dependency on coal mining and rail.

In this context, urban networks were understood in terms of hierarchies and reflected a rather pyramidal spatial organisation, from the biggest metropolises to the smallest towns. The paradox is that the success of this 'development' model led to a strong increase both in people's mobility and in the general quality of infrastructures which, in return, changed the locations of functions that used to traditionally be distributed according to the rankings of cities within the urban hierarchy. Nowadays, these functions are shaped by complex multi-directional mobility networks and are located in places that partly escape classical inherited hierarchies (see for instance the redistribution of centralities emerging from new centres such as tourism-related cities, shopping centres outside city-centres, peripheral outlet centres, etc.), even if fundamental hierarchies subsists for the upper-level functions.

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It is not before the 70s that researches seem to have focused on the European urban system as a whole, even though most of the time under the form of a collection of national descriptions of the upper-levels urban hierarchies (JUILLARD, NONN, 1976; NICOLAÏ, VANDERMOTTEN, 1978). The spatial organisations depicted in these studies reflect differences between various national urban systems, ranging from the most monocentric to the most polycentric ones. They highlight in so to which extent urban systems are the products of long historical processes which have shaped national spaces and can thus be partly explained by inertia and 'permanences' (DAMETTE, SCHEIBLING, 1995; VANDERMOTTEN, 2000; VANDERMOTTEN, ROELANDTS, CORNUT, 2007). The well-known French and British monocentric national patterns for example (the latter being more functional than morphological, due to specific urbanization processes during the industrial revolution) have developed more or less simultaneously with the precocious formation of the central State in these two countries (and, paradoxically, even before the State consolidation in the French case: the strong primacy of Paris was already observed as early as the 14th century).

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Brunet's works, and the famous 'Blue Banana', can be seen as the first fully pan-European study, rather than a more or less complex addition of national analyses (BRUNET, 1989). He uses the concept of inter-urban polycentricity to describe some urban regions made of a series of cities of equivalent size and with supposed interlinkages. The Randstad Holland (also called now Delta Metropolis), the Flemish Diamond and the Rhine-Ruhr area were key-examples of this category of urban regions. Recent works on the European urban system (ROZENBLAT, CICILLE, 2003) have contributed to the development of more systemic analyses discussing the organisation, hierarchy and functioning of the European urban system.

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These works are still strongly embedded in the scientific field of urban and regional geography.

However, as early as the Leipzig Conference in 1994, that is to say when EU policy-makers became more involved in urban and regional matters, mainstream analyses of European urban systems shifted from the description of spatial configurations to a quest for the 'best' spatial organisation, understood as simultaneously the most efficient, equitable and sustainable. In this renewed normative context (DAVOUDI, 2003), the European regional planning debate soon focused on the monocentrism/polycentrism couple, in which EU authorities' preference clearly went for the latter.

The origin of this normative polycentrism dates back to the late 80s when the French national planning agency, known as the DATAR (*Délégation à l'Aménagement du Territoire et à l'Action Régionale – Delegation to Spatial Planning and Regional Action*), convinced the Commission to produce a spatial plan for the European territory (FALUDI, WATERHOUT, 2002). This opened an avenue for the Member States and the Commission to influence EU spatial policy – and of course the distribution of structural funds – which culminated with the final adoption of the ESDP in 1999. To put it roughly, the Southern States, following Italy's leading role, pleaded for more spatial cohesion within Europe (thus for more investments in the peripheral regions), whereas the States from the 'core' area, the Netherlands in particular, were fervent advocates of the enhancement of the general well being (implicitly including as well and thus favouring the core regions) (WATERHOUT, 2002). Quite amusingly, both policy options were promoted by their respective camps as the necessary prerequisite to improve Europe's competitiveness. According to Waterhout, polycentrism became so the bridging concept between both conceptions because the development of urban networks

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throughout Europe i) 'reduces' the distance between centre and periphery (hence enhancing the competitiveness of the latter), ii) recognizes the importance of urban networks in the centre, and iii) pays equal attention to lagging and prosperous regions. Brunet's 'Blue Banana' was thus replaced by the 'bunch of grapes' political objective, the 'grapes' being urban regions organised as much as possible in a polycentric shape (KUNZMANN, WEGENER, 1991 first used the expression 'bunch of grapes'). From then on, polycentrism has become a key principle in European spatial planning policies. It is in this regard quite symptomatic that the first study credited to the European Spatial Observatory Network (ESPON) focused on 'Potentials for Polycentric Development' to which we now turn.

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THE ESPON 1.1.1 STUDY ON POLYCENTRISM IN QUESTION

The European Commission (DG Regio) and the member States launched an ambitious research and decision-aid program, named ESPON (European Spatial Observation Network, www.espon.eu). As its first research project expresses in its final report (NORDREGIO et al., 2005, p. 40), ESPON is firmly rooted into the polycentricism debate and in EU regional spatial planning policies:

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'As a follow-up to the ESDP, polycentricity is one of the core topics of the European Spatial Planning Observatory Network (ESPON) programme (...).'

In this regard, ESPON follows two potentially conflicting objectives: first, to improve the scientific understanding of EU's urban system (research objective); second, to contribute to the enhancement of polycentrism (policy objective) as the ESPON 1.1.1 report admits:

'The ESPON programme stresses the need to enhance polycentricity at all spatial levels.' (NORDREGIO *et al.*, 2005, p. 40)

ESPON 1.1.1 was crucial in the achievement of these two goals for it was given the priority task to tackle the concept of urban polycentricity/polycentrism (NORDREGIO *et al.*, 2005) by proposing theoretical as well as empirical evidences of its reality in EU geography. One is therefore bound to go through a detailed review of ESPON 1.1.1 report to further understand the issue of polycentrism in Europe. This part of our paper would like to briefly point out some concerns raised by the final report.

The ESPON 1.1.1 methodology to measure polycentricity is based on the analysis of the size and distribution of Functional Urban Areas (FUAs) throughout the European space. FUAs are defined in principle by the labour basins corresponding to their urban cores (commuter's catchment area). This conception, inspired by Hall and Hay's works (HALL, HAY, 1980), and further developed by the GEMACA group (GEMACA, 1996), makes sense in a context of suburbanisation and growing commuting distance, even if it appears, as we will develop hereafter, that, when FUAs are comparable in size, systems structured around a single morphological centre, with a strong historical background and identity, often show better performances than less structured conurbations.

A first remark to the ESPON 1.1.1 study is that the population figures of FUAs are sometimes doubtful. What looks like a very consistent methodology based on identical criteria through all the European space was not correctly implemented in each country, sometimes due to a lack of data, sometimes to a bad implementation of the criteria (ANTIKAINEN, 2005; GÖDDECKE-STELLMANN, PORSCHE, SCHMIDT-SEIWERT, 2005). In some cases, so-

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called FUAs are restricted to the morphological urban cores (missing the commuters' basin); in others, the administrative boundaries of the central city or of the corresponding NUTS 3 unit have been used; sometimes secondary cores of large urban areas have been identified as separate FUAs. For instance, suburban cores in Budapest or Desio, a suburb a few kilometres away from Milan, have been considered as separate FUAs whereas the Paris new towns are – quite rightfully according to the original definition – part of the Paris FUA (VANDERMOTTEN, PEETERS, HALBERT, KORCELLI, ILIES *et al.*, 2006).

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Yet, this lack of consistency even though harmful in terms of scientific results might not be the major concern raised by the study, especially when one acknowledges the tremendous difficult challenge that a consistent data collection throughout Europe still remains. We would rather discuss here some potential theoretical deficiencies observed in the ESPON 1.1.1 study, and above all, how these deficiencies might highlight some presuppositions implicitly present in EU's spatial planning policies. As explained above, ESPON 1.1.1 study goes from a scientific description of polycentricity to a more normative discourse pleading in favour of polycentrism. For instance, instead of discussing the reasons for the differences between various national situations, the final report stigmatises some urban systems according to normative presuppositions. In Hungary, for example, rather than linking Budapest primatial position to its historical background - the city was the capital of an agrarian kingdom much larger than today's Hungarian territory -, the ESPON 1.1.1 study points out that Budapest is too large in accordance to the rank-size law (ZIPF, 1949), which is thus supposed by the authors to reflect the best distribution of cities for any national territory, a statement that Zipf himself would probably not have asserted. Quite ironically it is nowhere mentioned that a capital city is too small in countries in which the primateship of the largest city is inferior to what Zipf rank-size law predicts. More fundamentally, the rank-size 'law' concept is diverted

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from its descriptive nature (a relatively constant relation between size and rank of cities in a given urban structure), towards a normative postulate that favours EU regional planning objectives, i.e. to enhance polycentrism,

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On top of 'scientific' postulates that are misleading, some key methods and results of the ESPON 1.1.1 report needs to be taken with great care. The polycentricity index proposed by the ESPON 1.1.1 study, from which many conclusions on the so-called economic, social and environmental benefits of polycentrism are inferred, relies on a questionable methodology (VANDERMOTTEN, ROELANDTS, CORNUT, 2007). This ESPON 1.1.1 index is based on three (normative and implicit) postulates, which found the choice of the indicators:

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(i) a flat linear rank-size distribution is believed to reflect a more suitable urban pattern because no single city is dominant;

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(ii) an uniform distribution of cities disseminated throughout the national territory is better than urban clusters polarised on certain parts of this territory ;

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(iii) accessibility should be identical for small and big FUAs in a polycentric spatial organisation.

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ESPON 1.1.1 builds thus a comprehensive index using various indicators supposed to account for these three postulates : it uses the slope of the regression line of the rank-size distribution of FUAs populations and GDP and primacy rate ; the Gini coefficient of the size of the Thiessen's polygons around each FUA ; a connectivity index, with two sub-indicators, the slope of the regression line between the accessibility and the population of the FUAs and the Gini coefficient of the accessibility of the FUAs. On this basis, it characterises each country by an average synthetic value, notwithstanding its size. Beyond the normative character assigned to the rank-size law, a logical incoherence appears, as this index takes into account

both the distribution of FUAs' population and their GDP, where a scientific analysis aiming to

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measure the economic efficiency of an urban polycentric system should on the contrary compared polycentricity and GDP indicators.

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The ESPON 1.1.1 index sometimes leads to results different to the any common knowledge of national geographies and literatures. The study argues for example that the Irish urban system is a polycentric one, what is also criticised by Convery *et al.* (CONVERY *et al.*, 2006). This invalid result is due, among other factors, to the use of Thiessen's rather than Reilly's polygons to measure the equidistribution degree of FUAs through a national territory. Rather than depending on a gravity measurement, Thiessen's polygon are built on the perpendicular bisector of the line that links two neighbouring cities, so that the limits of the spheres of influence of small cities of the Western coast like Galway and Limerick are excessively extended, in comparison to Dublin's : again, following a normative perspective, the use of Thiessen's polygons means that equality of the size of these polygons is an objective *per se*, notwithstanding the pattern of the population on the territory (or to put it otherwise that the even distribution of the population on the national territory is an objective *per se*).

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Fig. 1. Level of polycentricity in the European countries. ESPON and own computation.

Source : ESPON 1.1.1 data and own computation.

The surprise arising from our ranking regarding a qualitative knowledge of the European urban pattern is the position of Hungary, which appears a priori to be very monocentric due to the weight of Budapest. This discrepancy is mainly due to the fact (i) that the index is based on population data and not on an appraisal of the level of concentration of the political and economical decision, (ii) that data used by ESPON 1,1,1 improperly separate some suburban "cities" from Budapest and (iii) to the very evenly distribution of the Hungarian cities outside Budapest.

We have developed our own methodology to confront ESPON 1.1.1 results. Figure 1 compares ESPON's polycentricity index with our own computation of a very simple index, based on a purely *descriptive*, morphological approach (using yet ESPON 1.1.1 FUAs population data, even when they are debatable proxys). Our polycentricity index is a *synthetical* measure of various cardinal rankings of FUAs on the following indicators :

(i) share of the main FUA in the total population of the country ;

(iia and iib) weight of the main FUA in the total population of the whole set of FUAs with more than 200,000 and more than 50,000 inhabitants (for further discussion of (i) and (ii), see VANDERMOTTEN, ROELANDTS, CORNUT, 2007) ;

(iiia and iiib) average of the differences of population between a FUA and the following one in a decreasing ranking from the most populated FUA to the one *respectively* immediately beneath the threshold of 200,000 inhabitants and of 50,000 inhabitants, considering so the whole distribution of the sizes in the set of cities ;

(iva and ivb) standard deviation of the population of the set of FUAs with *respectively* more than 200,000 and more than 50,000 inhabitants.

The value of each of these seven indicators has been distributed on a scale ranging from 100 to 0, and the arithmetic average of these seven indicators computed. It gives a global polycentricity index which is exclusively based on a descriptive, morphological approach – the pattern of the distribution of the FUAs, according to their population -. Surely, more refined statistical indexes could be computed, but we wanted to remain near the logics of the ESPON 1.1.1 indicator, only avoiding to insert any normative presupposition in the building of the index and to introduce any confusion between the size of the FUAs (their population) and their economic efficiency (their GDP). Thus, the index *does not* intend to reflect

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Comment [Ludovic H6]: Trop elliptique à mon avis, un lecteur ne peut pas comprendre pourquoi retenir ces différents indicateurs. Quelles informations qualifient-ils ? En quoi reflètent-ils une polycentricité, même morphologique, dans une armature urbaine donnée ? Il est nécessaire de développer un peu la méthodologie pour offrir ue alternative crédible à ESPON 1.1.1.

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functional polycentricity, understood either as the level of symmetry of the interlinkages existing between urban areas, or defined in function of the distribution of the command functions, which are known to have a much more selective spatial pattern than population (VANDERMOTTEN *et al.*, 1999). In this regard, apparently morphological polycentric regions may hide for instance a strong functional monocentricity as would reflect the concentration of headquarters and APS, considered in the global economy literature as key indicators of the command function (SASSEN, 1991). This result is one of the most significant outcome of the POLYNET study, which confirms that even in morphological polycentric metropolitan regions, like Delta Metropolis in the Netherlands and South-East England, functions related to the APS sector remain concentrated in traditional central economic cores ('First cities'), like Amsterdam and London (HALL, PAIN, 2006). Functional polycentricity is much more significant at a European or worldwide level - the network of global cities - (VELTZ, 1996; BEAVERSTOCK, SMITH, TAYLOR *et al.*, 2000) than within enlarged metropolitan areas, the so-called Megacity Regions (HALL, PAIN, 2006).

In this context, one of the underlying scientific issues is to detail as rigorously as possible the definition of both the descriptive patterns (monocentricity vs. polycentricity) and the normative dimensions (monocentrism vs. polycentrism), but also to further develop EU policy-makers' objectives (what do hackneyed terms such as 'economic efficiency', 'social equity', 'environmental sustainability' or 'territorial cohesion' really mean?).

THE NORMATIVE PRESUPPOSITIONS OF POLYCENTRISM

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- Comment [Ludovic H7]: Il y a un gap dans la démonstration ici que je ne m'explique pas bien. On attend après la description de la méthodologie de l'indice de polycentrisme de l'IGEAT une discussion sur les résultats provenant de cet indice. Or on passe cependant à une réflexion sur polycentrisme morpho et fonctionnel qui arrive trop tôt à mon sens. Deux possibilités : enlever la partie sur l'indice de l'IGEAT ou développer les principaux résultats et les différences avec celui de ESPON 1.1.1.
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Beyond the question of measurement, we would like to engage here in a theoretical criticism of the normative presuppositions and supposed advantages of polycentrism, implicitly or explicitly expressed both in the ESPON [1.1.1](#) study and in official policy-oriented EU documents, such as the ESDP.

- First criticism: proposals in favour of polycentrism do not clarify the issue of scales and consider urban systems in an undifferentiated space continuum. Polycentricism is often promoted from the intra-urban level up to the European scale without consideration for what appear like very different processes. The evolution of the post-fordist economy no longer allows to consider simultaneously and with the same methodology i) the structuring role of cities as basic services providers for households and as execution centres of lower value-added production activities (following more or less Christallerian and fordist patterns), and ii) large metropolitan city-regions that act as nodes of a globalising world-economy. These 'upper-level' city-regions share generally a same significant population number, but this condition is far from being sufficient and is even not always present. Most of the larger national metropolises and megacities, but also some smaller gateways or internationally specialized cities (Luxembourg for ex.), locate the driving forces of the current transformations of the production system. It is them that are most involved in the so-called information revolution and that face an increasing specialisation in APS and in abstract production functions, such as R&D, management or marketing (HALBERT, 2005, 2006). In terms of monocentricity or polycentricity, it is thus interesting to compare the concentration of decision centres of international level between two global monocentric metropolitan regions such as Paris and London, and the polycentric Rhin-Ruhr area. Although almost equal in size the latter cannot sustain the comparison

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with the former in terms of international level command functions, despite Germany's economic weight (Fig. 2). Note that this result should not be taken as evidence for the promotion of monocentrism.

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Fig. 2. Location of headquarters of the European biggest transnational companies (European firms among the 2000 most important worldwide transnational firms).

Source : FORBES, 2000.

- Second criticism: proposals in favour of polycentrism make no clear distinction between morphological and functional polycentricity. The definition of large polycentric metropolitan areas is based on the juxtaposition of their functional urban areas. We argue that a coalescence of functional urban areas does not automatically lead to the reinforcement of a single labour market, nor to a more balanced distribution of functions between its constituent nodes. For instance, if the Rhine-Ruhr area appears like a set of closely located centres of equivalent size (but for Düsseldorf and Cologne) and consequently can be classified as morphologically polycentric, each urban centre has its own small and quite self-contained labour pool: the metropolitan area is relatively fragmented. On the contrary, the morphologically polycentric area of Central Belgium is in fact strongly polarised by Brussels which attracts huge commuting flows (GEMACA, 1996). Polycentrism is thus here more morphological than functional, and goes with a strong hierarchy of urban centres.

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Yet quite ironically the ESPON 1.1.1 report underlines how, both in scientific analyses and in the definition of public policies, the difference between morphological and functional polycentricity needs to be stressed. Whereas morphological

polycentricity refers to a static description of the urban organisation of a territory according to a rank-size 'law' or to a more or less homogenous spatial distribution of cities, functional polycentricity suggests another dimension of urban and regional systems, that can be theorised in two ways (see introduction of Paris article in this [Regional Studies Special Issue](#)).

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In a first definition, based on the widespread use of the term "functional" in urban geography, functional polycentricity can be used to describe cities and regions according to their particular specialisation in a set of functions, i.e. metropolises are often specialised in global command functions (APS, financial services, etc.), medium-sized cities in services to households, coast or mountain cities in tourism, small cities of rural regions in the industrial development of local productions, etc. In this first definition, functional polycentricity is thus closely related to the notion of functional specialisation, suggesting potential cooperations between complementary cities.

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A second definition of functional polycentricity adopts a more dynamic approach of urban and regional systems. Functional polycentricity is no longer grasped through the study of the economic specialisations of cities, but can be understood as a description of the *functioning* of the urban system. The emphasis is thus shifted here from economic complementarity to exchanges between cities and regions or, statistically speaking, from location quotients to intra- and inter-regional flow matrices. In this latter definition, polycentricity refers to the intensity and the symmetry of relations between the different urban centres considered (exchanges of workers, capital, products, services, ideas, etc.). Here also, the relation between

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morphological and functional polycentricity is not a mechanical one: it is quite possible that nearby cities ignore each other and give priority to exchanges with other, more remote, regions. In other words, if the gravity models applied to urban systems can still partly explain the persistence of Christallerian patterns for some low-level production functions or for basic-level services, they account only very imperfectly for the exchanges happening in more globalised and upper-level functions. The network-type organisation of some global economic functions disconnects morphological and functional polycentricity (VELTZ, 1996). Two more criticisms result from these semantic distinctions with regard to European documents.

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Comment [Ludovic H10]: Toute cette partie sur le polycentrisme fonctionnel comme spécialisation économique et comme géographie des flux est un peu trop théorique je m'en rends compte un peu tardivement. Comme le papier est un peu long et que j'en parle dans l'article sur Paris, je pense que l'on peut sans hésiter le sabrer partiellement ou complètement. N'hésitez pas à jeter tout cela à la poubelle !

- Third and fourth criticism: proposals in favour of polycentrism presuppose first an  identity between urban networks and firm networks, and second that spatial proximity favours cooperation. A recent study conducted in the Flemish Region (CABUS, 2006) demonstrates that, if firms increasingly follow network-type organisations and develop inter-firm relations because of the growing externalisation of many functions, these networks do not mechanically follow the existing urban hierarchy and the topological proximity in morphologically polycentric regions. On the contrary, apparently polycentric structures can lead to exclusive or competitive rather than complementary patterns. Even when regional cooperation is proclaimed in political discourses, like in the cross-border Euregio Maastricht – Hasselt – Liège – Aachen (MAHL), policies are often much more competition-oriented than the rosy cooperation expressed in official documents would induce.  Even at intra-metropolitan level, it seems that firms located in the periphery of the Brussels-Capital Region, for example around the dynamic centre of the Brussels-National (Zaventem) airport in the Flemish Region, do not have

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other locations in the city itself (VANDERMOTTEN, ROELANDTS, AUJEAN, CASTIAU, 2006). In addition, the polycentric development inside the large Belgian central metropolitan area is set in a context of direct political competition between three different Regions of a federal State, without links of organic cooperation with each other, rather than as a mutually profitable planning strategy. The situation seems quite different in Paris, where some firms with downtown headquarters develop back-office cores in the periphery, especially in the new towns, as some banking institutions do (HALBERT, 2004). In South-East England, the development of offices in the periphery (in Reading for ex.) also affects high value-added APS functions that complements London-based headquarters (PAIN, HALL, POTTS, WALKER, 2006).

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- Fifth criticism: proposals favouring polycentrism states that it is in nearby cities' interest to specialize and to cooperate. Such a presupposition refers mainly to medium- or small-sized cities, that are supposed to succeed better within the international competition by developing specialised economic profiles. We argue that at least three situations have to be distinguished:

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(i) the case of well-performing small- and medium-cities, which strength lies in their advanced specialisations. These cities (or more precisely their firms or institutions) are often inserted into cooperation networks, but at a European if not worldwide level, thus by-passing proximity-based networks. Small- or medium-sized university cities belong to this category.

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(ii) the case of closely located small- and medium-sized cities, in which firms actually operate in clusters (see for instance, the Belgian Courtrai area or the northern Italian Brescia area or the Silicon Valley for variations in this category). In the present case, it is not the specialisation of cities, but their insertion into a very specific chain and

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into proximity networks enabling cross-individual relationships that explains their economic success;

(iii) the case of polycentric urban structures, often found in mining and early heavy industrial regions, where neighbouring cities suffer from the legacy of obsolete structures and from a lagging development of their tertiary market sector, especially in business services. These cities often have weak functional linkages while mistrust is common as they are forced to compete in order to attract the same kinds of limited investments and public aids. These cities would draw more benefits from developing economic niches in direct connection with nearby metropolises and consequently reducing their Jack of higher level services, as might do for instance in France the cities of the Nord-Pas-de-Calais former coal basin with Lille metropolis, or Charleroi with Brussels city-region.

- Sixth criticism: proposals favouring polycentrism presuppose that remetropolisation and economic globalisation should lead cities to specialise. In fact, the most performing metropolises tend to have an economic structure that is predominantly diversified and follow a general convergence dynamic between large city-regions (CABUS, SAEY, 1997). To a certain extent, functional linkages between major cities follow what has already been observed with international trade: the share of complementary goods is decreasing (KRUGMAN, 1991). The convergence of global city-regions economic structures is also verified in terms of the very image they wish to market to the rest of the world. Benchmarking practices conducted by international offices probably encourage a homogenization of cities' urban and development policies.

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DOES MORE POLYCENTRICITY BRING ANY ADVANTAGES?



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We address this question regarding the role cities and regions play in the development of an efficient and sustainable economy, and not from the point of view of the provision of administrative or households-oriented services throughout a territory. The question can be answered in three complementary ways:

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(iii) does more polycentricity lead to a more sustainable development?

Economic efficiency. According to our computations (VANDERMOTTEN, ROELANDTS, CORNUT, 2006), the correlation between the level of polycentricity and the level of development, as measured by the GDP/inhab. is not significant at all (r near 0), as well at the scale of the States as a whole as at the scale of macro-regions, dividing the big States in units of more or less 10 millions inhabitants. However, a small advantage is registered to the most monocentric countries and macro-regions in terms of economic rates of growth on the long term: $r = -0.52$ for the period 1980-2002 at the scale of the States and -0.42 at the scale of the macro-regions. This results not only i) from economic globalisation processes reinforcing the most accessible and well-integrated economic cores of world economic networks (SASSEN, 1991; VELTZ, 1996; TAYLOR, 2003), but also ii) from changes in firms' organisations (outsourcing, just-in-time practices, team working, higher skills level requirements) that increase the interest for more central locations (face-to-face requirements are often acknowledged as crucial in interviews with APS professionals). However, economic success is dependent on so many factors that the weak statistical correlation between economic

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growth and monocentricity should not be taken as evidence to promote monocentrism by EU policy-makers and spatial planners,

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Spatial equity. The spatial distribution of GDP per inhabitant is more homogeneous in the most polycentric countries and macro-regions (VANDERMOTTEN, ROELANDTS, CORNUT, 2007). However, the statistical correlation is here again weak, even if statistically significant ($r = 0.42$), and depends on the size of the statistical spatial units that we used to appreciate spatial (un)equity (NUTS 3), which tend to arbitrarily isolate major city-centres from their suburban peripheries. One has also to take into account that European statistics doesn't weight regional GDP values by an internal parity of purchase power correction, which should imply reducing the real GDP in the most central monocentric regions, where real estate and retail prices are higher. Moreover, the weak statistical correlation vanishes when available income per inhabitant is preferred to GDP data. Income per inhabitant is more efficient to grasp effective social equity as it takes into account wealth transfers happening between cities and regions either through public expenditure and social revenues, or via expenses made by commuters and during temporary migrations (secondary residences, family, business, leisure, week-end or longer duration tourism) outside the cities and regions where the product is first created (BEHRENS, 2003a, 2003b; DAVEZIES, 2005).

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Sustainable development. Even though we still need more detailed examination of this issue, which is not examined in-depth in the literature, it is not a priori clear how the environmental burden is higher in a more concentrated system than in a more scattered one: the densification and the large size of cities favour for instance public transport against the use of individual transport modes and reduce the risks of ecological fragmentation.

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In conclusion, nothing allows us to significantly confirm that 'a more polycentric urban structure will contribute to a more balanced regional development, to reducing regional disparities, to increasing European competitiveness, to the fuller integration of European regions into global economy, and to sustainable development' (NORDREGIO *et al.*, 2005) (and more, *a fortiori*, to establish causality relationships). One can even go further by wondering how so many objectives could be combined without raising any contradictions ?

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POLYCENTRISM : A CONCEPT FOR EUROPEAN-WIDE COOPERATION ?

If theoretical presuppositions in favour of polycentrism seem hardly justifiable and if empirical observations do not confirm its interest in terms of planning objectives, why is it so widely accepted at EU level ?

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One of the main initial concerns of EU regional development and spatial planning policies (even if the latter does not fall in the formal Community competence) has been territorial cohesion. It was therefore tempting, in order to achieve this purpose, to imagine that the development of transports, and above all ICTs would result in 'the end of the space', as implicitly suggested by Castells (CASTELLS, 1989), just like the disappearance of the Soviet system was considered by some as the 'end of history' (FUKUYAMA, 1992). Following the already old 'global village' theory (McLUHAN, 1964), there was a diffuse feeling that everything might be done from almost anywhere thanks to the integration into information networks enabled by ICTs. In reality, the development of new telecommunication technologies and the globalisation of the economy have deepened spatial disparities and the comparative advantages or disadvantages of spaces at different scales (this had already been

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Comment [Ludovic H16]: Je ne suis toujours pas d'accord sur ce point. Avant de soumettre cet article à proposition je souhaiterai si vous souhaitez continuer à citer Castells que vous me précisez où il fait référence à la fin de l'espace. Les travaux que j'ai lu de lui ne disent pas ceci.

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the case previously with other major progresses in transport and communication: railway networks enabled the integration of national markets in the 19th century and consequently increased inter-regional disparities by comparison with the pre-industrial and largely self-sufficient rural economies). Today, access to ICTs and globalised communication networks is considered in the literature to contribute to increasing spatial differentiations. This is true between peripheral and central countries, but also within 'central' countries where the economy and its command functions are always more concentrated in major centres where accessibility is highest, thanks to telecommunications infrastructures, air transport, high speed trains and, a little paradoxically, because easier face-to-face contacts. The increased efficiency of transports accentuates 'tunnel effects', to the detriment of intermediate cities and regions, particularly those located in scarcely populated areas or plagued by early industrialisation's negative effects. At an intra-regional scale, this is also true within metropolitan areas, between the connected spaces and those which are not (see GRAHAM, MARVIN, 2001 at 'splintering urbanism' hypothesis and COUTARD, 2002 for an answer and a discussion).

Today, the discourse on national cohesion, which was in line with a context of Keynesian regulation and pro-active State spatial planning policies has lost ground in front of a dominant discourse on territorial competitiveness, following a more neo-liberal political rationale of economic deregulation which incidentally tends to value the credit given to the supra- and infra-national levels (the 'State rescaling', according to BRENNER, 2004). This shift did not alter the political opportunity to promote polycentrism at EU scale: indeed, such spatial planning policies ensure that in spite of decreasing public aids, each city still has a chance to benefit from EU regional/urban policies as long as aggressive promotional urban policies are implemented. The 'winners' will be living proofs of the advantages that can be drawn from a dynamic urban strategy while losers will have to incriminate their own insufficient efforts.

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One might argue that if polycentrism is so seldom questioned as a legitimate EU political project, it may not be so much because of its supposed efficiency in the pursuit of European objectives - which we have shown is not demonstrated -, but because it is a tool that can favour the participation in and support for a common European project by local, regional and national actors. 'Political polycentrism' thus results from the long quest for a relative consensus, or at least the illusion of a possible consensus in which the interests of each particular territory, be it nations, regions or cities, could be taken into account. It refers to what could be defined as a 'polycentrism of support', which is defined as the possibility that different decision levels can support a project for the European space, in which they think they can find their place, both within the horizontal relations they have established throughout the European territory, and within vertical relations between the different levels of power, from local to national. Beyond scientific talks on the virtues of polycentricism, the underlying logic might have much less to do with morphological or functional polycentricity and much more with politics.

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CONCLUSION

The present reflection does not intend to vainly oppose the virtues of monocentrism against the failures of polycentrism, or inversely. Urban systems are first of all products of a long history in which current dynamics are but one of already many superimposed layers. Empirical observations show that small territories, sometimes lacking any big city, can be highly innovative and remarkably succeed in the global networked economy. If externalities bound to territorial specialisation can favour innovation, it appears nonetheless that, overall, it is the largest metropolises that are most efficient in today's economy, because of i) their

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diversified productive system, ii) the variety, depth and skills of their human capital, and iii)
the concentration of technological research (GREUNZ, ).

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
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Monocentricity and polycentricity do not seem to have much to do in this regard. The Irish monocentricity does not rule out a very competitive economy, thanks among other factors to a high level of labour education, and does not prevent the simultaneous economic development of smaller cities in the country. Inversely, the Walloon polycentricity has not prevented the region's decline. Neither should polycentricity be mixed up with territorial networking, since the scales of the latter are multiple, up to world level.

Comment [Ludovic H21]: Je ne comprends pas le lien avec la phrase précédente. Est-il nécessaire de garder cette phrase ?

We must therefore wonder about the foundations of what is presented – in our opinion  excessively – as a major benefit and a crucial condition to the achievement of the 'most competitive economy' in Europe. As a political project, we see polycentrism as a strange hybrid between two competing approaches for the future European space, i.e. regulationist vs. neo-liberal. This synthesis is used by the EU to plead in favour of a common planning policy. The main thing is thus perhaps not so much the content of the policy than the possible partnership that might come out of it. This is maybe the reason why polycentrism is so rarely questioned, insofar as it keeps the advocates of the two views  of Europe's future satisfied, while pretending to give pledges to the peripheral areas with a political weight.

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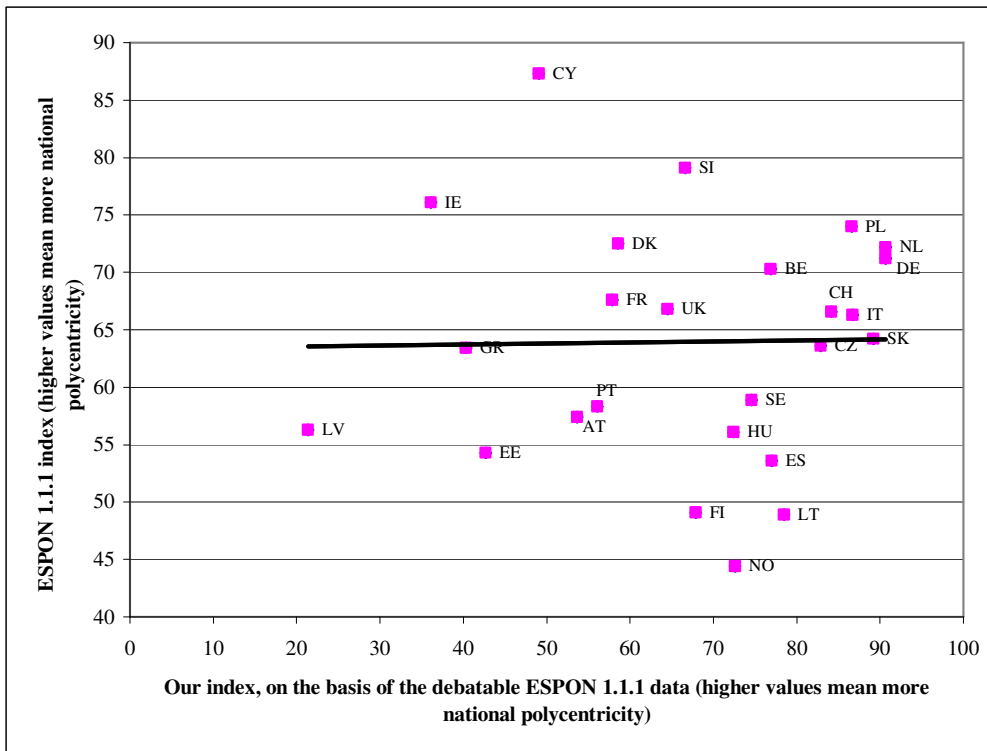


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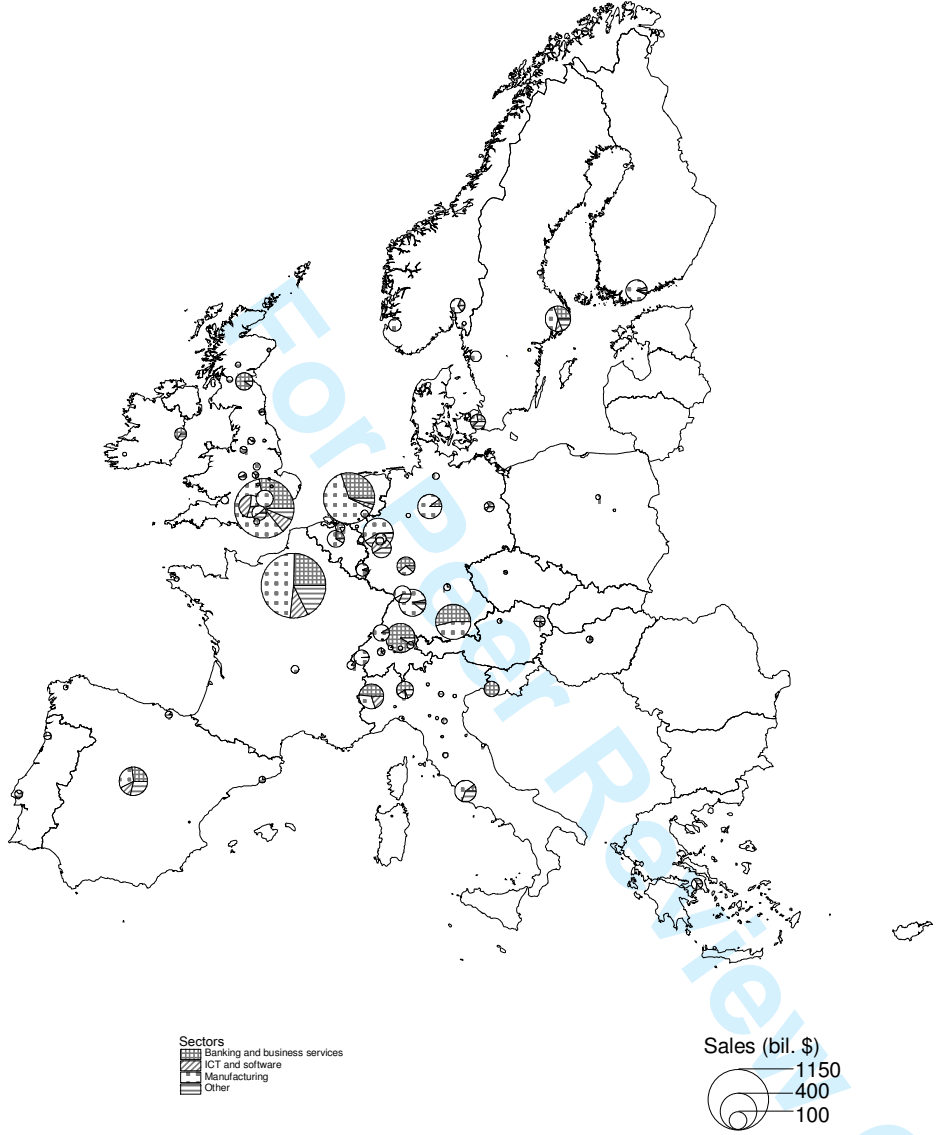


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 Christaller's theory is to spatial planning what Keynes's is to Fordism.

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