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Learning from Conceptual Flow in Regional Studies: Framing Present Debates, Unbracketing Past Debates.

The field of regional studies is characterised by intense, even frenzied, conceptual flow. Did yesterday's discussion focus on 'Learning Regions' and 'untraded interdependencies', today the debate has moved on to 'knowledge communities' and 'buzz' (Henry and Pinch, 2000, Bathelt et al., 2004). As explored in an earlier paper, such conceptual flow can be understood in relational terms (LAGENDIJK, 2003). New concepts emerge as elaborations, variants or opponents of (combination of) current concepts, triggered by moving insights, empirical contributions, and changing academic practices. In regional studies, as well as in the broader field of economic geography, conceptual flow is triggered and inspired, in particular, by its engagement with other subfields of social science. Where in the past many ideas were drawn from radical political economy and institutional economics, more recently inspiration was taken from meso-level sociology (networking, embedding) and cognitive studies (knowledge creation and absorption). Currently, leading scholars in the field are pursuing new lines of conceptual development through advocating alliances with other disciplines. PECK (2005), for instance, argues that economic geography should develop a better understanding of the differentiation between, and spatiality of, markets and market economies through a dialogue with social-constructionist macroeconomic sociology. In furthering a 'relational turn' in economic geography, YEUNG (2005) forges links with relational perspectives on power and organisations. DICKEN (2004), in his plea to geographers to become much more involved in the debates on globalisation, propagates a stronger dialogue with 'outsiders' ranging from political scientists, scholars in development studies to students of climate change.

Yet, however compelling and visionary the arguments, the permanent call for outreach is also worrying. As recounted and further explored in my previous analysis (LAGENDIJK, 2003), critical observers have noted how the ongoing absorption of 'external' ideas and concepts has tended to result in rather fuzzy conceptualisations and sloppy translations of 'external' debates. In the words of Peck (2005: 4), "[t]he restless and fast-moving nature of economic geography means that the deeper antecedents of 'imported' theories are often only fitfully explored". What is troublesome, in particular, is the practice common in the field to advocate new perspectives or 'turns' (institutional, cultural, relational, etc.) by discursively weaving together rather diverse threads of reasoning taken from rather diverse domains, including institutional approaches, meso-level sociology, strategic management approaches and critical political and cultural studies. Not only does this often happen in quite a loosely associative, and strongly eclectic fashion, it also appears to be accompanied by a poor acknowledgment of previous debates and accomplishments in our own field. Rather than engaging in a refinement and critical empirical assessment of established concepts, the debate is driven by the appeal exerted by other more or less 'grand' ideas, concepts and alleged 'turns'.

Against this background, this paper embarks on a historical review on what MOULAERT and SEKIA (1999) call the family of 'Territorial Innovation Models' (TIM) in the regional studies literature. This is presented in Section Three. The core question the paper seeks to answer is, what we can learn from this genealogy in the light of what are considered the challenges and shortcomings of today's debate. Whereas my previous paper drew conclusions in terms of research practice, the current paper aims for more substantive conclusions. A follow-up question is, how should we channel, in substantive terms, our inclination to reach out for external debates and ideas? These two questions will be addressed in Sections Four and Five respectively. Obviously, restrictions of space and of other nature necessarily make that the account related here comes with various kinds of limitations and biases. The story should be seen as the outcome of personal involvement in, and critical reflection of, the field I have

been working in for many years. While much effort has gone into tracing conceptual development and relations in the literature, the result is inevitably a stylised and subjective presentation of a very diverse, rich, complex, but sometimes irritatingly fuzzy and incoherent debate. To put the study in context, the next section will shed light on the methodology used.

ELUCIDATING THE GENEALOGY OF THE 'TIM' FAMILY

What accounts for the continuous roll-over of concepts in regional studies? In a few decades, the literature has shown the emergence of a series of prominent concepts like 'industrial districts', 'new industrial spaces', 'innovative milieux', 'regional innovation systems', 'learning regions' and 'Regional Worlds', amongst many others. Is it a matter of academic practices, of substance, or both? BARNES (1996) primarily points at internal processes. In his view, the history of economic geography can be characterised as the coming and going of metaphors and metaphorical practices. Barnes explains this evolution in terms of fashions, hypes and performativity. Moreover, most of these metaphors are drawn from other disciplines, which raises concerns about the disciplinary identity of geography: "And for us as geographers, this means also that we need to be self-conscious about the nature of geography, for we require metaphors that illuminate the geographical organisation, not the imagination of sociology, economics, or physics." (Barnes, 1996: 60). In another authoritative review of the field, SCOTT (2000: 34) also stresses the evolutionary nature of academic development. In general, he proposes "a conception of knowledge as an assortment of relatively disconnected (but internally reasoned) fragments, partially formed constellations of ideas and attitudes that are picked up, worked on for a time, then pushed aside again as the tide of social change sweeps along." In contrast to Barnes, he attributes conceptual shifts primarily to external dynamics. It is not just a change in academic fads, but fundamental shifts in the way society and the economy function that call for new concepts. Without denying that external influences may have a considerable impact on conceptual shifts, the first part of this paper will largely focus on the internal dynamics accompanying the TIM genealogy. The key question is how particular concepts, assisted by notions and interpretations of societal and economic change, open the window for new concepts, and what traces they have left in the ongoing debate on regional development.

About the method employed, the basic material for the study consists of what can, in hindsight, be considered as seminal contributions in introducing and discussing new ideas, complemented by key follow-up and review articles. The reading focused, in particular, on how concepts are positioned in the wider debate, notably through relations with other concepts. Such relations can be of different kinds. They can be vary from supportive, in the sense of providing substance, inspiration or endorsement, to adversary, by representing the old, or alternative view. Moreover, much emphasis has been paid to how, through the building of relational webs, the key spatial metaphors of the TIM-family, through a series of intermediate concepts such as 'institutional thickness', or 'untraded interdependencies', connect with concepts from other domains such as 'embedding' or 'tacit knowledge' (cf. LAGENDIJK, 2003). In a next step, and admittedly in a highly stylised fashion, core clusters of concepts were identified. This has resulted in three groups, labelled under the headings of 'structural-organisational', 'institutional-conventional' and 'cognitive' perspectives. The result of the analysis is summarised in a conceptual map (Figure 1). Besides core concepts at different levels and the clustering, the map shows the most prominent supportive relations between the concepts (marked by figures indicated in relevant explanatory sections below).

PHASE ONE – STRUCTURALIST-ORGANISATIONAL PERSPECTIVES

In her seminal paper *In what sense a regional problem*, MASSEY (1979) argues that regional development needs to be examined in the light of changes in the organisation of production and the overall economic system. She thus ushers in a decade in which the rapidly growing interest in regional dynamics is based on what can be called a structuralist-organisational perspective on spatial-economic development, culminating in STORPER and WALKER'S (1989) Opus Magnus *The capitalist imperative*. Where previous structuralist approaches interpreted

regional development primarily in terms of 'spatial fixes' accommodating the crisis tendencies of capitalism [1][2]. Marxist thinking is now combined with (neo)institutional and evolutionary concepts of economic organisation and technological change. A key question becomes how processes of capitalist accumulation and capitalist investment affect time- and place-specific forms of organisation of production, and thereby the fate of regions. Also the macro dimension is perceived through a more institutional lens, through a liaison with the Regulation Approach [3]. Accordingly, the survival and development of capitalism is seen as depending on the creation of temporarily stable institutional configurations that, through securing a balance between investment, production and consumption in time and space, mediate the intrinsic antagonisms of capitalism (Grahl and Teague, 2000). In particular, the allegedly current shift between two regulatory regimes, namely that between 'Fordism' and 'Post-Fordism' inspires the organisational perspectives on regional development [9][10]. Two variants will be discussed here in more detail.

The Californian School

Within geography, the structuralist-organisational perspective on the region has three main sources of inspiration. First, a network of French scholars nurtures a debate, still ongoing, in which structuralist notions drawn from the Regulation Approach are confronted with micro- and meso-level concepts of spatial organisation, as exemplified by the French Proximity School (Benko and Lipietz, 1998). Second, under the heading of the 'localities debate', a group of British geographers examined the way regions, as complex sets of local contingencies, are embedded in wider divisions of labour and subjected to global capitalist forces (SCOTT, 2000). Third, a group of American researchers, developing in what has come to be known the so-called Californian School of economic geography, examines regional dynamics, notably the rise of 'New Industrial Spaces', in the context of global processes of 'geographical industrialisation' (Scott, 1988, Storper and Walker, 1989). All three strands have made important contributions to the field of regional studies, as will be shown below. Since it facilitated a remarkably comprehensive and ambitious theoretical project in the field, the discussion here will centre on the Californian School.

The Californian School's ambitions are reflected, in particular, in its theoretical breadth. Its theoretical conceptualisation starts with a combination of a technological interpretation of capitalist transition, based on Schumpeterian evolutionary economic thinking and Long Wave approaches [6] with the historical perspective of the Regulation Approach. Capitalism is characterised by unpredictable technological development paths, punctuated by major transitory periods, and embedded in, as well as impinging upon, evolving socio-spatial organisational forms of production [5]. Hence regions acquire a double meaning. On the one hand, regions are the *products* of industries that, through a process called 'geographical industrialisation', shape their own conditions of production, including markets for labour and specialised inputs, and dedicated regulatory forms [9][13]. Geographical industrialisation is strongly path-dependent. Crucial is the transition from initial growth to stabilisation. Where initially upcoming industrial trajectories may offer an open window of opportunity for regions to catch on, further development are generally restricted to 'first mover' regions. On the other hand, regions represent *sites* of innovation that may induce fundamental shifts in technological development, and thus the rise of new industries. Regional innovative capacity stems from, in particular, the advantages accruing from the growth of vertically disintegrated forms of production, resulting in external economies and economies of scope. Interestingly, to explain the advantages of vertical disintegration, the Californian School invokes (Neo-)Classical economic notions derived from Sraffa, and Coase and Williamson, amongst others [4][8]. One of the key ambitions is to integrate the pervasive, but essentially static, logic of transaction costs economics in a broader, more dynamic perspective on economic development. In the words of STORPER and WALKER (1989: 137), "The fundamental insights of Coase and Williamson must be set within more realistic theories of technological development and competitive behaviour to generate a more robust view of the dynamics of industry division and redivision."

How has this ambitious contribution performed? In hindsight, the results appear to be mixed. A powerful element is the presentation of the region as a possible propulsive engine, or even as an dominant mode of production, placed within the context of technological-spatial trajectories of industrial development. Regionally embedded modes of 'flexible accumulation',

like 'New Industrial Spaces', are manifestations of how growth-induced, intensified competition and radical changes in products at a global scale induce a radical overhaul of the spatial organisation of production (Storper and Walker, 1989). This lives on in the notion of the concept of 'neo-Marshallian nodes' (Amin and Thrift, 1992, Henry and Pinch, 2001) [35]. Yet, the way the overall theoretical argument is constructed, especially the combination of evolutionary, regulationist and neo-classical thinking evokes considerable criticism. Various authors point at the tensions and even inconsistencies in the overall argumentation due to its eclecticism (Barnes, 1996, Gertler, 1992). Another point of critique is that, despite the theoretical breadth and, in many parts, the high level of sophistication, the ideas remain too grand and schematic, and lacking in a sensitivity to differences in place and time, between regions, sectors, transactions, networks, and agents (Amin and Thrift, 1995b). As we will see below, it is the issue of diversity that comes to dominate the agenda of economic geography in California, and elsewhere, later on.

The 'second industrial divide'

Another seminal contribution to the debate on new regional modes of production triggered by structural shifts is provided by Piore and Sabel's work on the 'The second industrial divide'. A central point in 'The second industrial divide' is that the crisis of Fordism can be solved by institutional responses either at the global level, through a kind of global Keynesian demand management, or at the local level, by instigating a kind of permanent innovation underpinning a dynamic, flexibly specialised form of organisation of production, and professionalisation of the workforce. In hindsight, it is only the second solution that has materialised, notably in the form of 'industrial districts' (IDs) and in the form of high tech districts across the globe [14]. These districts are able to avert problems of overaccumulation and overinvestment through the ability of rapid and efficient redeployment of resources and labour between different activities, and a strong inclination to innovation and investment. Flexibility, in turn, is enabled by a strongly disintegrated production structure, combined with effective forms of communication and co-ordination through socially embedded networks [18][12]. Social institutions of different kinds, formal and informal, help to shape local networks and collective strategic capacities. Industrial districts thus present sites of embedded 'micro-regulation' [7][11]. (Piore and Sabel, 1984: 269), in which the economy and community are deeply intertwined. So where the Californian School puts technological dynamics at the centre of the analysis, here the perspective is primarily social-institutional, in which technology is viewed as cardinal, but essentially instrumental. Technology is not associated with the power of capital, as in Marxist approaches, nor is it a primary evolutionary force, as in the Californian School. Instead, technology is considered to be a potential ally of labour seeking to develop its own competitive position, a view that chimes with the readings of IDs by Italian scholars: "In essence, this is what an ID is: a socio-economic vortex, a kind of 'permanent small industrial revolution', the transforming energy of which is imprisoned - like petrol in a combustion engine - in a form which, on the one hand produces products that are sold and on the other hand reproduces the fundamental socio-cultural relationships of the place" (BECATTINI, 2003).

In terms of conceptual development, the contribution of Piore and Sabel presents a vital turning point for the development of the 'soft' institutional approaches following below. Indeed, although the authors draw on regulationist thinking, and elaborate its conception of transition [5][10], the 'structuralist' legacy is rather slim. By narrowing the concept of regulation down to the level of local production, and presenting 'continuous innovation' as an universal solution to current problems of capitalism, the authors manage to write the macro- and a substantial part of the meso-economic level out of the story. As a result, the 'capitalist imperative' of the Californian School, with its emphasis on the interaction between technological, industrial and territorial trajectories, is replaced here by an 'innovation imperative', projected onto a single territorial level, namely the region. Moreover, the innovative region, notably in its district form, is depicted in highly sympathetic terms. The innovative strength of IDs stems from their character as a community of equals, in which the building of social institutions and networks is governed by a kind of 'yeoman democracy' (Piore and Sabel, 1984: 305). While the approach has generally been criticised for the way it oversimplifies historical and spatial developments in the organisation of production (GERTLER, 1992), it is this song of harmony that triggers a particularly hefty response from critical commentators (Lovering, 1999, Amin and Robins, 1990). Yet, it is this same song that turns into a popular refrain in the proliferation of 'soft' regionalist perspectives that follow below.

PHASE TWO –SOCIAL-INSTITUTIONAL PERSPECTIVES

While the interest in the innovative region emerges within the context of a structuralist-oriented debate on capitalist development, further conceptual development is driven by a different intellectual agenda oriented towards diversity and non-structuralist interpretations of economic evolution. In the words of AMIN (2000: 152): "(...) the interest in industrial districts draws on a much wider fascination with a new phase of capitalism that is human-centred, democratic, and regionally oriented. It is also part of a new theoretical project: understanding the socio-institutional foundations and evolutionary processes of economic life". More in line with a (neo)Weberian than a (neo)Marxist interpretation of capitalism (COLLINS, 1992), socio-institutional phenomena are seen as essentially constitutive of the economy instead of merely functional-regulatory (MACLEOD, 2001). Hence, what is foregrounded much more than before is that the role of institutions cannot be read off from larger structures and processes, but should be understood in the context of place- and time-specific socio-economic development. Agency, action, interaction, communication and reflexivity, set within a wider social-cultural context, make a fundamental difference to regional development trajectories. This increasing interest in the micro-meso dimension of economic development also had another major consequence, namely a shift in focus from spatial processes of *industrialisation* to localised processes of *innovation*. Alongside the turning point presented by the 'second industrial divide', three contributions stand out.

Collective learning and 'innovative milieux'

The shift from *industrialisation* to *innovation* is manifested, in particular, by the work on innovative milieu, advocated by the GREMI group (MAILLAT, 1996) [17][24]. The fundamental idea underlying this line of work is that, under advanced capitalism, innovation is based on the *interaction* between economic agents and supporting organisations, and that this interaction is wedded to its human and social, and hence territorial context (MORGAN, 1997). In the words of Lawson (1997: 3): "(...) the whole idea of collective learning is to identify and understand the processes by which locally based factors act to facilitate learning amongst the whole ensemble of local firms and organisations." In stressing the social-territorial embedding of innovation, the notion of milieu does refer to neither organisational structure nor environment, but to the territorially rooted elements underpinning the social-cultural, interactive and cumulative nature of learning [25]. Continuous interaction between economic actors, notably SMEs, combined with technically progressive values, result in the creation of *club goods* (CAPELLO, 1999), embedded in particular local groups and networks. In general, club good formation is encouraged in districts through high levels of resource and labour mobility, through which collective performance prevails over individual action [22]: "learning and resulting innovations are independent of conscious co-operation between single actors and are not attributable to the explicit strategy of individual local firms. It is in these senses that learning is collective" (Capello, 1999: 357).

The attention of the milieu approach for socio-economic interaction is embedded within a wider interest in technological change. Like the previous concepts of 'New Industrial Spaces' and 'industrial districts', economic evolution is understood in terms of technological trajectories [23], while the spatial understanding of technological change chimes with work on industrial districts [34]. What distinguishes the concept of 'innovative milieux' from other spatial concepts is its more specific articulation of the social-cultural basis of innovation, through the notion of collective learning, and its capacity to strengthen and exploit economic benefits from 'club goods'. Through this combination, the concept of 'innovative milieu' has shifted the focus away from issues of regulation and technological change, while still acknowledging the relevance of these notions, towards collective learning and its social and territorial embedding. Recent discussions have expanded this perspective in various directions. For instance, one core contributor to the debate, MAILLAT (1996) acknowledges the value of the milieu as an *implicit contractual framework* that, on the basis of a shared *cognitive set*, eases local collaboration and exchange. He also stresses the way regions absorb knowledge by being embedding in 'global' networks of exchange or *filières* (Crevoisier

and Maillat, 1991), thus focusing on the quality and management of *external* relations. The latter point will resurface in more recent debates, as we will see below.

Institutional thickness

While the milieu perspective featured, in particular, the significance of integrated yet diffuse spatial-organisational structures in bringing about, other authors focused more on what can be considered nodal points and strategic networks in such structures. To elucidate the way particular regions perform, Amin and Thrift (1995b, 1995a) draw from a variety of perspectives, notably socio-economics, institutional economics, and organisation theory [15][16][17]. They give birth to what will become another prominent concept in the debate: “it is to claim that social and cultural factors also lie at the heart of success and that those factors are best summed up by the phrase ‘institutional thickness’” (Amin and Thrift, 1995a: 101). Institutional thickness refers to a presence of a variety of economically active public, quasi-public and private organisations (research, training, business associations, etc.), and, specifically, the formation of bottom-up regional coalitions engaged in strategy formation. What the approach shares with ‘innovative milieux’ is the emphasis on embedding and networking, but in addition to the diffuse forms of interfirm networking characteristic for milieux there is emphasis on institutional webs formed between core organisations. It is through collective networking and strategy formation that regions manage, on the one hand, to nurture diffused entrepreneurship supporting collective learning [21], and, on the other, to strengthen the regional position in wider global production chains. The latter is primarily a matter of empowering. By strategically engaging with ‘global’ actors and processes, through liaising with large firms, creating nodal positions in chains of information, finance and trade, and through building technological and economic excellence, regions may turn into so-called ‘neo-Marshallian nodes’ in global chains (Amin and Thrift, 1992) [20]. In this emphasis on external positioning, ‘neo-Marshallian nodes’ present an elaboration of ‘New Industrial Spaces’. Where the latter is grafted onto a theory of technological evolution, ‘neo-Marshallian nodes’ refer to the institutional basis of economic control.

‘Institutional thickness’ adds an important, but in many ways ambivalent, component to the discussion, namely *strategy*, that can also be found in other ‘associationalist’ accounts of regional development (Cooke and Morgan, 1998). What emerges is the image of regions that, through conscious, coalition-based strategic action, endeavour to improve their global economic position. Amin and Thrift themselves depict coalition building as a bottom-up process, achieved through ‘negotiated governance’ (Amin and Thrift, 1995b). A question that remains largely unanswered, however, is how such local forms of governance relate to broader, national and global structures, an issue that will be taken up later. Another issue is what the deeper factors are underlying effective forms of innovative milieux institutional thickness – subject of the next perspective.

Conventions and Regional Worlds

So when is a regional milieu truly innovative? When does institutional thickness bring forth effective and inclusive regional visions and strategies? Prevailing institutionalist approaches are poor in identifying the deeper causes of good performance resulting from territorially rooted collective learning, and tend to functionalist or even tautological forms of explanation (Storper, 1997, MacLeod, 1999, Keating, 1998). For a full explanation, social interaction and institutions themselves need to be explained. In exploring this question, Storper had initially found inspiration in the transaction cost approach. Realising, however, that the concept of transaction cost is too narrow to elucidate fundamental differences in the organisation of production and the role of technical variation and change, he turns to the French perspective of the *Economie des conventions* for a broader explanation (Salais and Storper, 1997).

Conventions are core interpretative reference points in economic (inter)action (Salais and Storper, 1997), that guide social action and coordination in pragmatic situations (Grahl and Teague, 2000) [18]. Conventions emerge in a relational and path-dependent way, and involve ongoing reflexive and strategic (inter)action, including abundant interactive communication. It is through interaction that the identities of agents and groups, as well as rules of participation

are (re)shaped and uncertainties reduced: “social co-ordination is not a product of interaction among persons with given, fixed ‘portfolios’ of interests, but a product of the sequence of interactions themselves” (Salais and Storper, 1997: 296). *Economic* conventions bear, in a systematic way, on product quality, productivity, labour, supplier–buyer relations, communication and group membership, resulting in distinct ‘Worlds of Production’. Storper and Salais distinguish between four such worlds: the Interpersonal or Marshallian World, with emphasis on networking, the Market World, featuring strong competition between standard products, the Intellectual World, dominated by innovation, and the Industrial World, characterised by mass production. Worlds of Production are spatially embedded, and often in regional agglomerations: “the conventions which underlie innovative performance and specialisation are in some cases highly specific to discrete sub-national regions, places in which certain learning based real worlds of production are concentrated, with associated action frameworks and conventions rooted in the regional population” (Salais and Storper, 1997: 63). Especially the Interpersonal World and parts of the Intellectual World give rise to the emergence of ‘Regional Worlds’ of collective learning [26][27]. In such territories, conventions form ‘relational assets’ or ‘untraded interdependencies’ underpinning regional competitiveness, comparable to the ‘club goods’ mentioned above. Building institutions that nurturing such assets should be key objective of regional policy (STORPER, 1997).

PHASE THREE –THE RISE OF COGNITIVE PERSPECTIVES

Institutional approaches, notably the ‘conventions’ perspective, emphasise the reduction of uncertainty as a key condition for collective learning and investment, and hence prosperity. Cognitive approaches take a step back, and focus on the way economic agents scan, interpret and use information in economic processes. Following such an interpretative approach, variation in economic performance stems primarily from variations in how agents process information and knowledge, and put knowledge into practice, individually and collectively (i.e. through collective learning) [28]. It is not only the question of how to deal with the uncertainties involved in a certain economic challenge that counts, but also the very *identification* and *understanding* of economic problems and challenges themselves, and of the intelligence necessary to deal with those. Economic organisational forms, like firms, business networks, and industrial districts, should be understood as *interpretative systems* driven by economic incentives (LOASBY, 1998). Such systems are, in two ways, responses to human cognitive capabilities and limitations. First, they shape and align cognitive frames of economic agents, inducing *integration*. Second, they sustain ‘cognitive divisions of labour’, a feature already identified by Adam Smith as a key driver of *specialisation*. Together, cognitive structures define a system’s ‘absorptive capacity’ in a world characterised by a constant and abundant flow of economic information (Cohen and Levinthal, 1990).

The development of cognitive approaches has been boosted, in particular, by the conceptualisation of a knowledge cycle by NONAKA and TAKEUCHI (1995). This cycle is characterised by two dynamics. On the one hand, agents absorb knowledge either by the *internalisation* of codified knowledge, with the help of tacit knowledge earlier acquired, or through *socialisation* involving the exchange of tacit knowledge. On the other hand, agents contribute to the knowledge flow either by converting tacit into codified knowledge (*externalisation*, e.g. patents) or by *recombining* knowledge of various types to make new knowledge. Nonaka and Takeuchi thus provide a framework that sheds light on the articulation of tacit and codified knowledge, and models the flow of knowledge between single systems like firms or regions, and the outside world. This articulation and flow is generally nurtured in regions as shared context of knowledge creation, defined as ‘ba’ (Corno et al., 1999).

Various authors regard the present nature of knowledge circulation as a key factor behind the continuing significance of the region. The region provides a suitable scale and place for hosting ‘knowledge communities’ (LOASBY, 1998) or ‘cognitive laboratories’ (LOMBARDI, 2003) engaged, in particular, in *socialisation* and *recombination* [30][29]. Due to spatial proximity and social embedding, regions help to reduce cognitive distances between different actors and groups, facilitating shared practices and collective strategy-making. Reduced cognitive distances within a proximate setting result in what STORPER and VENABLES (2004: 358) call

'buzz' stemming from face-to-face (F2F) communication, since: "F2F communication [is] not just an exchange; it is a performance, where speech and other kinds of actions, and context, all come together to communicate in a very complex way on many different levels at the same time." For the more tacit part of the knowledge cycle, advanced communication technologies do not present a suitable alternative for F2F encounter. Even networks, near or far, are not sufficient. Knowledge dynamics, notably internalisation and socialisation, is nurtured by *atmosphere*, i.e., to use Marshall's famous phrase, on what is 'in the air', conveyed by local 'untraded interdependencies' and conventions [32]. BATHELT et. al. (2002: 11) define buzz as "the information and communication ecology created by face-to-face contacts, co-presence and co-location of people and firms within the same industry and place or region." Such internal buzz is matched by 'network pipelines', i.e. systematic linkages with external information sources, supported by gatekeepers, boundary-spanners, and a variety of scanning, filtering, learning and disseminating routines. Regions can thus acquire the "essential tools to assimilate and employ potentially valuable knowledge in a commercially successful way which resides elsewhere and is readily available through pipelines", and hence improve its 'absorptive capacity' to collectively solve problems and innovate [31].

In many respects, the 'knowledge community', 'cognitive laboratory' and 'buzz and pipeline' metaphors shed more, and a sharper, light on the particular dynamics underpinning the shaping of 'industrial districts' and 'innovative milieux' [33][36]. In particular, it has replaced the focus on localised club goods and relational assets, to an interest in the development of social groups, the way they create and share knowledge, and the kind of collective strategies they develop (cf., LISSONI, 2001). Yet, recent studies exploring cognitive aspects of the district phenomenon as well as knowledge circulation also tend to question the role of proximity and the region, by pointing at the fact that shared practice and knowledge circulation primarily depend on *relational-organisational* proximity, and not on physical propinquity (Rallet and Torre, 1999). Only in certain cases there may be a match: "Geographical proximity is effective only if it coincides with the existence of organisational relationships" (Rallet and Torre, 1999: 375). In their recent network perspective on the city, AMIN and THRIFT (2002: 62, my emphasis) state "If there is anything 'local' about such usage of tacit knowledge, it is as an *organisational* endowment, not as a *place* property". What this calls for, hence, is more insight into the spatiality of *relational-organisational* proximity underpinning the development in knowledge communities and networks. Some authors, like Loasby and BROWN and DUGUID (2001), argue that for complex forms of interaction face-to-face interaction remains paramount. Even in a digital age, regions thus remain prime sites for the development of knowledge communities and networks. Others call for a broader perspective, in which the development of knowledge communities and networks is perceived as a more complex, multi-level process (cf., DICKEN, 2004). A key problem we need to address then, according to Morgan (2004), is the way the literature tends to juxtapose organisational and physical proximity are as separate, reified entities. Instead of pitting one against the other, geographers should focus on how the formation of socio-economic relations manifests itself in spatial and organisational ways, on how these dimensions are articulated and intersected.

TAKING STOCK: REAPING THE FRUITS OF THE 'TIM' GENEALOGY?

This short story of conceptual flow, admittedly highly stylised and truncated, illustrates the high level of theoretical dynamics in the field of regional studies. The result is not only an impressive series of inspiring concepts; the story also reveals how underlying perspectives and orientations have continually shifted. In particular, there has been a tendency to move from what can be characterised a macro-meso orientation, grafted onto structuralist thinking, to a meso-micro orientation, more constructivist and focused on the social and cognitive capacities of economic agents. It is important to note the explicit use of the word *orientations*. What characterises geographical thinking is a continuing ambition to be sensitive to both 'grand' shifts and local particularities, coupled with an almost unconditional acceptance of eclectic forms of theorising. The debate, therefore, has always tried to find its way between various levels of explanation. Yet, what remains a relevant question is what we have won, and potentially lost, in three decades of conceptual flow. Let's try to take stock.

A key feature of the conceptual genealogy is the gradual move away from structuralist and functionalist perspectives, chiming with a broader tendency in social science. Functionalist interpretations of local phenomena, where the latter (e.g. New Industrial Spaces) were explained primarily through the way they fitted in larger schemes determined by structural forces (e.g. capitalist forms of geographical industrialisation), were replaced by constructivist perspectives. As illustrated, in particular, by Storper's shift from 'capitalist imperative' to 'conventions', regional studies focused increasingly on what happened at the regional level, with special attentions for the role and shaping of 'soft', relational assets. The perspective shifted from what can be roughly characterised as elucidating 'meso' (e.g. industrial spaces) through 'macro' (e.g. capitalist forms of industrialisation) to elucidating 'meso' (e.g. Regional Worlds) through 'meso' (e.g. relational assets, conventions, institutions)', supported by a strongly inclusive, consensual and proactive view of the region. In theoretical terms, this double 'meso' focus has had two consequences. The first one was an increasing convergence of the phenomenon to be explained (regional performance) and the explaining factors (regional milieu, assets, conventions etc.). This posed problems to theoretical work as well empirical investigation: how to determine cause and effect? The second consequence was a bracketing of the broader (macro) context of regional development. The resulting picture was that of an internally richly endowed region pitted against an single 'world outside' characterised by fierce competitive struggle and strong forces of 'ubiquitification' (Maskell and Malmberg, 1999). 'Unique' regions were thus forced to constantly innovative in order to survive in a harsh external environment. This view further propagated the proactive, joined-up image of the region initially portrayed by Piore and Sabel. Yet, as various critical observers have repeatedly stated, it also propagated what can be seen as an increasingly inward-looking, *parochial* perspective on regional development (Dicken, 2004, Lagendijk, 2004, Lovering, 1999)?

So how have these issues been addressed? The first issue posed a serious challenge to the research agenda. According to various critical observers, regionalist institutionalist approaches faced difficulties in identifying the deeper causes of good performance resulting from territorially rooted collective learning, tending to functionalist or even tautological forms of explanation (Storper, 1997, Gordon and McCann, 2000, MacLeod, 1999, Keating, 1998). A full explanation required social interaction and institutions themselves to be explained. Storper's own work on conventions went some way to address this problem, although it did not produce a full-blow theory of convention development. As discussed before, the key response to this challenge has been a further inquiry into the interpretative and cognitive aspects of socio-economic interaction, learning and innovation, zooming in, increasingly, on the micro level of knowledge creation, sharing and use. This, in turn, has been the major drive behind the recent development of the cognitive approaches. Through embarking on a cognitive turn, hence, the debate shifted towards a clarification of 'meso' (regional performance) through 'micro' (cognition, entrepreneurship).

The initial response to the second issue, the tendency towards of parochialism, has been the suggestion to broaden the research agenda by paying more attention (again) to the 'non-local' (OINAS, 1999). Bathelt et. al.'s 'buzz and pipeline' perspective, for instance, calls for the right mix between 'local' and 'non-local'. One could question, however, to what extent bringing 'non-local' factors on board helps to counter 'parochial' tendencies. In Dicken's (2004), view, the 'non-local' involves a complex, layered world in which the local just forms one chain as a node in a variety of networks. An important dimension in this broader world is the shaping of global production networks. Just adding a 'non-local' dimension to the analysis may not be sufficient to shed light on this complexity.

Moreover, a more fundamental question is whether the key to addressing the problem does not rest with undoing the *theoretical* bracketing of the broader context of regional development, through a reinvigorated political economic approach (cf. MACLEOD, 2001). Although, often in the background, the present regionalist literature continues to invoke a link with the notion of changing broader economic and institutional settings due to shifts towards Post-Fordism and flexibility, the understanding of such 'regulatory' issues seems to be perverted. What has happened, in shifting from macro/meso to meso/micro, is that the original regulationist consideration of the institutional conditions of *capitalist* survival has turned into a

fascination with institutions, organisations and networks buttressing *competitive* survival, projected upon the region.

Confronted with this development, MacLeod (2001: 1156) confesses "to being particularly struck by the diminutive theoretical role played by the RA [Regulation Approach] in the recent round of institutionalist approaches, especially considering its key role in earlier debates around post-Fordism." Yet, our theoretical journey so far seems to suggest that this diminutive role does not so much ensue from an outright distancing from the Regulation Approach, but rather from a step-by-step slippage away from 'harder' political economic perspectives. From Piore and Sabel onwards, the region has obtained the status of a Postfordist 'superfix', able to address multiple regulatory dilemmas involved in the creation and distribution of economic wealth. This turn has allowed the regionalist literature to explore the region's virtues of flexibility, innovation and distinctiveness without having to pay detailed attention to its wider political-economic setting and context. In doing so, to quote LOVERING (1999) view, regionalists may have become "unwitting agents of the reconstitution of regional governance in Hayekian-liberal terms' (Lovering, 1999: 391). Although Lovering's critique targets, in particular, the translation of regionalist thinking in various policy-oriented concepts, such as 'Learning Regions', and 'Regional Innovation Systems', the present analysis suggests that it also applies to the more theoretical regionalist thinking. Indeed, what this move has allowed is a growing reconciliation of regional studies with mainstream economics and strategic management thinking, as manifested by the frequent citing of the work of Michael Porter.

While the recent interest in cognitive aspects has helped to shed light on deeper processes of innovation and economic development within regions, it has made the second issue of parochialism even more pressing. Indeed, by further concentrating on learning, the cognitive perspective may actually draw us closer to advocating an 'Hayekian' world driven by one basic ambition: processing information to innovate. In JESSOP's (2004a) view, it might make us an accomplice in the advocacy of the 'Knowledge Based Economy' as an hegemonic economic imaginary. The question becomes, how we can redress such theoretical slippage while preserving the valuable insights stemming from social-institutional and cognitive perspectives?

This review leads to two suggestions for our research agenda:

- The first suggestion concerns the way the subject of knowledge is examined. While the present interest in knowledge is understandable given actual economic developments, we should be careful not to go too far down the 'cognition' route. As GERTLER (2003) has recently argued, geographical research should focus on the social-institutional context of knowledge development and use, as shaped, in particular, through institutional foundations and underlying power relations. So it is cognition *in relation to* variations in institutional formations and endowments that should be central to the analysis, thus placing a 'micro' interest in a 'meso' context. Gertler also warns for an overemphasis on the role and significance of tacit knowledge, pointing at the significance of absorbing codified knowledge in boosting regional welfare, notably in non-core areas (Morgan, 2004, Lagendijk, 2000). In contrast to the argument that codified knowledge flows without friction and hence is 'ubiquitous', absorption capacities for codified knowledge vary widely, and are heavily dependent on cultural and cognitive factors
- Continuing this journey back, a next step may involve the embedding of a 'meso' interest in regional development in a broader 'macro' perspective focusing on the spatialised structures of capitalist market systems (Henderson et al., 2002, Dicken, 2004). An important debate is that on 'varieties of capitalism', shedding light on persistent heterogeneity in socio-cultural practices and institutions, in combination with an in-depth research on the role of the powerful *interconnections* between varying systems (PECK, 2005). Yet, instead of falling back on 'structuralist' forms of explanation, such an approach could draw from recent advances in relational perspectives, as will be proposed in the last section. These suggestions will be further explored in the next section.

CONTINUING THE GENEALOGY: LINKING THE OLD AND THE NEW

Students of regional development face a formidable task, as they aspire to unravel the intricate relations between the local and the global, the particular and the general, embracing the complexities of technology, organisations and territory (STORPER, 1997). For decades, to tackle the complexities of agency and structure and of multi-faceted and multi-level phenomena and processes, geographers have adopted, as we now call it, a *relational* perspective. Indeed, while recent contributions have explicitly addressed the role and significance of relationality in geographical thinking, one could argue that throughout the genealogy presented here, there has been an undercurrent of relational thinking (YEUNG, 2005). So, without advocating a relational *turn*, this section will explore how advancing a relational perspective can help to develop our research agenda. A key question is to what extent such a perspective may draw on 'old' elements from our genealogy, and which 'new' themes would be fitting to include.

A crucial point is to place relationality in the right perspective. While relational thinking has played a key role in geographical theorisation, this has generally had an ontological rather than epistemological connotation. Relationality is then manifested through the emphasis on networks, relational assets, interaction between the economic and non-economic, institutional thickness, the embedding of tacit knowledge etc. Yet, through such an ontological deployment, there has been a tendency to reify these phenomena, that is, to endow them with intrinsic causal powers. Underpinning the 'parochial' tendency in the debate, relational assets were simply equated with factors of regional success. Avoiding what Peck (2005) calls such a 'cartoon-like' geography requires that the role of regional phenomena is examined *in relation* to their specific contexts, in which this context is considered not as background but as *constitutive*. In the words of Yeung ((Yeung, 2005: 48): "As such, relational assets and institutional thickness are not necessarily the causal explanations of regional development, even though they are likely to be present in some developing or – in the words of Storper (1997, 44) – 'lucky' regions. Their causal links to regional development must be theorized in relation to their complementarity and specificity to particular regions in question."

Such relationality can, in a heuristic sense, be perceived in a 'backward', 'forward' and 'lateral' sense (LAGENDIJK, 2003). The *backward* side involves the way regional phenomena are constituted through a variety of interacting and structuring influences endowing them with a particular form and power. Regional conventions, for instance, are shaped and consolidated through the way ongoing interaction between local actors (business and non-business) results in mutually recognised rules of participation and identity. Similarly, institutional thickness emanates from the way multiple local organisations, businesses, public and other, mutually engage in collaborative practices. Importantly, such mutual engagement is facilitated and shaped by more 'generic' notions, scripts and techniques of regional collaboration, as they are relayed and supported through professional links, and policy networks and programmes (such as EU regional policy). The *forward* dimension refers to the way such relationally constituted assets bear on the region and its different segments, in relation to performances in other regions (cf. YEUNG, 2005): Which firms and sectors are actually benefiting from specific conventions and forms of institutional thickness; how does that compare to business and sectoral performance elsewhere? In a *lateral* sense, finally, relationality is manifested in the interweaving and interlocking of regionally embedded relational assets. Together, as conceptualised by Yeung, this dynamics shapes the region as a 'relational power geometry'.

By its capacity to link the level of agency with that of institutional developments, a relational approach is particularly well placed to bridge the micro-meso gap in regional analysis. Instead of endowing phenomena such as proximity and regional networks with inherent properties, a relational approach assesses their role by focusing on the way these phenomena are wedded in a particular context (backward dimension), and how they perform strategically (forward), in conjunction with other regional characteristics and assets (lateral). A good example is TORRE and RALLET's (2005: 52) contextual, socially constructivist interpretation of the role of proximity: "Geographical proximity is not so much an *economic cause* of agglomeration as a social effect of the embeddedness of economic relations in inter-individual relations. Face-to-face interaction between two actors cannot alone generate synergies; the latter can only

develop between two individuals who belong to the same network or share common representations." In the context of industrial districts, LOASBY's (1998: 82) points at the vital role of the locational strategies of core firms in upholding the significance of local networks: "Thus long-term survival seems to depend on the presence of a firm, or preferably firms, which are unwilling, or preferably unable, to do without local partners but are nevertheless able to induce them to make the major changes that might be necessary to preserve the competitiveness of the area" (see also REES, 2005). Such inducement depends on, as well as fosters, close communication and shared cognitive frames, and visionary strategies, which, in turn, help to shape regional conventions of participation and interaction. Loasby's work, as well as other literature focusing on cognition in regional contexts, has helped recent work on industrial districts to further address the link between the micro and meso levels of regional development (Rullani, 2003, Corno et al., 1999). Furthering this agenda in a relational perspective provides a key challenge for research on knowledge and regional economic development.

Turning to the second issue from the previous section, i.e. the need to span the meso and macro domains by contextualising regional development within broader (socio)economic and institutional arrangements, the proposal is to advance a relational perspective by invoking older 'structuralist' conceptualisation. In recent work, Yeung (2005) and Dicken (2000) point at the importance of perceiving local-global dynamics as a two-way process acting between 'firms and places'. Through a variety of relational practices, 'firms shape places' as well as 'places shape firms'. However, the theorisation of these interactions remains rather limited. It may be appropriate, therefore, to reassess earlier work, notably that on 'geographical industrialisation' and the formation of 'industrial space' (Storper and Walker, 1989) and on the links between *filières* and 'innovative milieus' (Crevoisier and Maillat, 1991). Although these perspectives pay less attention to the role of the firm (TAYLOR, 1995), they shed light on relational aspects of economic development at a larger scale, through notions such as 'industry cycles', 'first mover advantages', and 'vertical (dis)integration'. The challenge is here to strike the right balance between more structural aspects and the pervasive role of difference and heterogeneity, by drawing both on older, more structurally oriented work and recent work focusing on diversity (cf. Jessop, 2004b, Moulaert and Sekia, 2003)

Such a revived, but also qualified, interest in more structural aspects of spatial-economic development brings up another theme from our own conceptual history, namely *regulation*. While less of a concern recently in the domain of regional studies, the Regulation Approach has played a substantial role in the discussion on 'varieties of capitalism' and market governance, bridging, in particular the link between sectoral forms of market coordination and macro-economic structures and institutions (Hollingsworth and Boyer, 1997, Lewis et al., 2002). Hence, not only historically but also spatially, the concept of regulation serves to strike the balance between structure and diversity. This role may be further endorsed by the way recent writings have tended to understand regulation as a contextualised *process* rather than as tendency towards a internally stable and coherent configuration (GOODWIN, 2001). A process view allows for a stronger recognition of the role of local agency and identity, and a more sophisticated and refined understanding of the distinctive impact of political strategies at various levels in a relational manner (JESSOP, 2001). Moreover, the regulationist literature is moving on several other fronts, including interest in the way state and selected non-state actors coalesce in 'hegemonic projects', and the constitutive role of discourses, conventions and societal paradigms (Jessop, 2004a, MacLeod, 1997).

Time for our final question. If we accept the significance of advancing a relational perspective, and the need for revaluing fitting concepts and unbracket debates from our theoretical past, what 'blind spots' may be left? While this is an intrinsically open question, one issue springs to mind. In addressing both 'micro in meso' and 'meso in macro' issues, there is one kind of institution that appears to be elementary, but that has received scant attention in the regionalist debate, namely the *market*. At first sight, this omission is surprising. Institutional and sociological approaches have gone a long way in showing how the spatial, organisational and institutional variety in capitalist market forms impinges upon the performance of economic agents, as well as upon the performance of larger units such as sectors, states and regions encompassing specific form of market governance (Hollingsworth and Boyer, 1997, White, 1981, Fligstein, 1996). Market are "highly social in character, even when social interaction is

at a distance" (Thrift, 2000: 694). Indeed, this literature even uses similar notions as the 'soft' regionalist perspectives: institutions, conventions, networks, governance and relations of power. Like other social phenomena, markets are infused with cultural, legal, political, and institutional dimensions (PECK, 2005), and manifest highly specific forms of spatiality. So why have these development have had such a limited impact upon regional studies? Our discussion of the genealogy of regional studies suggests a straightforward answer. The market does not fit in a 'parochial' view on the region that sees the world outside in singular terms, i.e. driven primarily by fierce competition and forces of ubiquitification. The challenge for geography is thus to confront a rich understanding of the region with an equally rich notion of the wider economic environment. The latter does not only include global production networks, and complex systems of capitalist institutions, but also, and essentially, *organised markets*. It is in this context that we should value Peck's advocacy for a close dialogue with meso and macro sociological perspectives, remembering his warning that such a dialogue should not lead to a crude importation of external ideas.

CONCLUSION

Inherent to their nature, geographers tend to keep their eyes wide open and look far afield. Given their eagerness to continually absorb ideas and concepts from other disciplines, our discipline can be depicted as an open and inquisitive stream of thought. Moreover, its general concern with economic and social unevenness and issues of governance and democracy endorse its critical engagement with broader societal questions. At the same time, however, the rather loose way in which concepts from very different backgrounds are woven together, and the easiness with which certain critical issues in the debate tend to be neglected or 'bracketed' point at some serious weaknesses. Still underdeveloped notions of space and scale, an often uncritical stance towards the notions of competitiveness and learning, a parochial, regionalist projection of the notion of institutions, and hence a poor engagement with debates on globalisation and broader societal changes endorse this weakness. Yet, the way forward is not one of an overhaul of our conceptual baggage, nor of insisting primarily on better definitions and more rigour. What is most important is the quality and depth of our debate, which requires insight into the way prevailing concepts and arguments in the present and past have surfaced and nestled in the debate, how they grew, lingered and went. To come back to Barnes' plea for exploring our metaphors, we should be sensitive to the way concepts and arguments tend to shift in the debate, how they tend to be rewoven under new theoretical labels, and how certain concepts and arguments become sidetracked. In itself, conceptual shifts and deaths are part of the game, but it is essential we take notice and reflect upon it.

In more substantive terms, a key challenge emerging from the exploration here is to further deepen and refine a relational perspective on regional development, by focusing, in particular, on the development of 'middle level' concepts mediating between 'local' specificities and powers on the one hand, and more structural developments on the other. Such an agenda could selectively build on long-standing discussions inspired by more structuralist perspectives, as well as on recent interests in institutional and cognitive aspects of economic development. Like before, 'foreign' concepts, such as stemming from the sociological interests in market organisation and 'variations of capitalism', may be of help to advance our thinking. Yet much care should be taken when such concepts are inserted in a broader theoretical framework oriented towards a more sophisticated understanding of regional development.

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REFERENCES

- Amin, A. (2000) In *A companion to economic geography*(Eds, Sheppard, E. and Barnes, T.) Blackwell, Oxford, pp. 149-168.
- Amin, A. and Robins, K. (1990) *Environment and Planning D*, **8**, 7-34.
- Amin, A. and Thrift, N. (1992) *International Journal of Urban and Regional Research*, **16**, 571-587.
- Amin, A. and Thrift, N. (1995a) In *Managing cities*(Eds, Healey, P., Cameron, S., Davoudi, S., Graham, S. and Madani-Pour, A.) Wiley, Chichester, West Sussex, pp. 92-108.
- Amin, A. and Thrift, N. (1995b) *Economy and Society*, **24**, 41-66.
- Amin, A. and Thrift, N. (2002) *Cities. Reimagining the urban*, Polity Press, Cambridge.
- Barnes, T. J. (1996) *Logics of dislocation*, The Guildford Press, New York.
- Bathelt, H., Malmberg, A. and Maskell, P. (2002) *Cluster and knowledge: local buzz, global pipelines and the process of knowledge creation*.
- Bathelt, H., Malmberg, A. and Maskell, P. (2004) *Progress in Human Geography*, **28**, 31-56.
- Becattini, G. (2003) In *The technological evolution of industrial districts*(Eds, Belussi, F., Gottardi, G. and Rullani, E.) Kluwer Academic Publishers, Boston, pp. 1-18.
- Benko, G. and Lipietz, A. (1998) *Geojournal*, **44**, 275-281.
- Brown, J. S. and Duguid, P. (2001) In *The Silicon Valley Edge: A Habitat for Innovation and Entrepreneurship*(Eds, Millar, W. F., Lee, C.-M., Hancock, M. G. and Rowen, H. S.) Stanford, Stanford University Press, pp. 16-39.
- Capello, R. (1999) *Regional Studies*, **33**, 353-365.
- Cohen, W. and Levinthal, D. (1990) *Administrative Science Quarterly*, **35**, 128-152.
- Collins, R. (1992) In *The sociology of economic life*(Eds, Swedberg, R. and Granovetter, M.) Westview Press, Boulder, pp. 85-110.
- Cooke, P. and Morgan, K. (1998) *The associational economy: firms, regions and innovation*, Oxford University Press, Oxford.
- Corno, F., Reinmoeller, P. and Nonaka, I. (1999) *Journal of management and governance*, **3**, 379-394.
- Crevoisier, O. and Maillat, D. (1991) In *Innovation networks. Spatial perspectives*(Ed, Camagni, R.) Belhaven Press, London, pp. 13-34.
- Dicken, P. (2000) In *The Oxford Handbook of Economic Geography*(Eds, Clark, G. L., Feldman, M. P. and Gertler, M. S.) Oxford University Press, Oxford, pp. 275-291.
- Dicken, P. (2004) *Trans Inst Br Geog*, **29**, 5-26.
- Fligstein, N. (1996) *American Sociological Review*, **61**, 656-673.
- Gertler, M. S. (1992) *Transactions of the Institute of British Geographers*, **17**, 259-279.
- Gertler, M. S. (2003) *J Econ Geogr*, **3**, 75-99.
- Goodwin, M. (2001) *Journal of Housing and the Built Environment*.
- Gordon, I. R. and McCann, P. (2000) *Urban Studies*, **37**, 513-532.
- Grahl, J. and Teague, P. (2000) *Economy and society*, **29**, 160-178.
- Henderson, J., Dicken, P., Hess, M., Coe, N. and Yeung, H. W. C. (2002) *Review of International Political Economy*, **9**, 436-464.
- Henry, N. and Pinch, S. (2000) *Geoforum*, **31**, 191-208.
- Henry, N. and Pinch, S. (2001) *Environment and Planning A*, **33**, 1169-1183.
- Hollingsworth, J. R. and Boyer, R. (1997) In *Contemporary capitalism: the embeddedness of institutions*(Eds, Hollingsworth, J. R. and Boyer, R.) Cambridge University Press, Cambridge UK, pp. 1-47.
- Jessop, B. (2001) *Environment and Planning*, **33**, 1213-1235.
- Jessop, B. (2004a) *Critical semiotic analysis and cultural political economy.*, University of Lancaster, Department of Sociology, Lancaster.
- Jessop, B. (2004b) *From Localities via the spatial turn to spatio-temporal fixes: A Strategic-Relational odyssey*, University of Bonn, Bonn.
- Keating, M. (1998) *The new regionalism in Western Europe. Territorial restructuring and political change*, Edward Elgar, Cheltenham, UK.
- Legendijk, A. (2000) In *Learning regions, theory, policy and practice*(Eds, Bakkers, S., Rutten, R. P. J. H., Morgan, K. and Boekema, F.) Edward Elgar, Aldershot, pp. 165-191.
- Legendijk, A. (2003) *Regional Studies*, **37**, 719-727.
- Legendijk, A. (2004) *Tijdschrift voor Economische en Sociale Geografie*, **95**, 511-526.
- Lawson, C. (1997) *ESRC Centre for Business Research. Working Paper Series*, **54**, 1-40.

- Lewis, N., Moran, W., Perrier-Cornet, P. and Barker, J. (2002) *Progress in Human Geography*, **26**, 433-462.
- Lissoni, F. (2001) *Research Policy*, **30**, 1479-1500.
- Loasby, B. J. (1998) In *Industry, Space and Competition. The contribution of the economists of the past*(Eds, Bellet, M. and L'Harmet, C.) Edward Elgar, Cheltenham, pp. 70-84.
- Lombardi, M. (2003) In *The technological evolution of industrial districts*(Eds, Belussi, F., Gottardi, G. and Rullani, E.) Kluwer Academic Publishers, Boston, pp. 109-138.
- Lovering, J. (1999) *International Journal of Urban and Regional Research*, **22**, 379-395.
- MacLeod, G. (1997) *Progress in Human Geography*, **21**, 530-553.
- MacLeod, G. (1999) *Reflections on the New Regionalism in economic development*, Dept. of Geography, University of Durham, Durham.
- MacLeod, G. (2001) *Environment and Planning*, **33**, 1145-1167.
- Maillat, D. (1996) *From the industrial district to the innovative milieu: contribution to an analysis of territorialized productive organizations*, Université de Neuchâtel, Neuchâtel.
- Maskell, P. and Malmberg, A. (1999) *European Urban and Regional Studies*, **6**, 9-25.
- Massey, D. (1979) *Regional Studies*, **13**, 233-243.
- Morgan, K. (1997) *Regional Studies*, **31**, 491-503.
- Morgan, K. (2004) *Journal of Economic Geography*, **4**, 3-21.
- Moulaert, F. and Sekia, F. (2003) *Regional Studies*, **37**, 289-302.
- Nonaka, I. and Takeuchi, H. (1995) *The knowledge-creating knowledge creating company: how Japanese companies create the dynamics of innovation*, Oxford University Press, New York.
- Oinas, P. (1999) *GeoJournal*, **49**, 363-372.
- Peck, J. (2005) *Economic Geography*.
- Piore, M. J. and Sabel, C. F. (1984) *The second industrial divide: possibilities for prosperity*, Basic Books, New York.
- Rallet, A. and Torre, A. (1999) *GeoJournal*, **49**, 373-380.
- Rees, K. (2005) In *Proximity, distance and diversity*(Eds, Lagendijk, A. and Oinas, P.) Ashgate, Hampshire, pp. 191-215.
- Rullani, E. (2003) In *The technological evolution of industrial districts*(Eds, Belussi, F., Gottardi, G. and Rullani, E.) Kluwer Academic Publishers, Boston, pp. 63-88.
- Salais, R. and Storper, M. (1997) *Worlds of production. The action frameworks of the economy*, Harvard University Press, Cambridge, MA.
- Scott, A. J. (1988) *New industrial spaces. Flexible production organisation and regional development in North America and Western Europe*, Pion, London.
- Scott, A. J. (2000) *Cambridge Journal of Economics*, **24**, 483-504.
- Storper, M. (1997) *The regional world*, Guildford Press, New York.
- Storper, M. and Venables, A. J. (2004) *Journal of Economic Geography*, **4**, 351-370.
- Storper, M. and Walker, R. A. (1989) *The capitalist imperative. Territory, technology and industrial growth*, Basil Blackwell, New York.
- Taylor, M. (1995) In *The industrial organisation and its environment: spatial perspectives*(Eds, Conti, S., Malecki, E. J. and Oinas, P.) Avebury, Aldershot, Hants, UK, pp. 99-122.
- Thrift, N. (2000) In *The Oxford Handbook of Economic Geography*(Eds, Clark, G. L., Feldman, M. P. and Gertler, M. S.) Oxford University Press, Oxford, pp. 689-704.
- Torre, A. and Rallet, A. (2005) *Regional Studies*, **39**, 47-59.
- White, H. C. (1981) *American Journal of Sociology*, **87**, 517-547.
- Yeung, H. W.-c. (2005) *Transactions of the Institute of British Geographers*, **30**, 37-51.

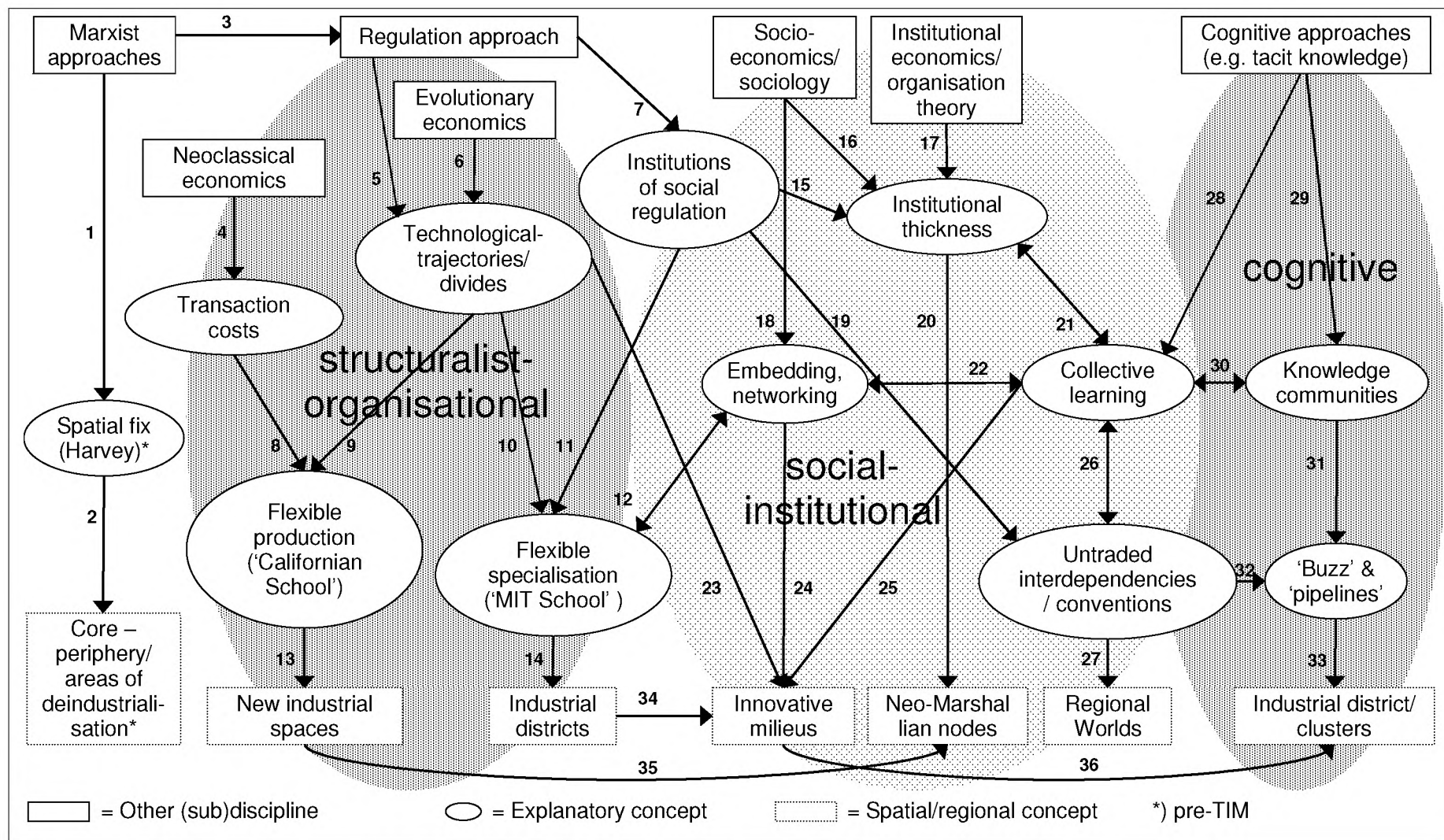


Figure 1 Framing the 'TIM family' (inspired by Moulaert and Sekia, 1999; Barnes, 1996; Kramsch and Boekema, 2002; Scott, 2000)

