“Spatial” relationships? Towards a re-conceptualisation of embeddedness

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Abstract: The concept of embeddedness has gained much prominence in economic geography over the last decade, as much work has been done on the social and organisational foundations of economic activities and regional development. Unlike the original conceptualisations, however, embeddedness is mostly conceived of as a 'spatial' concept related to the local and regional levels of analysis. By re-visiting the early literature on embeddedness – in particular the seminal work of Karl Polanyi and Mark Granovetter - and critically engaging with what I will call an 'over-territorialised' concept, a different view on the fundamental categories of embeddedness is proposed. This re-conceptualisation then is illustrated using the post-structuralist metaphor of a rhizome to interpret the notion of embeddedness and its applicability on different geographical scales.

Keywords: Embeddedness; Social Networks; New Regionalism; Global Production Networks; Rhizome

I Introduction

Within economic geography research of the last decade, a growing emphasis has been put upon the social nature of economic processes and their manifestation in space. As a large body of recent literature, in particular about regional development, shows (cf. Staber, 1996; Amin, 1999; Cooke, 2002), institutionalist and evolutionary perspectives have gained prominence in the analysis of regional and economic development. Parallel to and gradually superseding alternative approaches, for instance Krugman's (1991) "geographical economics" - based on endogenous growth theory - or the "California School" around Storper and Scott - more concerned with material linkages and transaction costs - this strand of work rather focuses on the social and cultural foundations of economic systems. The shift of theoretical perspectives led to a controversial discussion about the 'cultural turn' in economic geography and its implications for the future of the discipline (cf. Amin and Thrift, 2000; Rodríguez-Pose, 2001; Yeung, 2001).

One of the central notions in this intellectual tradition, introduced into economic geography in the early 1990's (cf. Dicken and Thrift, 1992; Grabher, 1993) and now widely used, is the concept of the "embeddedness" of economic action into wider institutional and social frameworks. Referring back to the work of Karl Polanyi (1944), and borrowing heavily from the economic sociologist Mark Granovetter (1973; 1985), geographers have theorised and used the concept from a distinct *spatial* point of view, namely to explain – in addition to economic theories of transaction costs and agglomeration economies – the evolution and economic success of regions built by locally clustered networks of firms. Varyingly named industrial districts, creative milieus, learning regions or local knowledge communities, many studies in the new regionalism tradition pay attention almost exclusively to the local and regional systems of economic and social relations,[1] arguing that the 'local' embeddedness of

actors leads to an institutional thickness that is regarded to be one crucial success factor for regions in a continuously globalising economy.

However, there is a number of conceptual problems with regard to embeddedness and space/place (cf. Martin and Sunley 2001). This becomes clear if we go back to the origins of the embeddedness concept and rethink its applicability and appropriateness at different geographical as well as analytical levels. A look into the social science literature, including economic geography and business studies, reveals a plethora of meanings linked with embeddedness. Whilst every single publication about embeddedness unfailingly pays tribute to Granovetter's (1985) seminal paper, and in most cases at least mentions Polanyi's contribution, the question remains of the extent to which the theorisations of embeddedness used in the more recent literature have or have not moved away from the original concepts elaborated by Polanyi and Granovetter and thus have diluted or improved them. This means that the analytical scales and the 'spatiality' of embeddedness need to be scrutinised, both in the original concepts and in their recent adoptions, in order to get a clearer and more consistent understanding of who or what the socially embedded actors are, and in what these actors are actually embedded.

Such conceptual problems, like the lack of clarity or 'sloppy theorising', have recently been highlighted by Ann Markusen (1999) in her highly provocative paper on 'fuzzy concepts' in regional analysis, which has kick-started a lively debate about recent developments in critical regional studies (cf. Hudson, 2002; Peck, 2002). Interestingly, she does not explicitly refer to embeddedness as a fuzzy notion, although it clearly has all the attributes of one. While using the concept of "networking and co-operative competition in industrial districts" (Markusen, 1999: 877) as one example of fuzziness, the related and underlying theory of embeddedness does not attract her attention. The aim of this paper, therefore, is to re-evaluate the notion of embeddedness – especially from a spatial perspective

- and to develop a more clarified and coherent concept. I agree with Markusen on the fact that a clear vocabulary is needed in academic discourse and that scientific research should be based on coherent and consistent conceptualisations. This does not mean, however, that I share all of Markusen's views on how a 'good' concept should be constructed and on "how we will know it when we see it". Rather, the questions raised by Pike et al. (2000) have to be answered: i.e. 'who' is embedded in 'what', and what's so "spatial" about it?

In the first section, I will re-visit Polanyi's and Granovetter's original work, looking at the adoption of the concept in different strands of social science, not least in business and organisation studies (cf. Dacin et al., 1999) and economic geography (cf. Oinas, 1998). Discussing the different meanings and uses of the term, I will ask the question of who is embedded in what (see Pike et al., 2000), in order to try and sort out or re-organise all these different interpretations into a comprehensive, more clarified conceptualisation of embeddedness. Doing that requires a fresh look on the nature of actors (who) and on the social and cultural structures involved (what). The second part will present a critical analysis of the different spatial scales that are applied in embeddedness research, from the local to the global, whereby the latter is mostly associated with a state of disembeddedness. This sympathetic critique will stress that the 'new regionalism' is by no means the only spatial logic of embeddedness in an era of globalisation, which can be shown by discussing the embeddedness categories developed previously in the context of various topics like business systems or transnational ethnic networks, and global production networks. In the final part, an integrating spatial-temporal concept of embeddedness is proposed, which uses the post-structuralist metaphor of a rhizome to interpret the notion of embeddedness.

II Re-considering embeddedness

Embeddedness "is an increasingly popular but confusingly polyvalent concept" (Jessop, 2001: 223). Indeed, there is now a plethora of meanings and definitions of what embeddedness might consist of, the most prominent classification probably being Zukin and DiMaggio's (1990) distinction between political, cultural, structural, and cognitive mechanisms (cf. Baum and Dutton, 1996; Tzeng and Uzzi, 2000). Other authors make a distinction between micro-net and macro-net embeddedness (cf. Halinen and Törnroos, 1998; Fletcher and Barrett, 2001), different forms of social embeddedness (Jessop, 2001), or focus on temporal embeddedness, technological embeddedness etc. These terminologies need to be unravelled if we want to get a clearer picture of the different concepts' common ground and substantive meanings.

1. "The Great Transformation"

Karl Polanyi (1944) can without doubt be considered to be the father of the embeddedness concept (Swedberg and Granovetter, 1992; Barber 1995). Arising from a strong dissatisfaction with the absolutisation of the market and its underlying rationale of self-regulation and economising behaviour, which dominated the economic science at his time as well as political discourses and ideologies, he sought to demonstrate that the economy is enmeshed in institutions, both economic and non-economic (Polanyi, 1992: 34). He called this view a substantive definition of economics, as opposed to the formal definition supported by economists and market ideologists (see Figure 1). In his book, "The Great Transformation"[2], Polanyi (1944) distilled three analytical types of economic exchange in societies, that were characterised by a varying degree of separation from non-economic institutions, or a distinct form of what has since been called embeddedness. Whereas non-market economies, with their forms of *reciprocal* and *redistributive* exchange, were

constituted on the basis of shared values and norms that had their roots in social and cultural bonds rather than monetary goals, the society based on *market* exchange implicated underlying values and norms that only consider price, and no other obligations. Therefore, Polanyi conceived market economies as disembedded from the social-structural and cultural-structural elements of society.

Moreover, while historically preceding economies were embedded in society and its social and cultural foundations, he argues that modern market economies are not only disembedded, but that "instead of economy being embedded in social relations, social relations are embedded in the economic system" (Polanyi, 1944: 57). In other words, unlike in earlier societies, cultural and social elements have become economised and monetarised, assuming labour to be a commodity and the principle of homo economicus now prevailing in and dominating modern society. The above quoted statement of Polanyi is one of only two occasions where he actually uses the term 'embeddedness' (cf. Barber, 1995), and gives a good indication of whom he considers to be embedded in what. On the second occasion, he writes about economic exchange in systems based on reciprocity, where acts of barter are embedded in long range relations implying trust and confidence (Polanyi, 1944: 61). This might be closer to the notion of embeddedness as it is used in most of the recent academic literature, focusing on personal ties within networks, but does not represent the central argument in Polanyi's analysis. As he points out, the terms reciprocity, redistribution and (market) exchange often refer to personal interrelations, whereby the actors are individuals. "Superficially then it might seem as if the forms of integration [reciprocity, redistribution and exchange] merely reflected aggregates of the respective forms of individual behavior: […] (Polanyi, 1992: 35). However, he argues, "in any given case, the societal effects of individual behavior depend on the presence of definite institutional conditions […]" (ibid: 36). Obviously, it is not the individual as actor, or at least it is not a person's social relationships

with others, that alone form the substance of Polanyi's embeddedness concept. Neither are economic organisations or collective actors like an enterprise seen as actors that are embedded in something. Rather, it is the form of exchange, or type of economy, that is embedded in or disembedded from society. The central issue is the 'institutionalisation' of economic processes, or "the 'societal' embeddedness of functionally differentiated institutional orders in a complex, de-centred society" (Jessop, 2001: 224).

In 'Transformation', Polanyi did not explicitly acknowledge – although he implicitly recognised it – the incremental changes of market economies and societies that mutually adjusted to one another. However, in his second, co-edited volume, 'Trade', he finally explicates "the gradual institutional transformation that has been in progress since the first World War. Even in regard to the market system itself, the market as the sole frame of reference is somewhat out of date" (Polanyi, 1957: 269). What he initially described as a disembedded market society, in reality always was, and always will be, an exchange system that consists of more than pure homo oeconomicus behaviour and price mechanisms. In other words, market societies – even the most 'liberal' ones – are to a varying extent "embedded" systems, connected with and influenced by non-economic institutions, and showing characteristics of a redistributive exchange system that for Polanyi was mainly pre-modern, pre-market based.[3] These problems with his typology of evolving exchange systems illustrate that it is not only crucial to factor in dynamic aspects (transformations), but also to think about the spatial scales on which these occur. His framework is essentially non-spatial, i.e. geographical (pre)-conditions do not have any explanatory power. The geographical scales used to describe the spatial configuration of the three distinctive forms of economic exchange are the ones most common for the societies in question. For example, by describing pre-modern societies and reciprocal exchange, it seems only logical to look at a local scale as main 'platform' for this type of exchange, e.g. in and between households and families. He

did not really consider global forms of reciprocal exchange based for example on kinship or ethnicity, and today represented in transnational networks, as in the case of Chinese business networks. This is not to say Polanyi ignored the process of economic internationalisation. On the contrary, this was an important feature of the market economy. However, internationalisation was seen through the lens of international trade and, to some extent, international investment by 'haute finance'. Forms of networked globalisation through cross-border firm expansion – although prevalent at Polanyi's time and implicated in his analysis of 'haute finance' – did not play a major role in his conceptualisation of the (embedded) economy, according to his institutional-structural, society-centred approach.

"If one accepts the central insight of Polanyi (1944) that the market is socially constructed and governed – and not a 'natural', given, inevitable form – then it makes perfect sense that firms in market economies should also be 'constructed' to some extent by their social-institutional environment" (Gertler, 2001: 20). This view is shared by the 'business systems' literature, which follows a similar argumentation (cf. Whitley, 1992, 1999; Kristensen, 1996). According to their exponents, business systems can be defined as different kinds of economic coordination and control systems, shaped by an institutional environment specific to different societies, with a particular emphasis on nation states. Although the notion of embeddedness is not specifically elaborated in this strand of research, it is quite obvious that there is an inherent understanding of the 'societal' embeddedness of firms in their national and macro-regulatory environment. As Whitley (1999) argues, even under globalisation there is still a tendency for (national) business systems to retain their specific characteristics. From that results a variety of capitalisms (cf. Hollingsworth et al., 1994; Hollingsworth and Boyer, 1997; Hall and Soskice, 2001), that resists tendencies of a global homogenisation of organisational models and a corresponding convergence of business systems. While both Polanyi and Whitley emphasise the role of society in shaping the

economy, the business systems literature clearly focuses on particular economic actors, namely the firm. By doing so, it moves away from Polanyi's rather structural conceptualisation and more towards another approach which arguably had the biggest influence on embeddedness research until today: Mark Granovetter's seminal work on economic action and social structure.

2. The "Problem of Embeddedness"

It is virtually impossible to read or write about the issue of embeddedness without referring to Granovetter's (1985) contribution in the American Journal of Sociology. I do not intend to discuss again here in detail the market-hierarchy issues related to his concept[4], nor to recapitulate the network paradigm itself. Rather, on the way towards a less fuzzy typology, I will very briefly re-examine his conceptualisation with regard to our question of who is embedded in what. To begin with, one of Granovetter's main concerns is to avoid both undersocialised views of economic action, as in neo-classical economics, and over-socialised views in sociology, for which he blames Talcott Parsons's theory of structural functionalism as being partially responsible. In rejecting "the tendency towards atomisation of human action in mainstream economics and sociology" (Pike et al., 2000: 60), there certainly is common ground with Polanyi's work. However, he departs from the former concept in some important ways.

Like many other authors, Granovetter rejects Polanyi's argument insofar as - in his view – it proposes too crude a distinction between embedded (ancient) non-market economies and disembedded, modern market economies. As we have seen, that is a somewhat simplified and maybe unfair interpretation, considering Polanyi's later clarifications on that issue. The most important step, however, is a shift in the analytical focus, away from fairly abstract economies and societies towards the analytical scales of actors and networks of inter-personal

relationships. By "scaling down" the embeddedness concept towards an emphasis on individual and collective agency, a new access to embeddedness is presented that "stresses […] the role of concrete personal relations and structures (or "networks") of such relations in generating trust and discouraging malfeasance" (Granovetter, 1985: 490). The notion of concrete personal relations and the central element of trust implies an understanding of actors as being individuals, although this question seems to be left open in Granovetter's article (Oinas, 1997). Indeed, later in his argument he states that "social relations between firms are […] important" (ibid: 501). Whom or what, then, should we conceive of as actors? An answer to that lies in Granovetter's (1992) distinction between relational and structural embeddedness (see cf. Rowley et al., 2000; Glückler, 2001 for further discussion), where the former describes the nature or quality of dyadic relations between actors, while the latter refers to the network structure of relationships between a number of actors. This understanding of social networks and social structure implicit in Granovetter's distinction allows us to conceptualise agency both at the individual and collective level.

> "Social structure , in this view, is 'regularities in the patterns of relations among concrete entities […]. A social network is one of many possible sets of social relations of a specific content – for example communicative, power, affectual, or exchange relations – that link actors within a larger social structure (or network of networks). The relevant unit of analysis need not to be an individual person, but can also be a group, an organization, or, indeed, an entire 'society' (i.e., a territorially bounded network of social relations); any entity that is connected to a network of other such entities will do. […] Individual and group behavior, in this view, cannot be fully understood independently of one another" (Emirbayer and Goodwin, 1994: 1417).

Again, as in Polanyi's work, there is no a priori spatial scale of analysis in Granovetter's concept of embeddedness, although it is quite obvious that in 'Transformation', the main frame of reference is the territorially bounded society, whereas Granovetter does not refer to such a 'societal' frame at all, bounded or not to a particular territory. According to critics, his conceptualisation is somewhat too narrowly focused on 'ongoing social relations' and neglects the issue of actors and social networks being part of a larger institutional structure.

Hence, Paul DiMaggio (1990, 1994) has argued that economic action is not only embedded in the social structure, but also in culture. This argument bears some resemblance to Polanyi's 'societal' embeddedness and thus supports a further linking of the two strands of reasoning.

A major attribute of Granovetter's approach is to clearly articulate the very existence of embedded relations and social structures in the context of market societies. His paper broke the ground for a vast literature on this issue in economic sociology, organisation and business studies. But as the number of publications in this field has multiplied since his seminal contribution, so has the number of meanings of embeddedness. While it is encouraging to see the wide application of the concept in economic and social research, there clearly is a danger of the notion in all its varieties leading to a 'fuzzy' concept which is hardly more than a handy metaphor for 'the social' and embraces almost every analytical category imaginable. A quick review of two examples will suffice to illustrate this.

3. Organisation and Business Studies

One of the best known categorisations that extended Granovetter's allegedly narrow concept is Zukin and DiMaggio's (1990: 15-23) classification of cognitive, cultural, structural, and political embeddedness mechanisms. On the individual level, cognitive embeddedness refers to the regularities of mental processes that limit the exercise of economic reasoning. This argument supports the position against an under-socialised view and its related homo oeconomicus utopia of purely rational choice, and instead emphasises– on an organisational level – the notion of bounded rationality. Rational economic behaviour is not only limited by a person's cognitive constraints, but also by shared collective understandings in shaping economic strategies and goals, i.e. cultural embeddedness. The Granovetterian notion of structural embeddedness as contextualisation of economic exchange in ongoing interpersonal relations is adopted in its original sense as one of the four categories

developed by Zukin and DiMaggio. Finally, they distinguish a political form of embeddedness which highlights the institutional (political, legal, etc.) framework of economic action and stresses the struggle for power that involves economic actors and nonmarket institutions alike (cf. Liu, 2000; Sit and Liu, 2000).

Zukin and DiMaggio's classification is indeed useful in breaking down different aspects of the "social" into different mechanisms for analytical purposes and, at its time, certainly provided the most comprehensive, yet coherent, overview of different kinds of embeddedness. But then, the four mechanisms they isolate are not really consistent categories, a fact which might contribute to the fuzziness of the concept. For instance, structural and political embeddedness by and large describe the same phenomenon, namely the relations of actors, and there is actually no reason for the implicit assumption that the structural describes only harmonious relations between economic actors and the political describes tense relationships between the economic and the non-economic.[5]

The classifications and typologies have become even more complex and often confusing as subsequent literature has added more and more forms of embeddedness to the ones already in place. While the issue of agency in the organisation business literature has pretty much homed in on firms and their networks, the question of what the firms are embedded in has generated multiple meanings and a number of "research perspectives on network embeddedness" (Halinen and Törnroos, 1998: 191). In Halinen and Törnroos' paper on the evolution of business networks, the reader is provided with three perspectives (actor-network, dyad-network, and micronet-macronet), two dimensions (horizontal and vertical) and six types of embeddedness: social, political, market, technological, temporal and spatial. Considering the origins of the embeddedness concept, it seems disputable whether this kind of extension is helpful for dealing with the admittedly complex issue of agency within social structures. The examples of 'technological' and 'market' embeddedness are cases in point.

Halinen and Törnroos argue that business exchange is embedded in various technological systems, and in the development of these systems at the corporate and societal levels. By this they mean that firms are dependent on particular technologies, a view that departs from the common ground of embeddedness concepts discussed thus far. The same is true for their discussion of market embeddedness, pointing out the fact that "each business actor is embedded in a specific market defined in the terms of products and services offered, the clientele served, the functions performed and the time and territory encompassed by the company's operations. Actors are connected with their customers, suppliers and distributors, and in some cases also with competitors (e.g. through strategic alliances)" (ibid: 196). Apart from the fact that in this definition the actors are no longer embedded in a set of (social) relations, but rather in markets defined as 'products' and 'services', these markets are concomitantly seen as the temporal and spatial framework the business actors are embedded in. This, one would assume, actually makes it unnecessary to conceptualise the distinct types of temporal and spatial embeddedness.

By criticising such a rather arbitrary use of embeddedness, I certainly do not want to deny the complexities associated with the very concept, nor do I want to dismiss the otherwise instructive discussion presented by Halinen and Törnroos. In fact it serves as an illustration to show the need for more conceptual rigor. Arguably, none of the concepts mentioned above has been able to construct a convincing typology of embeddedness. In their comprehensive overview, Dacin et al. (1999: 344 ff.) need three pages of small print to tabulate all the different connotations and analytical foci associated with embeddedness research in the area of business organisation studies alone. The above re-visiting of the literature on embeddedness in different academic areas also has revealed a wide range of perspectives on the subject, summarised in Table 1. But so far, I have only very briefly mentioned the issue of space and place in conceptualising embeddedness, as these had by and large no prominent

position in the literature discussed above. Let us therefore turn in more detail to the spatial connotations and conditions of embeddedness and the adoption of the concept in economic geography.

Table 1: Who is embedded in what? Different views on embeddedness

	Who?	*In what?*	*Geographical Scale*
Polanyi's Great Transformation	"The economy", systems of exchange	"Society", social and cultural structures	No particular scale, but emphasis on the nation-state
Business Systems Approach	Firms	Institutional and regulatory frameworks	Nation state, 'home territory'
New Economic Sociology	Economic behaviour, individuals and firms	Networks of ongoing social (inter-personal) relations	No particular scale
Organisation & Business Studies	Firms, networks	Time, space, social structures, markets, technologic al systems, political systems …	No particular scale
Economic Geography	Firms	Networks and institutional settings	Local / Regional

III Embeddedness, place and space: an over- territorialised concept

As well as being a matter of social relations, economic action, and hence embeddedness, is inherently spatial (Martin, 1994). This is why the new economic geography has adopted the concept of embeddedness since the early 1990's, starting with the work of Dicken and Thrift (1992). According to them,

> "Business organizations are […] produced through a historical process of embedding which involves an interaction between the specific cognitive, cultural, social, political and economic characteristics of a firm's 'home territory' […], those of its geographically dispersed operations and the competitive and technological pressures which impinge upon it" (Dicken and Thrift, 1992: 287).

It is worth noting that this understanding of embeddedness actually resembles more of Polanyi's original idea of 'societal' embeddedness, i.e. the history of economic actors and the cultural imprint of the 'home territory', rather than emphasising only locally 'bounded' economic activities, as in much of the subsequent geographical literature. It therefore is closer

to the original embeddedness conceptualisations than most economic-geographical interpretations since.

1. Embeddedness and the new regionalism

Under the influence of the new localism or new regionalism (cf. Paasi, 2002), most of the work in economic geography has been prone to use what I will call an "over-territorialised" concept of embeddedness by proposing "local" networks and localised social relationships as the spatial logic of embeddedness, which might result from "spatial fetishization" (Lewis et al., 2001: 441). Three main arguments that lead to an emphasis on the local and regional scale can be identified: firstly, the importance of external economies for localised production systems; secondly, the existence (and its assumed positive impact) of regional cultures and local institutional fabrics, or what has been termed 'institutional thickness' (Amin and Thrift, 1992; MacLeod, 1997); and thirdly, the role of spatial proximity in creating trust among business partners. The first relates to Alfred Marshall's ideas and has been picked up by the industrial districts literature as well as by Porter's work on clusters. But it is Marshall's notion of 'industrial atmosphere' that echoes in the latter two arguments related to local embeddedness.

The concept of institutional thickness puts emphasis on the social and cultural factors underlying the economic success of regions. Factors contributing to institutional thickness are: a strong institutional presence; high levels of interaction; defined structures of domination and/or patterns of coalition; a mutual awareness of being involved in a common (regional) enterprise (Amin and Thrift, 1994: 14). A strong and positive combination of these factors, it is argued, helps to consolidate the local embeddedness of industry, which in turn is closely linked to particular regional cultures. This has been demonstrated, among others, in AnnaLee Saxenian's (1994) prominent comparative analysis of Silicon Valley and the Route 128 area

in Massachusetts, where she attributes the differences in economic success of both regions partly to differences in the local institutional setting and the local culture. Both culture and institutions at work on other than the local level are largely ignored (cf. Gertler, 1997). The problem with such a view is that its constriction to the regional and local level is difficult to justify, in the sense that most of its assumptions are hardly theorised in terms of their territoriality, and rather used instead in an over-territorialised fashion to explain regional economic performance. An example of this kind of misrepresentation in much of the regional development literature to date is the notion of trust and proximity.

In today's post-fordist economies, flexible inter-firm relations have no doubt gained importance. The governance of strategic alliances and other forms of cooperation between firms is based to a high degree on mutual trust, in order to avoid malfeasance and opportunism, and enhance economic efficiency (cf. Dyer and Chu, 2000). The literature on embeddedness stresses the central role of concrete personal relations and networks of relations to generate trust. From this, proponents of the local embeddedness literature have concluded that spatial proximity facilitates relationships based on trust, since "trust-building is usually difficult to achieve over long distances because of the need for face-to-face interaction […] (Staber, 1996: 156). Similarly, Amin and Thrift (1994: 15) state that (local) institutional thickness nourishes relations of trust. But none of the literature cited explicates a theoretical foundation of the mutual determination of spatial proximity and trust, and it therefore seems somewhat problematic to attribute trust to one particular geographical scale. Furthermore, as Giddens (1990: 33) suggests, trust is related to absence in time and space, since there is no need for trust if someone's activities are constantly visible.

The over-territorialised views on embeddedness sketched above have recently received substantial criticism (cf. Lovering, 1999; MacKinnon et al., 2002). Unfortunately, even some work that questions the overly narrow focus on territories, and asks for a more consistent and

comprehensive concept of embeddedness, uses a case of local/territorial embeddedness as an example and therefore does not really apply its own claims (Pike et al., 2000). By scrutinising some of the assumptions of the new regionalism as far as embeddedness is concerned, I do not mean to deny the existence of local or territorial forms of embeddedness. On the contrary, there is evidence of territorial embeddedness as a source for innovation and competitiveness (cf. Scott, 1988; Storper, 1997; Cooke, 2002) as well as a source for potential decline due to lock-in situations.[6] I rather want to make the point that this is by no means the only spatial logic of embeddedness. In addition, there are voices warning of the dangers of a too strong local/regional embeddedness, and describing the negative effects of lock-in situations as well as the positive aspects of translocal linkages (cf. Bunnell and Coe, 2001; Bathelt et al., 2002; Coe and Bunnell, 2003).

2. Globalisation: a process of disembedding?

A large body of literature has highlighted the disembedding power of the globalisation process, as represented in the work of Anthony Giddens, among others (cf. Giddens, 1990, 1991). In his analysis of modernity, time and space, Giddens (1990) describes disembeddedness as a state where social relations are detached from their localised context of interaction. With regard to the distinction between pre-modern, embedded societies and modern systems conceived of as being disembedded, this bears a strong resemblance to Polanyi's argument of societal embeddedness discussed earlier. The basic mechanisms of disembedding are thought to be the (modern) creation of symbolic tokens and the establishment of expert systems on which actors rely and in which they put their trust. This does not mean that personal relations have lost all their importance in contemporary societies and economic systems, but that personal trust has been 'de-localised' as well. While trust in abstract systems is said to be a key feature of a disembedded economy, "[…] trust in others on

a personal level is a prime means whereby social relations of a distanced sort, which stretch into 'enemy territories', are established" (Giddens, 1990: 119).

The argumentation in discourses like this is based very much on the same territorial or local idea of embeddedness as in the "over-territorialised" concepts of regional and local networks. But is a global economy and are its actors really disembedded? Going back to the concepts of embeddedness discussed earlier and initially unrelated to place or locality, it is clearly not, as is shown by the literature on transnational ethnic networks and global production networks. In this strand of literature, the importance of non-local forms of embeddedness is demonstrated, without neglecting the role of territorial embeddedness. Furthermore, in acknowledging the path dependency of economic action and organisation, the crucial dimension of time is included. Processes of embedding and disembedding, changing the structure and spatial scope of networks, are given the necessary consideration.

One example that combines aspects of societal, territorial and network embeddedness is the recent work of Hsu and Saxenian on Taiwanese business networks in Silicon Valley (Saxenian, 1999; Hsu and Saxenian, 2000). Their analysis clearly shows that both local and trans-local relations are crucial for the development and performance of the regions and actors involved. An important factor contributing to the success of these networks is the fact that a beneficial combination of territorial and societal embeddedness underlies these networks. Taiwanese entrepreneurs are on the one hand territorially embedded in local business relationships within Silicon Valley, and on the other hand have maintained strong links within the Taiwanese community as well as with actors in their country of origin, Taiwan, which reflects these actors' societal embeddedness. Globalisation, then, is obviously not a process of disembedding based on mere market transactions and impersonal trust, but rather a process of transnational (and thereby translocal) network building or embedding, creating and maintaining personal relationships of trust at various, interrelated geographical scales. This

view is also held in the evolving literature on global production networks (GPN, cf. Henderson et al., 2002).

> "GPNs do not only connect firms functionally and territorially but also they connect aspects of the social and spatial arrangements in which those firms are embedded and which influence their strategies and the values, priorities and expectations of managers, workers and communities alike. The ways in which the different agents establish and perform their connections to others and the specifics of embedding and disembedding processes are to a certain extent based upon the 'heritage' and origin of these agents" (Henderson et al., 2002: 451).

Here, a relational concept of place and space is applied (cf. Dicken and Malmberg, 2001), in which GPNs come to be seen as dynamic topologies of practice that link different places and territories (cf. Amin, 2002). This approach takes into account the multi-scalarity of embeddedness, as well as its development over time (cf. Jessop, 2001), creating an "archipelago economy" that consists of a number of places and localities, linked across space by relations of embedded actors and changing shape and scope over time.

IV Towards a spatial-temporal concept of embeddedness: the metaphor of the rhizome

If – on the basis of the above discussion – we agree that embeddedness basically signifies the social relationships between both economic and non-economic actors (individuals as well as aggregate groups of individuals, i.e. organisations), and economic action is grounded in 'societal' structures, then out of the confusing variety of meanings we can distil three major dimensions of what comprises embeddedness and who is embedded in what:

- "Societal" embeddedness: Signifies the importance of where an actor comes from, considering the societal (i.e. cultural, political etc.) background or – to use a 'biologistic' metaphor - "genetic code", influencing and shaping the action of individuals and collective actors within their respective societies and outside it.[7] This type is maybe the

one most closely linked with the original idea of embeddedness as laid out in 'Transformation'. Although Polanyi does not write explicitly about 'cultural' embeddedness, it is safe to say that his analysis offers an excellent point of reference to emphasise the history of social networks and the cultural imprint or heritage of actors that influence their economic behaviour 'at home' as well as 'abroad'[8]. "We propose that […] cultural formations are significant because they both constrain and enable historical actors, in much the same way as do network structures themselves" (Emirbayer and Goodwin, 1994: 1440). Societal embeddedness also reflects the business systems idea of an institutional and regulatory framework that affects and in part determinates an actor's behaviour, e.g. on the individual level via the cognitive mechanisms detailed by Zukin and DiMaggio, or on the aggregate level of the firm, as pointed out by Whitley and his colleagues.

- Network embeddedness: Describes the network of actors a person or organisation is involved in, i.e. the structure of relationships among a set of individuals and organisations regardless of their country of origin or local anchoring in particular places. It is most notably the 'architecture', durability and stability of these relations, both formal and informal, which determines the actors' individual network embeddedness (the relational aspect of network embeddedness) as well as the structure and evolution of the network as a whole (the structural aspect of network embeddedness). While the former refers to an individual's or firm's relationships with other actors, the latter consists not only of business agents involved in the production of a particular good or service, but also takes the broader institutional networks including non-business agents (e.g. government and non-government organisations) into account. Network embeddedness can be regarded as the product of a process of trust building between network agents, which is important for successful and stable relationships. Even within intra-firm networks, where the relationships are structured by ownership integration and control, trust between the different firm units and the different stakeholders involved might be a crucial factor, such as in the case of joint ventures (Yeung, 1998).
- Territorial embeddedness: Considers the extent to which an actor is "anchored" in particular territories or places. Economic actors do not merely locate in particular places. They may become embedded there in the sense that they absorb, and in some cases become constrained, by the economic activities and social dynamics that already exist in those places. One example here is the way in which the networks of particular firms may

take advantage of clusters of small and medium enterprises (with their decisively important social networks and local labour markets) that pre-date the establishment of subcontracting or subsidiary operations by such firms. Moreover, the location or anchoring down of external firms in particular places might generate a new local or regional network of economic and social relations, involving existing firms as well as attracting new ones. Embeddedness, then, may become a key element in regional economic growth and in capturing global opportunities (Harrison, 1992, Amin and Thrift, 1994).[9] The resulting advantages in terms of value creation etc. may result in spatial 'lock-in' for those firms with knock-on implications for other parts of that firm's network (see Grabher, 1993; Scott, 1998). Similarly, national and local government policies (training programmes, tax advantages etc.) may function to embed particular parts of larger actor-networks in particular cities or regions, in order to support the formation of new nodes in global networks, or what Hein (2000) describes as 'new islands of an archipelago economy'. But the positive effects of embeddedness in a particular place cannot be taken for granted over time. For example, once a lead firm cuts its ties within a region (for instance, by disinvestment or plant closure), a process of disembedding takes place (Pike et al., 2000: 60-1), potentially undermining the previous base for economic growth and value capture. From a development point of view, then, the mode of territorial embeddedness or the degree of an actor's commitment to a particular location is an important factor for value creation, enhancement and capture.

These three dimensions of embeddedness are of course closely knitted to one each other, and in combination form the space-time context of socio-economic activity (see Figure 2).

To create a spatial-temporal concept and to avoid a static view of agency and social structure, the three proposed categories of embeddedness have to consider developments over time and changes in the spatial configuration of networks on different scales. To paraphrase Amin's (2002: 387) notion, with a historicised sense of scale, embeddedness (like globalisation) can be interpreted as a spatial process elevating the tension between territorial relationships and transterritorial developments. Or, as Yeung (2002: 5-6) has put it, "[w]e must steer the field towards an 'ontological turn' in which dynamic and heterogeneous

relations among actors are conceptualised as constituting the essential foundations of socio-spatial existence". This view has to take seriously the dynamic aspects of embedding as well as disembedding as processes. How can we think about the nature of networks and the idea of embeddedness, then? A helpful metaphor for this purpose is – following to an extent actor-network theory (ANT) – the rhizome. ANT highlights the importance of linking time and space within heterogeneous networks, based on a relational (rather than merely Euclidean) understanding of space as topological stratifications that bring together time and space within a network of agents (Murdoch, 1998: 360). This conceptualisation distinguishes spaces of prescription and spaces of negotiation, the latter being "spaces of fluidity, flux and variation as unstable actors come together to negotiate their memberships and affiliations (and could be seen as topological or *rhizomatic* spaces)" (ibid: 370; emphasis added). It is important to note, however, that ANT is critical of studies that – like this one – are concerned only with social relations, since ANT uses the term "agent" for both human and non-human actors alike. I do not share this view of agency as including non-human actors. However, the relational understanding of agency, networks, and space is fundamental for our discussion of embeddedness and social structure.

Developed by the French post-structuralist philosopher Gilles Deleuze and his co-author Félix Guattari (1976, 1988), the metaphor of the rhizome is used to describe heterogeneous networks of all kinds. Or, as Bruno Latour once stated in an interview about actor-network theory: "Rhizome is the perfect word for network". In its botanical sense, a rhizome is a subterranean stem that grows into a network and in places shoots into bulbs and tubers. In its metaphorical sense, according to Deleuze and Guattari (1988), a rhizome - as opposed to trunk roots - can be thought of as having the following principles:

- Connection and heterogeneity: these principles imply that each point can (and has to) be linked to any other point of the network. The different connections may remain independent from each other, i.e. there is an ingenuousness with regard to the nature of

these connections. Like language, which is the matter in Deleuze and Guattari's work, networks can be understood as an essentially heterogeneous reality.

- Multiplicity: reflects the multi-dimensionality of a rhizome and its processual character. This principle acknowledges the variety of horizontal, vertical, and lateral relations within a network, as well as its alterability over time.
- Asignifying rupture: a rhizome or network can be broken or a connection within it be destroyed arbitrarily, without doing significant damage to the rest of the rhizome or network structure.
- Cartography and decalcomania: "The rhizome is altogether different, a map and not a tracing. [...] The map is open and connectable in all of its dimensions; it is detachable, reversible, susceptible, to constant modification. It can be torn, reversed, adapted to any kind of mounting, reworked by any individual group, or social formation" (Deleuze and Guattari, 1988:12).

How, then, does the rhizome metaphor contribute to our understanding of embeddedness and networks? Firstly, it represents a post-structuralist concept that helps to overcome some constraints related to structural approaches which barely take the role of agency and actors into account (Larner and Le Heron, 2002: 417). Secondly, it illustrates what actor-network theorists might call " a geography of 'topologies' (Mol and Law, 1994). It should be stated here that using the 'rhizome language' does by no means imply the attempt of any biologistic reductionism to social and geographical analysis, it rather can be used as an aid to structure our reasoning about embeddedness or as a "new IMAGE of thought, one which thinks of the world as a network of multiple and branching roots 'with no central axis, no unified point of origin, and no given direction of growth" (Thrift, 2000: 716). For that matter, the basic rhizome characteristics, as developed by Deleuze and Guattari and outlined above, may help to think through our conceptualisation of embeddedness and (social) networks. The three dimensions of embeddedness developed earlier can be represented through this metaphor as follows:

- Societal embeddedness is signified as the "genetic code" of a rhizome or part of it, which can be transmitted via the different connections and links that make up the rhizome. Network actors, be they individuals or collectives, have a history that shapes their perception, strategies and actions, which therefore are path-dependent. This 'genetic code' represents the local/regional/national 'culture', the importance of which for economic success is recognised in many studies on different geographical levels, e.g. regarding the 'local cultures' of the Silicon Valley, the different 'cultures' of national innovation systems or business systems. If actors engage in global production networks, they carry the genetic code with them when going abroad, and at the same time are exposed to the different cultures of their foreign network partners. As a result, heterogeneous as well as hybrid forms of networks may develop, not least due to the principle of asignifying rupture, which transforms the structure of GPN.
- Network embeddedness is related to the issues of connectivity, heterogeneity, and cartography in this metaphor, and their change and mutability over time. This includes the notion of embedding and disembedding as a process rather than as a spatial and temporal fix und thus leads to a more dynamic understanding of relations within networks. While network embeddedness indeed has an inherent spatial component, due to the concrete location of actors within the network, this spatiality is no precondition for network embeddedness, but rather a descriptive dimension, subject to the 'cartography' and 'decalcomania' principles outlined above. It is about the connections between heterogeneous actors, regardless of their locations, rather than restricted to only one geographical scale.
- Territorial embeddedness, on the other hand, can be represented in the "bulbs and tubers" – according to Deleuze's picture of rhizomes, i.e. the "localised" manifestations of networks or the nodes in global networks, without the danger of scalar dualisms (the global versus the local). Global production networks are by no means deterritorialised, although I have made clear that localisation is not the only spatial logic of embeddedness. In the case of GPN, territorial embeddedness occurs when foreign actors build considerable links to the actors present within the respective host localities. Or, in terms of the rhizome metaphor, "rhizomatics is about lines of flow and flight, processes of territorialization, deterritorialization, and reterritorialization, networks of partial and constantly changing connections" (Thrift, 2000: 716).

It is the simultaneity of societal, network, and territorial embeddedness that shapes networks and the spatial-temporal structures of economic action. Being influenced by their social and cultural heritage, actors engage in a multiplicity of relations with other actors in different places, creating network structures that are discontinually territorial. Economic geography over the last decade has highlighted clusters and local innovative milieus as one form of socio-economic networks, where endogenous actors cooperate within a region and hence all three forms of embeddedness are territorialised. But translocal (including transnational) links by actors embedded in multiple networks play no less a crucial role in economic organisation and development, as work on transnational innovation networks (cf. Coe and Bunnell, 2003) or transnational elites (cf. Sklair 2001) has clearly shown.

V Conclusion

"[E]conomic activity is socially constructed and maintained and historically determined by individual and collective actions expressed through organisations and institutions" (Wilkinson, 1997: 309). This quotation sums up many of the issues raised in our analysis. Re-assessing the seminal work of Polanyi and Granovetter, it becomes clear that embeddedness plays a crucial role for economic activities, not only in pre-modern societies, but also in modern market economies. Hence, it is not only the price mechanism that shapes the nature of economic exchange, but the social interaction of individual and collective actors. By explicating our understanding of actors and social networks in forming embedded, dynamic structures, I have tried to unravel the plethora of hitherto circulating typologies and definitions of embeddedness, in order to achieve a consistent, comprehensive and – with regard to Markusen's criticism stated in the introduction - less fuzzy concept of what comprises embeddedness and who is embedded in what. Such a concept has to be spatial-temporal, incorporating the formation and change of social structures in time and space. Using

the network metaphor of a rhizome is a possibility to think through the categories of societal, network and territorial embeddedness that characterise economic activity and the related network structures. This helps to better inform and structure our analysis of socio-economic development, which is shaped by the history of its actors, the structure of its social networks of economic activity, and not least its territorial conditions.

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Figure 1: The Hierarchy of Concepts in Polanyi

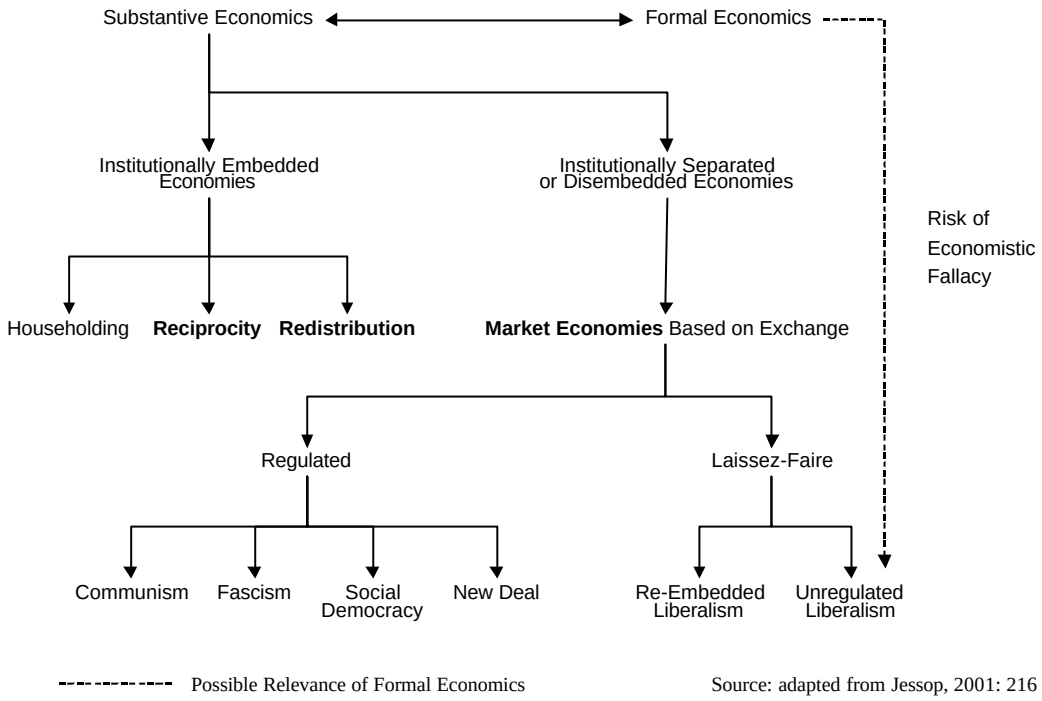
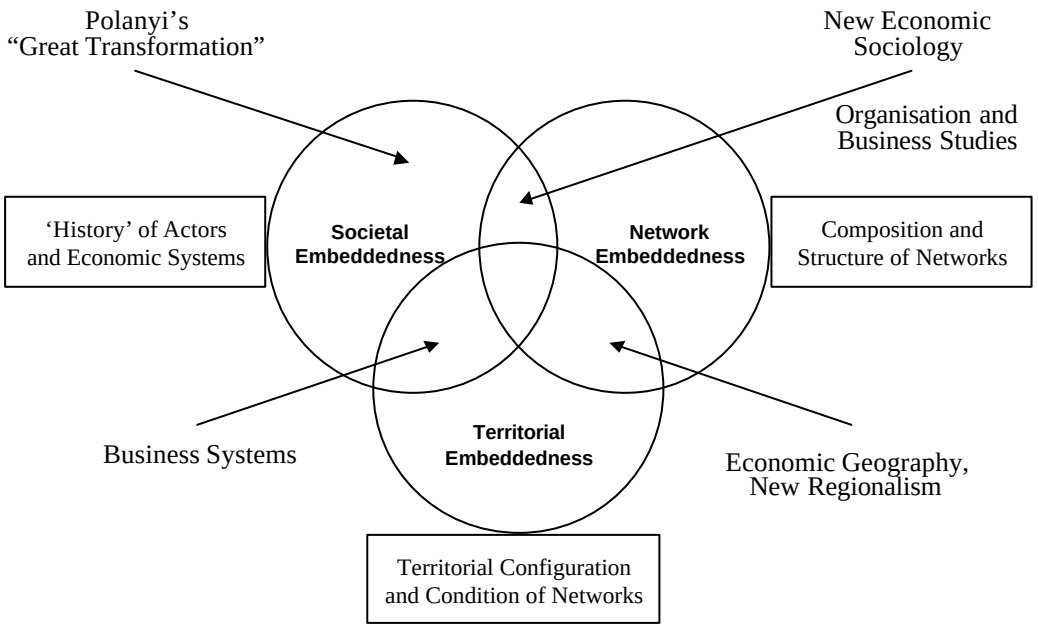


Figure 2: Fundamental Categories of Embeddedness



[1] In the remainder of this paper, I will use the terms 'local' and 'regional' synonymously.
[2] For a critical examination of the the intellectual history of Polanyi's 'Transformation', see Block, 2002.
[3] In his later work, Polanyi insists that the forms of integration or exchange systems he developed do not represent a sequence in time or 'stages' of development. Indeed, he saw the rise of redistribution in some modern industrial states of his time, namely the Soviet Union, but, then, this was a socialist society and not a – in his view - disembedded market economy.
[4] For a discussion of embeddedness and networks with regard to the market-hierarchy questions raised by Coase and Williamson, see c.f. Amin and Hausner, 1997; Oinas, 1997; Glückler, 2001.
[5] "However, in much of the most recent literature […], the impact of asymmetric power relations on network relationships has been all but ignored. Certainly, co-operation and collaborate (sic)[…] have been recognised but not the more brutal exercise of power, domination and subordination" (Taylor, 2000: 201).
[6] In this context, Sayer (2000) warns of the danger of idealising trust and embedded economic systems as being necessarily benign.
[7] Herein lies the foundation of most discourses about the convergence of capitalist systems and the institutional limits to it (cf. Gertler, 2001; Harzing and Sorge, 2003).
[8] Of course, the notion of culture is another example of a widely used, but rarely stringently elaborated concept. Without going into detail here about the nature of culture in organisation studies and economic geography (for a discussion see cf. Gertler, 1997; Alvesson, 2000; Barnett, 2001), culture for this purpose is broadly conceived as the 'heritage' of an actor that links it to the 'society' it emanates from.
[9] There is also a downside. The nature of local networks and socio-economic relations may under certain circumstances generate an inability to capture global opportunities and lead to regional economic downturn (Oinas, 1997: 26). Strong embeddedness, therefore, is not necessarily a 'good' or positive quality of networks or its agents.