

## CHAPTER 18

# PERSPECTIVES ON INTER- ORGANIZATIONAL RELATIONS IN ECONOMIC GEOGRAPHY

HENRY WAI-CHUNG YEUNG

## INTRODUCTION

ECONOMIC geography is an academic discipline that is fundamentally concerned with describing and explaining the spatial organization of economic activity (see Clark *et al.* 2000; Sheppard and Barnes 2000; Barnes *et al.* 2003). This spatiality of the economy can be analysed in relation to location in space, place, and scale of economic processes and outcomes. While locational analysis is often a straightforward exercise of mapping spatial differentiation, the incorporation of place and scale in the analytical lexicons of economic geography offers much more sophistication in economic-geographical interpretations. Specifically, a grounded concern for *places* allows us to explore how economic processes are embedded inextricably in the social, cultural, institutional, and political contexts of these places. A consideration of

*geographical scale* permits economic systems to be seen as ‘open’ and simultaneously driven by a multitude of processes from the individual/household scale up to the global scale. Taken together, economic geography is an eclectic discipline that draws upon a range of cognate disciplines such as economics, sociology, organization studies, and political economy. And yet its distinctive purpose and scope remain with the *spatiality* of economic processes operating in different places and at different scales. As Clark *et al.* (2000: 3–4; emphasis omitted) noted in their introduction to the *Oxford Handbook of Economic Geography*, ‘[d]ifference, differentiation, and heterogeneity characterize the economic landscape, and are part and parcel of the intellectual agenda motivating the field of economic geography’.

Situated in the above context, this chapter examines how inter-organizational relations (IOR) has developed and been analysed in economic geography during the past two decades (see also Yeung 1994, 2000; Grabher, 2006; Hess and Yeung 2006a). To make apparent different perspectives in economic geography that are linked directly to IOR as a field of study, I have chosen to review and evaluate two major strands of the literature: (1) inter-organizational networks and spatial development; and (2) relational networks and global production networks (GPNs). Whereas the first strand of geographical perspectives deploys inter-organizational networks to explain the nature and characteristics of economic development at local and regional scales (see also Geddes, Chapter 8), the second body of work focuses primarily on relational networks in GPNs and places a great deal of emphasis on how inter-organizational relations are mediated through complex power relations constituted at multiple geographical scales, particularly at the global scale (see also Lazerson and Lorenzoni, Chapter 2).

In doing so, I have two specific aims in this critical review. First, I seek to introduce readers to the diverse terrain of theoretical literature on IOR in economic geography. This diversity results from the import of key conceptual ideas from allied disciplines by economic geographers, who in turn put these concepts into spatial perspectives or deploy them to explain geographical problems. Partly because of this import, economic-geographical perspectives on IOR may not appear to be privileging specific economic and/or geographical concepts; there may not be core theories that dominate geographical analysis. Instead, these economic-geographical perspectives are best described as ‘recombinant perspectives’ exhibiting conceptual traits from leading theories in cognate disciplines. Their commonality, however, is predicated on the articulation of *place*, *space*, and *scale* in their explanatory apparatus. There is therefore a great deal of interdisciplinary connection between these perspectives and those in cognate disciplines. It also raises the important and, yet difficult, issue of how we judge the adequacy of these theoretical perspectives in economic geography. By tracing these interconnections, this introduction is intentionally interdisciplinary in nature, though explicit attention will be paid to conceptual developments in economic geography. Second, I assess the prospects of these economic-geographical perspectives in order to develop a future research

agenda that might interest researchers intending to articulate a geographical dimension in their research on IOR. Here, I attempt to make explicit the value-addedness of adopting economic-geographical perspectives in analysing inter-organizational relations.

The chapter is organized into five sections. The next section reviews the emergence of the network perspective on IOR in economic geography since the late 1980s. Unlike its counterparts in organization studies and industrial economics, the network perspective in economic geography focuses specifically on the interfaces between IOR and *local and regional development*. In other words, the spatiality of IOR and their outcomes are privileged in this perspective. The third section extends this geographical focus on networks to address the rise of the 'relational turn' during the late 1990s. There is a shift from economic logic to the social and cultural embeddedness of IOR in this latter literature. In this growing emphasis on relational properties of actors and agents, I am particularly concerned with how *power* in IOR is conceptualized in this 'relational turn' and how power relations operate through global production networks (GPNs) (see also Huxham and Beech, Chapter 21, for accounts of power in IOR). The spatiality of power in IOR such as GPNs becomes the primary focus of analysis. The penultimate section assesses the prospects and future directions of research on IOR in economic geography in general and GPNs in particular. This is followed by a brief conclusion.

## NETWORK ANALYSIS, INTER-ORGANIZATIONAL RELATIONS, AND REGIONAL DEVELOPMENT

---

Economic geography has a long tradition of analysing the spatial relationships of business firms, though the focus on IOR among firms is a relatively recent phenomenon. During the 1950s and the 1960s, economic geography was preoccupied with the locational and behavioural patterns of firms in space (see Krumme 1969; Hayter and Watts 1983; Dicken 1990). The emergence of a Marxist radical approach in the 1970s and the 1980s led to a major theoretical and empirical reorientation of research in industrial (economic) geography. This radical literature subsumed the firm under dominant capitalist class relations such that capital's logic explains the spatial behaviour of the firm. In both strands of literature, the firm remained as the singular unit of analysis. There were virtually no efforts to analyse how similar and different firms are interrelated and how these inter-organizational relationships might shape the space-economy.

The late 1980s witnessed the rapid emergence of the analysis of *networks of inter-firm relationships* in economic geography (Christensen *et al.* 1990; Camagni 1991, 1992; Amin and Thrift 1992; Dicken and Thrift 1992; see Yeung 1994). This emergence echoed the then re-emerging interest in the notion of the 'network' form of organization in industrial economics (Best 1990; Axelson and Easton 1992), international business (Bartlett and Ghoshal 1989; Forsgren and Johanson 1992), organizational analysis (Nohria and Eccles 1992), and economic sociology (Thompson *et al.* 1991; Grabher 1993). The strength of this network approach is that 'it treats the phenomena as a whole and allows for the discovery of relationships invisible to analysis of the discrete parts' (Green 1993: 73). This body of literature places greater emphasis on the *network form* of industrial organization. By re-asserting the embedded role of the firm in social relations, network analysis distinguishes itself from the earlier perspectives on industrial systems (Amin 1994; Yeung 2005a) (see also discussions of embeddedness in Chapter 20—Bachmann and Zaheer, Chapter 9—Jones and Lichtenstein). The purpose of this network analysis is to revitalize the neglected aspects of industrial organization in space. In the following two subsections, I will first outline the rise of network analysis in economic geography and then focus specifically on how one dominant strand of literature deploys relational networks to explain local and regional development.

## Networks of Inter-organizational Relations

In general, we can identify three aspects of this emerging network analysis in economic geography (see Yeung 1994): (1) the concepts of industrial districts, (2) the evolution of networks, and (3) the spatial organization of networks. In relation to the post-Fordism and flexible specialization debate that dominated economic geography during the late 1980s and the early 1990s, the concepts of 'local milieu', industrial districts, and 'external networks' received significant research attention up until the mid-1990s (see also Chapter 2—Lazerson and Lorenzoni). A local milieu is defined as 'the territorial tank of network relationships and of common cultural or psychological attitudes' (Camagni 1992: 3). The definition of an industrial district is, however, far from easy and clear-cut. Some economic geographers prefer to define an industrial district on the basis of territorial agglomeration (e.g. Scott 1988, 1992). Others think that an industrial district has no real significance if embedded social relations, expressed in trust mechanisms, atmosphere, and firm formation, are not present (e.g. Harrison 1992; Lorenz 1993). Still, there is a sense of *spatial formation* in these different interpretations of industrial districts.

Through the process of socialization, both local milieu and external networks become complementary and mutually reinforcing operators in the industrial organization of business firms. Two reasons for their mutual co-existence are raised: (1)

to avoid a decrease in its own innovative capacity and (2) to link up to the synergy of a particular collective milieu (often known as 'place'). Inter-organizational relationships, nonetheless, do not only generate benefits. To cite the example of cooperative agreements, these relationships also come with a certain amount of costs, such as the costs of unification of distinct structures, difficulties in collaboration at a distance, and problems in defining the network pool. The spatial evolution of networks and/or towards a network form of industrial organization was analysed in Camagni (1991, 1992). Networks evolve through closer or more formalized linkages and through an upgrading or follow-up of linkages. Two critical conditions in this network evolution are important. First, there is an emergence of a learning process in cooperation capability. A firm that has enormous knowledge and experience of network relationships is likely to succeed in its subsequent network relationships (see also Chapter 23—Nooteboom). Second, a parallel investment in intangible assets is necessary and represented by a reputation of reliability in cooperation and trust accumulation facilitated by spatial proximity.

In these geographical perspectives, network relations are conceptualized as *inter-firm relations* of externalized and institutional transactions and relationships. Firms come together in network relations *in situ* by virtue of the fact that they simultaneously compete and cooperate with each other in local and transnational platforms. In the context of analysing regional development, Cooke and Morgan (1993) have proposed three dimensions for analysing inter-firm network relations:

1. close and long-lasting ties between producers and users, capturing learning-by-using effects;
2. networking (and joint ventures) as a method for reaping both specialization and coordination gains; and
3. long-run and cooperative subcontracting as far as possible, in order to promote joint technical innovations.

Using a mix of firm-level surveys and case studies, empirical research into networks as IOR in economic geography during the 1990s has offered diverse and, sometimes, conflicting findings (see a critical review in Yeung 2000). The spatial formation and territorial outcome of networks as IOR remain as the main analytical objects in these studies. The spatial forms of inter-organizational network relations are identified in joint ventures, subcontracting, cooperative and non-equity agreements, strategic alliances, licensing and franchising agreements, ethnic and personal networks, and collaborative marketing and R&D and technology financing. Whereas business networks tend to be organized through informal ties and socialization processes, the levels of formality and bureaucratic control tend to be higher in supplier commodity chains, production networks, and innovative networks (see Chapter 3—Johnsen *et al.* and Chapter 4—Dacin *et al.*, this volume). Business networks, for example, are often based on interpersonal ties, informal

information flows, resource sharing, and decentralized learning and knowledge. These inter-organizational networks are often embedded in localities with very strong institutional legacies and linkages, although Amin and Cohendet (1999) question the adequacy of a firm's dependence on local tacit knowledge in the face of radical shifts in markets and technologies.

Inter-organizational networks are also found to be increasingly deployed as a sourcing and production strategy. Recent studies in economic geography have shown that power relations in supplier commodity chains tend to privilege downstream distributors and retailers rather than upstream producers and manufacturers. In the case of OEM (original equipment manufacturing) arrangements and subcontracting, there is limited evidence to suggest the emergence of hierarchical networks between major manufacturers and their functionally integrated suppliers. Other studies have investigated the role of 'network externalities' such as tacit knowledge and interpersonal trusts in facilitating information flows, production sharing, and diffusion of technologies. These externalities are particularly important for the (re)production of innovative networks in specific places and regions.

The above economic-geographical analysis of network relations, however, has some limitations that are taken up in the 'relational turn' and, specifically, the global production networks perspective (see later sections). First, relatively insufficient attention has been paid to the social-cultural and institutional embeddedness of inter-organizational networks. The focus in the literature is largely on economic benefits and costs in inter-firm transaction relationships (e.g. Camagni 1991, 1992; also Scott 1988, 1992, 1993). Production activities are found to assume different organizational forms *in situ*. Complex inter-firm transactional relations become the analytical focus and these inter-organizational relations serve as the basis of the proposed vertical disintegration and agglomeration of production systems in certain geographical locations. This approach remains firmly rooted in the economic efficiency explanations of the formation and evolution of IOR.

Second, *intra*-firm relationships are largely overlooked. This omission is serious because there is an increasing trend towards networks of intra-firm relationships that may displace the classical hierarchical governance relationships. The distinction between the informal local milieu and formal external networks (Camagni 1991, 1992) also implies that there are no networks embedded and reconstructed in localities. There is no real reason why local networks cannot emerge from the informal local milieu. Moreover, this typology of network attributes is primarily a regurgitation of the resource-dependence perspective of network analysis (see Chapter 14—Lotia and Hardy). Its main problem lies in its inability to show the causal powers of individual business organizations and their interrelationship within specific time-space contingent contexts. This inherent spatiality of power becomes the analytical focus of the 'relational turn' as well.

Third, earlier network analysis in economic geography is concerned with the empirical outcomes of the networks (e.g. cooperative arrangements), not their causal formations and social constructions. Firms are thus atomized in this form of network analysis (see Chapter 11—Kenis and Oerlemans). In short, any understanding of the nature and dynamics of network relations in the socio-spatial organization of business operations must take into account the notion of power and power relations. As argued by Dicken and Thrift (1992: 285–6; emphasis in original), the organization of production chains and production systems through business organizations needs to be conceptualized ‘as a complex set of *networks* of inter-relationships between firms which have differing degrees of *power and influence*’. I will elaborate on this idea in the next section on the ‘relational turn’.

## Relational Assets and Regional Development

Notwithstanding the above concern with inter-organizational networks in industrial districts in economic geography, regions and regional development had emerged as one of the leading research themes by the mid-1990s. In this burgeoning literature, inter-organizational relations take a different theoretical ‘framing’. While the earlier network analysis emphasizes economic costs and efficiency in inter-firm transactions and collaborations, this focus on regional development takes a ‘softer’ approach to IOR. As the cornerstone of what might be termed a ‘relational turn’ in economic geography (Bathelt and Glückler 2003; Yeung 2005*b*), this literature deploys the concept *relational assets* to analyse the role of social and institutional relations in shaping local and regional development. This research moves away from a neoclassical economic analysis of local and regional development that focuses primarily on how economic factors of production and other resource endowments shape the absolute and comparative advantages of specific localities and regions.

Drawing upon institutional and evolutionary perspectives (for the latter, see also Chapters 12—Lomi *et al.*), this relational assets approach attempts to explain local and regional development as a spatial outcome of the resurgence of regional economies characterized by Storper (1997: 26) as the ‘holy trinity’ of *technology*, *organizations*, and *territories* (see also Bathelt and Glückler 2003; Bathelt *et al.* 2004; Tallman *et al.* 2004). Territorial development is theorized to be embedded in networks of relational assets and spatial proximity particularly at the local and regional scales such that ‘territorialization is often tied to specific interdependencies in economic life’ (Storper 1997: 20). IOR form a critical component of these specific interdependencies. This shift from neoclassical notions of *comparative advantage* to institutionalist notions of *relational assets* illustrates how different relational thinking (neoclassical versus institutionalism) might lead to different conceptual

themes and explanatory factors to be explored (comparative advantage versus relational assets). Instead of exploring inter-firm transactional relations embedded in agglomerations, economic geographers have advocated several interrelated concepts to explain the spatial origins and impact of relational assets: 'institutional thickness' (Amin and Thrift 1994), 'untraded interdependencies' (Storper 1995; Storper and Salais 1997; Tallman *et al.* 2004), 'learning regions' (Asheim 1996; Maskell and Malmberg 1999; cf. Hudson 1999), 'associational economies' (Cooke and Morgan 1998), 'collective order' (Scott 1998), and 'local buzz' (Bathelt *et al.* 2004).

Amin and Thrift (1994), for example, argue that a locality can stimulate the growth and competitiveness of business organizations, if it possesses elements that contribute to the 'institutional thickness' arising from local agglomerations and strong IOR. Some of these elements of local agglomerations are (1) strong institutional presence defined by the large number of interrelated institutions and organizations; (2) high levels of interaction amongst these institutions in a local area; (3) development of sharply defined domination and coalitions through collective representation; and (4) development of a mutual awareness. Effective cultivation of these elements of 'institutional thickness' is central to the generation of success within what they call 'neo-Marshallian nodes' in global networks (Amin and Thrift 1992). Some of best examples of these nodes filled with Marshall's idea of cooperative atmosphere are Silicon Valley in high-tech development, City of London in global finance, and the Third Italy in precision machinery. To Amin and Thrift, what is most important is not the mere presence of institutions *per se*, but rather the processes of institutionalization, i.e. the institutionalizing processes that both underpin and stimulate a diffused entrepreneurship among different organizations, ranging from business firms to pro-growth institutions and research institutes. Collectively, this theoretical emphasis on relational assets offers a variety of non-economic factors such as local rules, reflexive knowledge, conventions, and contexts that explain the agglomeration of firms and organizations in specific locations, the development of strong inter-organizational relations, and, subsequently, the occurrence of local and regional development.

Furthermore, this geographic literature extends beyond inter-firm network analysis and examines the *geographical outcomes* of networking among firms and institutions. These recent studies have shown that spatial agglomeration and the formation of territorial production networks are clearly important and, yet, often overlooked aspects of network analysis (Malmberg *et al.* 1996; Malmberg and Maskell 1997, 2002; Maskell and Malmberg 1999; Phelps 2004). Theoretical arguments in this 'relational turn' are situated in the contemporary intellectual and policy debate about globalization and its multifaceted implications for local and regional development (Cox 1997; Yeung 1998; Kelly 1999; Olds *et al.* 1999; Peck and Yeung 2003; Dicken 2004). There is, however, a significantly wide spectrum of recent empirical studies, some in favour and others against these theoretical



arguments for agglomeration tendencies (e.g. Harrison *et al.* 1996; Gertler and DiGiovanna 1997; cf. Forrant and Flynn 1998; Pinch and Henry 1999; Martin and Sunley 2003; Tallman *et al.* 2004).

Too much ‘institutional thickness’, as it turns out in specific local contexts, is not necessarily always a good thing. Bennett (1997: 332) cautions that ‘[a] dense network or strong institutional structure is no use economically if it is anti-growth’. Similarly, Scott (1998: 110) argues that ‘not all forms of institutional thickness provide an automatic guarantee of economic dynamism. Indeed, institutional thickness can be a positive hindrance to development and growth where stubbornly dysfunctional attitudes and habits are firmly locked in to the local economic system’. He has cited the case of the Los Angeles jewellery industry to justify his cautionary claim (see also Berndt 1998 for the case of Ruhr firms in Germany). Other researchers have also argued that there may be contradictions in the politicization of local and community-based economic initiatives, for example competition among localities, local differentiation and organizational fragmentation of economic agencies within localities (Eisenschitz and Gough 1996; Cox and Wood 1997; MacLeod 1997; Ward 1997; Huggins 1998; Raco 1998; Grabher and Ibert 2006). ‘Institutional thickness’ is a double-edged sword insofar as firm growth and regional development are concerned. It may lead to lock-in effects that may stifle inter-organizational collaborations and renewal.

## POWER, RELATIONAL NETWORKS, AND GLOBAL PRODUCTION NETWORKS

While the above relational assets framework has contributed to the ‘relational turn’ in economic geography and placed inter-organizational relations (particularly firm-institution relations) as its central analytical focus, its spatial locus of analysis remains largely in local and regional development and its analytical anchor in endogenous (often non-economic) growth factors. Since the early 1990s, however, another strand of perspectives on IOR has emerged that unravels *relational embeddedness* in all kinds of networks among economic actors—individuals, firms, and organizations (see also Chapter 11—Kenis and Oerlemans). Some economic geographers emphasize *inter-organizational networks* in order to understand industrialization, production, and territorial development. Drawing upon Polanyi’s (1944) notion of differential embeddedness between economy and society in pre-capitalist and capitalist times and its recent reformulation in ‘new economic sociology’ (Granovetter 1985; Guillén *et al.* 2003; Smelser and Swedberg 2005), Dicken and Thrift (1992: 283) argue for the case of studying different organizational forms

and processes: ‘the importance of organization as a cognitive, cultural, social and political (and spatial) framework for doing business has increasingly come to be realized. Indeed, nowadays, organization is often equated with “culture”, envisaged as a set of conventions’.

In retrospect, the concept of embeddedness and its import into economic geography represents a telling move away from studying the social relations of production and spatial structures in the radical political economy of the 1980s (see Massey 1984; Gregory and Urry 1985; Storper and Walker 1989; Sayer and Walker 1992), towards a broader conceptualization of the socio-spatial organization of production, prefiguring the extensive discussions that have taken place since the early 1990s around network paradigms, associational economies, and relational geographies (see Storper 1989; Camagni 1991; Cooke and Morgan 1993, 1998; Grabher 1993, 2006; Yeung 1994, 2000, 2005*b*; Dicken *et al.* 2001; Hess 2004; Hess and Yeung 2006*a*). This emphasis on networks and their associated power relations has also facilitated the rediscovery of the firm in economic geography (Taylor and Asheim 2001; Yeung 2005*a*), in part because it establishes an alternative analytical path between the methodological individualism of narrowly firm-centric approaches (e.g. industrial location models and the geography of enterprise approach) and the strong sense of structural determinism that is evident in studies of geographical industrialization and uneven development (e.g. the Marxist radical approach).

The recent ‘relational turn’ in economic geography has shed important light on the role of power and power relations in shaping IOR. The empirical realization of these different forms of emergent power depends on specific spatial contexts. The process of connecting different discrete categories necessitates an appreciation of the tension between these categories. What is often lacking in the earlier form of relational economic geography is analytical focus on the tension and power relations *between*—not *within*—such categories as actors, firms, organizations, institutions, and so on. Focusing on the inherent tension in IOR and its manifestation through differential power relations also allows us to incorporate actor-specific *practice* into our analysis of contemporary economic change. This section first examines how emergent power has been theorized in the recent ‘relational turn’ in economic geography (see also Dicken *et al.* 2001; Yeung 2005*b*). It then shows how power and power relations can be used to develop a particular analytical framework that addresses IOR beyond the local and regional scales—the global production networks (GPN) framework (see also Henderson *et al.* 2002; Coe *et al.* 2004; Hess and Yeung 2006*a*).

## Emergent Power in Relational Networks

If relationality, such as that between different organizations, is constituted through interactions, interconnections, and tensions, then there is clearly a great deal of

heterogeneity and unevenness in these relational processes. This heterogeneity and unevenness do not refer to the socio-spatial *outcomes* themselves. Instead, I refer to the inherent heterogeneity and unevenness in the constitution and configuration of IOR that in turn produce concrete outcomes. There are thus different *forms of power* embedded in different configurations of IOR. Allen (2003) has analysed the relations between spatiality and power at a general level and developed a relational notion of the 'spatial assemblages of power' in which spatiality is imbued with power *and* power is intertwined with spatiality (cf. Lefebvre 1991). To understand how power is unleashed through heterogeneous IOR, we need to unpack its causal nature and concrete forms. Power is a particularly difficult and slippery concept in social science. Lukes (1986: 17) concludes that

there are various answers, all deeply familiar, which respond to our interests in both the outcomes and the location of power. Perhaps this explains why, in our ordinary unreflective judgements and comparisons of power, we normally know what we mean and have little difficulty in understanding one another, yet every attempt at a single general answer to the question has failed and seems likely to fail.

Following Allen's (2003: 2) conception of power as 'a relational effect of social interaction', I define power as the relational effects of the capacity to influence *and* the exercise of this capacity through actor-specific practice. It is thus defined in neither simply positional nor practical terms because it is encapsulated in *both* position and practice. As such, power is both a relational and an emergent construct manifested through practice. Power is a *relational* attribute because its effects are experienced through the process of its mobilization and practice. For example, we think of an organization as powerful or having power when we know of prior outcomes arising from the structures of relations in which this organization is embedded. This organization can be deemed to possess a *capacity* to act within those structures of relations. Its power is dependent on the fact that this capacity is exercised eventually and successfully. Power is therefore not an inherently possessed quality as in the Weberian concept of bureaucracy and 'iron cage' (Weber 1947; see Clegg 1990), the resource-dependency school of organization theories (Pfeffer and Salancik 1978; Pfeffer 1981, 1992; see also Chapter 14 by Lotia and Hardy), and the structural power school of global political economy (Strange 1994). Power is also not an organization-specific property as in social network analysis (Burt 1982, 1992, 2004; Emirbayer and Goodwin 1994; Kilduff and Tsai 2003; see also Chapter 11—Kenis and Oerlemans—in this volume). In this latter literature, an organization's power in a network is a function of its positionality or strength of association. But the structure of a network tells us little about the qualitative nature of the relations among organizations that are far more important than structures *per se*.

Instead, I see power as the emergent effects of *social practice* among actors in different organizations who have the capacity and resources to influence outcomes

(compare with discussion in Chapter 21—Huxham and Beech). Social actors are thus critical in the mediation of power as relational effects, although they do not possess power *per se*. Theorizing overlapping contexts and rationalities of actors, Ettlinger (2003: 157) argues that theories privileging network relations are ‘insufficient to explain how different types of connections among different types of actors make a difference, and do so in different [spatial] contexts’. A relational view also conceptualizes power as an *emergent* attribute such that the sum of heterogeneous relations is much greater than that of individual parts. The emergence of power from these sets of relations represents a particular kind of causal effect because the presence of their constitutive parts (e.g. actors, organizations, or structures) precedes any concrete effects or outcomes. Revisiting the two concepts mentioned in the earlier section, the emergent power of ‘relational assets’ and ‘institutional thickness’ is clearly greater than the sum of individual assets or institutions in a particular region. The sheer presence of local assets (e.g. technological competencies) or local institutions (e.g. pro-development coalitions) does not necessarily constitute an emergent effect propelling superior firm performance and regional development. The territorialized relationships between organizations and space are also highly intertwined in the sense that firms produce places through their place-based activities *and* places produce firms via prevailing sets of local institutions, rules, and conventions (see Dicken 2000; Dicken and Malmberg 2001; Hudson 2001; Bathelt *et al.* 2004; Tallman *et al.* 2004).

## Inter-organizational Relations and Global Production Networks

How might then the ideas of embeddedness and emergent power be developed in a geographical perspective that takes the global economy as its analytical subject? This is the place for the global production networks (GPN) perspective that is explicitly grounded in the relevant geographic concepts and literature. The GPN perspective focuses on inter-organizational relations and yet places explanatory emphasis on emergent power in relational networks. Over the last five years, considerable progress has been achieved in developing the GPN perspective for analysing territorial formation and economic development in the global economy. This genre of theoretical development has shown the continuing unevenness of the spatiality of production and consumption, the differentiating role of structural and institutional conditions at various spatial scales, and the differentiated responses and strategies of firms, non-firm organizations, and government bodies shaping the global economy across space and time. Drawing upon Hess and Yeung (2006a), I briefly trace in the following subsections the historical antecedents of the GPN framework and assess the state of the art of this GPN-inspired literature.

As indicated in the Introduction, the GPN framework has a diverse set of intellectual precursors—mostly from outside the discipline of economic geography. Broadly, we can identify four highly influential antecedents in relation to their historical contexts: (1) the value chain framework in strategic management since the early 1980s; (2) the networks and embeddedness perspectives in economic and organizational sociology since the mid-1980s; (3) the actor-network analysis in science studies since the mid-1980s; and (4) the global commodity/value chain analysis in economic sociology and development studies since the mid 1990s. Table 18.1 provides a summary of these four strands of literature that pre-dates the GPN framework in economic geography. With hindsight, as the concept of ‘value chain’ was gaining prominence in different research and policy circles through the pioneering work of Porter (1980, 1985) during the early 1980s, explaining the spatial uneven development of capitalist economies was the ‘big issue’ confronting radical economic geographers (e.g. Harvey 1982; Massey 1984; Smith 1984). Interestingly, while both strands of literature took the concept of ‘value’ seriously, there was little cross-fertilization at the conceptual level. At around the same time, the geography of enterprise approach was concerned primarily with territorial systems of business enterprises and their industrial linkages (e.g. Hamilton and Linge 1979, 1981, 1983). The value chain framework eventually found its way into economic geography through the work of Dicken (1986) and subsequently a large body of literature on transnational corporations and regional development.

In retrospect, the value chain framework associated with Porter’s work has provided a crucial but contested analytical concept for the GPN framework—especially in relation to *value* and its uneven creation over space. This explicit concern with how value is created, enhanced, and captured in different spatial configurations fundamentally underpins the theoretical framework developed by researchers associated with what Bathelt (2006) calls the ‘Manchester School’ of global production networks (e.g. Henderson *et al.* 2002; Coe *et al.* 2004). Figure 18.1 illustrates the key conceptual elements of the GPN framework. Here, value is defined in both Marxian notions of surplus value and more conventional understandings in terms of economic rent. The GPN framework thus brings together different strands of the analysis of value in an integrated form. Another important contribution of the value chain framework to the development of GPN work is that it recognizes the conceptual inseparability between manufacturing and service activities in constituting economic production. In the original version of Porter’s value chain, both kinds of economic activities are central to value chain processes. While some economic geographers have long argued for this integral understanding of production in relation to social divisions of labour (see Sayer and Walker 1992), its theoretical significance has become much more magnified through the GPN framework because we simply cannot understand manufacturing activities without a concomitant analysis of how these value activities are organized through a wide

Table 18.1 Antecedents of the global production networks framework

Historical antecedents	Main disciplines	Key concepts	Major authors	Relevance for the GPN Framework in Economic Geography
Value chain framework since the early 1980s	<ul style="list-style-type: none"> <li>Strategic management</li> </ul>	<ul style="list-style-type: none"> <li>Stages of production</li> <li>Competitive strategies</li> <li>Competitive advantage</li> </ul>	<ul style="list-style-type: none"> <li>Michael Porter</li> </ul>	<ul style="list-style-type: none"> <li>Spatial (re)organization of production activities</li> <li>Importance of value as a concept in GPN</li> <li>Production as both manufacturing and service activities</li> </ul>
Networks and embeddedness perspectives since the mid-1980s	<ul style="list-style-type: none"> <li>Economic sociology</li> <li>Organization studies</li> <li>Strategic management</li> </ul>	<ul style="list-style-type: none"> <li>Inter-organizational relations to business formation and performance</li> <li>Intertwined relationships between economic action and social structures</li> </ul>	<ul style="list-style-type: none"> <li>Ronald Burt</li> <li>Mark Granovetter</li> <li>Carlos Jarillo</li> <li>Jan Johanson</li> <li>Nitin Nohria</li> <li>Walter Powell</li> </ul>	<ul style="list-style-type: none"> <li>Lead firms and their embedded networks</li> <li>Networks as relations stretching across space</li> <li>Value creation, enhancement, and retention in networks</li> </ul>
Actor-network analysis since the mid-1980s	<ul style="list-style-type: none"> <li>Science and technology studies</li> <li>Poststructuralism in social science</li> </ul>	<ul style="list-style-type: none"> <li>Heterogeneous relations</li> <li>Control from a distance</li> <li>Actants as humans and non-humans</li> </ul>	<ul style="list-style-type: none"> <li>Michel Callon</li> <li>Bruno Latour</li> <li>John Law</li> </ul>	<ul style="list-style-type: none"> <li>Networks and relations as foundation in GPN analysis</li> <li>Power relations among actors in GPNs</li> </ul>
Global commodity and value chain analysis since the mid-1990s	<ul style="list-style-type: none"> <li>Economic sociology</li> <li>Development studies</li> </ul>	<ul style="list-style-type: none"> <li>Commodity production as a sequential chain</li> <li>Value creation in chain organization</li> </ul>	<ul style="list-style-type: none"> <li>Dieter Ernst</li> <li>Gary Gereffi</li> <li>John Humphrey</li> <li>Hubert Schmitz</li> </ul>	<ul style="list-style-type: none"> <li>GPN's spatial configurations and economic development outcomes</li> <li>Institutional influence on GPNs</li> </ul>

Source: Hess and Yeung (2006a).

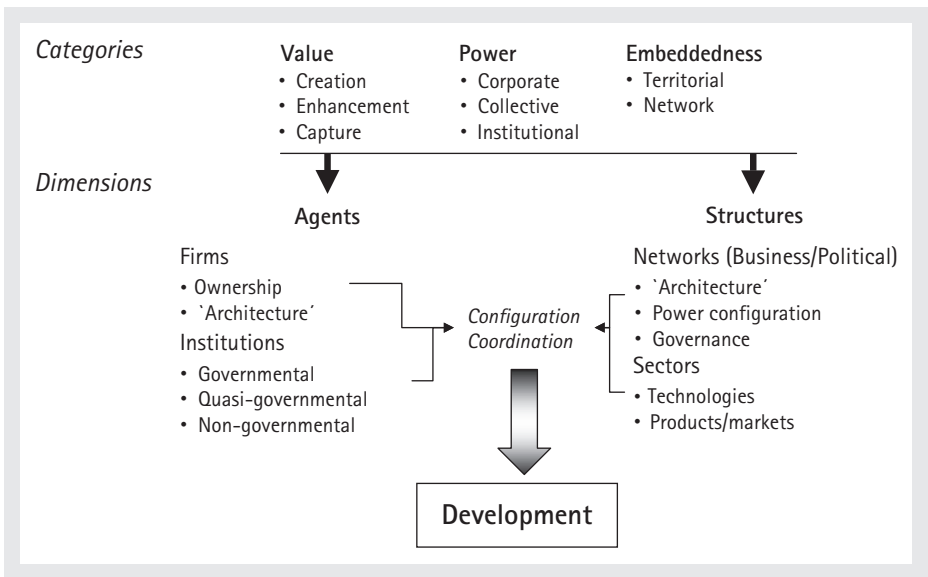


Fig. 18.1 The global production networks framework

Source: Henderson *et al.* (2002: fig. 1).

range of service imperatives (e.g. finance, logistics, and retail). What is more, considering the importance of services in the modern world economy enables research on service-sector GPNs an important task in its own right (see also Coe 2004; Wrigley *et al.* 2005).

This deep concern with the *inter-organizational relations* in GPN activities—manufacturing or service-related—brings us to the second historical antecedent of the GPN framework (see Table 18.1). Since the mid-1980s, networks and embeddedness have come to dominate the lexicon in economic sociology, organization studies, and strategic management (see Guillén *et al.* 2003; Smelser and Swedberg 2005). Sociologists have been interested in social network analysis since the 1920s and the 1930s (Kilduff and Tsai 2003). This genre of work focuses on social interaction as the foundation of society. It was not until the mid-1980s that the idea economic action being embedded in networks of ongoing social relations was resurrected by the work of Granovetter (1985). Following Karl Polanyi's work, Granovetter argued against the atomistic reading of economic relations in transaction cost economics associated with Williamson (1975, 1985). Since then, this idea of embeddedness and networks has strongly reverberated in management and organization studies (see discussion in Chapter 20—Bachmann and Zaheer). An enormous range of theoretical and empirical studies has focused on how network embeddedness can enhance business formation and firm performance (Dacin *et al.* 1999).

While this theoretical development in networks and embeddedness has profoundly impacted upon economic sociology and management studies, its diffusion into economic geography remained relatively slow until the early 1990s (Peck 2005; Grabher 2006). In particular, Dicken and Thrift (1992) have made a strong case for economic geographers to take networks and embeddedness seriously in the geographical analysis of firms and their productive activities. This initiative towards networks and relations in spatial formations provided the disciplinary platform for what has subsequently emerged as the 'relational turn' in new economic geography (Bathelt and Glückler 2003; Yeung 2005*b*). Specifically, a group of economic geographers have taken the embeddedness of economic actors as the central analytical focus in their research (Grabher 1993; Yeung 1994; Hess 2004). By the late 1990s, the concept of embeddedness had become one analytical cornerstone of the GPN framework (Dicken *et al.* 2001; Henderson *et al.* 2002; Coe *et al.* 2004).

What might seemingly be missing in an embeddedness framework that relies on the structural analysis of network relations, however, is the role of *geographical agents* such as firms. This concern with the disappearance of actors in the 'sea' of network relations has compelled economic geographers to understand better the nature and properties of networks and their constituents. As indicated in Table 18.1, the work of actor-network analysis in science and technology studies since the mid-1980s becomes highly useful here (Law and Hassard 1999). The geographical adaptation of this analysis through the work of Thrift (1996) and Murdoch (1997), among others, is critical in the development of an actor-specific version of the GPN framework in Dicken *et al.* (2001). In particular, actors such as the firm are theorized in the GPN framework not as individual agents *per se*, but as a constitutive part of the wider network through which emergent power and effects are realized over space (see earlier section on emergent power). This conception of actors and their power relations improves on the earlier geographical work in industrial systems that focused primarily on economic linkages among firms.

What, then, does this relational framework focusing on networks mean for analysing the global economy? This is where the final strand of literature concerning the global commodity/value chain analysis (GCC/GVC) makes the greatest impact (see Table 18.1). Influenced by Wallerstein's world-system framework, in which different countries are sorted in a cascading order of core, semi-periphery, and periphery economies, the GCC/GVC analysis gained prominence after the mid-1990s, following the work by Gereffi and Korzeniewicz (1990, 1994). Together with other researchers in development studies (e.g. Dieter Ernst, John Humphrey, and Hubert Schmitz), they have constructed an analytical framework that focuses on the *global* scale (Gereffi *et al.* 2005). The GCC/GVC analysis, in particular, has been shown to provide enormously important insights into a wide range of economic development issues such as industrial upgrading,



technological and employment change, market expansion, trade patterns, and so on.

The GCC/GVC analysis, however, does suffer from some significant shortcomings that can be remedied through the GPN framework (see Dicken *et al.* 2001; Henderson *et al.* 2002; Coe *et al.* 2004). First, while the chain concept in the GCC analysis brings multiple geographical scales, particularly the global scale, to the forefront of its analysis, the *geography* of GCCs remains weakly developed and under-theorized—no doubt a reflection of its intellectual origin in sociology. The issue of territoriality is highly aggregated in the GCC framework, identifying the spatial units of analysis as either core or periphery. This is where the GPN framework makes stronger claims because it deals with how actors and organizations in various GPNs are anchored in different places and multiple scales (from the national to the local scale). A more recent refinement of the GPN framework in Coe *et al.* (2004) has made an explicit analytical link between GPNs and (sub-national) regional development—a core issue for economic geographers since the 1980s.

Second, the institutional dimensions of the GCC/GVC analysis seem to be hijacked by its privileging of governance structures. The former includes the role of state policies and institutional conditions in shaping development outcomes in different places and regions. This line of analysis has been reinvigorated in the ‘new regionalism’ literature in geography since the mid-1990s (see MacLeod 2001), although, until recently, the precise connection between regional development and GPNs remains underdeveloped (see Coe *et al.* 2004). GCC/GVC analysis places much greater emphasis on alternative governance structures that are associated with the peculiar configuration of GCCs/GVCs in different industries and sectors. For example, in the clothing industry, the key driver is argued to be global buyers who dictate the terms of garment manufacturing. In the automobile industry, lead firms (assemblers) drive the entire GCC/GVC through their assembly plants located in different regions and countries.

## The Value-Added of GPN Research

As we have seen, the analysis of global production networks and how they relate to socio-economic development at various spatial scales has come a long way over the last few years. There is now a growing body of literature that draws on this framework to answer the main questions of this strand of research, namely: How are GPNs constructed and how do they evolve? What are the underlying governance structures driving this evolution? Who, ultimately, benefits and loses through incorporation in or exclusion from GPNs, and in which places? In order to answer these questions, it is useful to think along the conceptual lines described in Figure 18.1 and consider the dimensions of

value, power, and the embeddedness of individuals and organizations (see also Johns 2006).

Recent work in economic geography has shown that cultural diversity and embeddedness are very much part of inter-organizational economic activity on a transnational or global basis (Hess 2004; Wrigley *et al.* 2005; Coe and Lee 2006; Wrigley and Currah 2006). Depending on an organization's societal embeddedness and cultural background, power asymmetries, network configurations, and governance modes may vary greatly within the same universalistic category of transnational production systems, for example buyer-driven commodity chains or modular networks (Gereffi *et al.* 2005). Working on supply chains in the Shanghai automotive cluster, Depner and Bathelt (2005) show how German companies try to overcome problems of operating in an unknown institutional and cultural environment that has different norms, rules, and *modus operandi* (Gertler 2004). Despite this evolving body of research, culture and non-firm institutions are—with the exception of the GPN framework—still treated as externalities in much of the existing conceptual literature on transnational systems of IOR. For example, Gereffi *et al.* (2005: 99; emphasis added) argue that 'we feel confident that the variables internal to our model influence the shape and governance of global value chains in important ways, *regardless* of the institutional context within which they are situated'. This neglect of institutions such as the state or NGOs, at the local as well as regional and national scales, poses a significant analytical problem.

Recent accounts of the state of the art in GCC analysis call for a better recognition of the cultural, political, and institutional environments in which GPN firms operate (Smith *et al.* 2002; Bair 2005; Yeung 2007). Liu and Dicken (2006) is a good example of GPN research that takes the role of the state and other non-firm institutions seriously. Utilizing the automobile industry in China as a case study, the authors explore the power of the Chinese state to embed foreign investors in this sector for the benefit of the national economy. Their notion of 'obligated embeddedness' indicates that embeddedness does not describe a benign world of cooperation between different organizations without any power asymmetries (Sayer 2001). Weller's (2006) work on the embeddedness of GPN in Fiji's garment industry reinforces this view by analysing the development of GPNs and their transformation as a dynamic process characterized by the interdependencies between trust, embeddedness, and power at multiple spatial scales. Unlike much of the GCC/GVC literature, where governance structures are conceptualized primarily along the ideas of power as a capacity and resource, Weller also highlights the importance of a relational view of power (Allen 2003; Yeung 2005b).

In a similar fashion, Hess and Coe (2006) examine the role of power and embeddedness in shaping the organization and spatiality of GPNs in the mobile telecommunications industry. The entanglement of power and embeddedness

becomes particularly obvious when investigating the standard-setting process in this industry. Technological standards can be considered as a main tool to appropriate value for network members (O’Riain 2004) and to gain control over particular nodes in telecommunications value networks. How the process of standard setting is played out between different actors and organizations, however, does not follow universal rules of transaction cost economies, but depends to a large extent on the societal embeddedness of the actors and organizations involved, i.e. their cultural background and historical development in particular institutional contexts (Hess 2004).

## PROSPECTS AND FUTURE DIRECTIONS

After a critical review of network analysis in economic geography up until the early 1990s, I concluded that

It is perhaps time for a reconstruction of the geography of business organisations and production systems on the basis of a ‘bottom-up’ and network relation approach which seek to construct the social formation of network relations at the intra-, inter- and extra-firm levels and to examine the role of these network relations in understanding the landscape of the capitalist global economy.

(Yeung 1994: 43)

As reviewed in the above sections, the ensuing conceptual developments in economic geography that focus on IOR have certainly gone well beyond my call to place network relations centrally in geographical explanations of the capitalist global economy. What then are the future prospects and challenges to research on IOR? I intend to address them in relation to three dimensions: ontological challenges, epistemological issues, and methodological concerns.

As the ‘economic’ is increasingly reconceptualized in ‘new’ economic geography to incorporate social and cultural dimensions (see Thrift and Olds 1996; Thrift 2000), the *ontological challenge* lies in integrating both material and socio-cultural dimensions of IOR. For example, how should future GPN research address the mutual interdependencies of the social/cultural and the economic, and agency and structure (see also Bathelt 2006)? A way forward might be to try and reconsider some fundamental insights from different intellectual currents in economic geography, namely political economy, actor-network theory (ANT), and ‘new economic geography’, the latter often used as a synonym for the ‘cultural turn’ in the discipline. Political economy has much to offer in terms of explaining the structural and institutional preconditions of human action, while ANT as a poststructuralist concept helps us focus on the agency dimension in producing

IOR. The ‘cultural turn’—albeit largely ignoring the material and economic basis of contemporary capitalism—is helpful in integrating the socio-cultural dimension of economic exchange and value creation, enhancement, and capture in IOR.

Related to these ontological challenges, geographical research into IOR is also confronted with certain *epistemological* problems, particularly with regard to its theoretical foundations. As noted in Table 18.1, for example, the GPN framework owes its theoretical ideas much more to economic sociology and network analysis than orthodox economics. This phenomenon is certainly not accidental because, as observed by Peck (2005), economic geographers seem to ‘play out’ much more with sociologists and organizational theorists than hard-nosed economists. In doing so, there is a danger in GPN-related work of over-emphasizing social relations stretched across space at the expense of economic transactions that *constitute* the very foundation of inter-organizational networks, particularly GPNs. As stated earlier, we should not lose sight of the fundamental economic *raison d’être* of each GPN. The challenge to future research into IOR rests with our continual commitment to the analysis of the spatial creation, enhancement, and capture of *value*—defined as surplus value and economic rent—in different configurations of IOR.

This continual focus on the economic and development outcome of IOR in the global economy points us to another epistemological challenge—the broadening of our existing conceptual frameworks (e.g. GPNs) to incorporate varieties of capitalism within their analytical orbit. A significant body of literature in comparative international political economy has confirmed that the economic organization of capitalism varies across different countries and regions (Whitley 1999; Hall and Soskice 2001). For example, the intellectual foundations of the GPN framework in network analysis and GCC/GVC frameworks do not provide a ready-made solution to this epistemological problem. In the network literature, capitalism is clearly too much a structural phenomenon to be accounted for. In the latter framework, capitalism remains essentially as the backdrop through which GCCs/GVCs operate seamlessly. Put simply, how does the GPN framework account for the persistent divergence in different national economies in terms of business and industrial organizations, institutional structures, and levels of articulation in the global economy? These differences in the economic organization of capitalisms need to be theorized successfully in future epistemological development of IOR research for it to be a powerful analytical tool for understanding contemporary globalization and economic development.

Apart from ontological and epistemological challenges, geographical research into IOR suffers from a relatively underdeveloped *methodological foundation*. For example, despite the GPN framework’s apparently sophisticated theoretical outlook, we still do not have a systematic set of methodological tools to operationalize the framework. Equally, we find it hard to operationalize such ‘soft’, and some

might say ‘fuzzy’ (Markusen 1999), concepts as ‘relational assets’ and ‘institutional thickness’. While a process-based methodology has been argued to reduce the ‘methodological shortfall’ in practising new economic geography (Yeung 2003), there is no explicitly articulated methodology for doing IOR research in economic geography. There are several methodological traits of IOR research in economic geography though. First, there is a strong preference for a qualitative interview-based approach to collecting empirical data on the *mechanisms* and *processes* of IOR. This preference for interviews with key actors in different organizations has many scientific advantages in relation to the richness and explanatory power of observations (see Clark 1998; Yeung 2003). However, it falls short of delivering a rigorous analysis that can give the ‘big picture’ of different IOR on a global scale.

Second, multi-site research seems to provide a better set of data for *triangulation* purposes. Typically, an economic geographer will trace the entire inter-organizational relation or a large portion of it in order to focus strategically on some key sites within this IOR, for example where the lead firm operates and where some of its key suppliers and markets are located. This ‘tracing the IOR’ method can be very rewarding, but it is equally challenging methodologically. There is therefore a need to coordinate geographical research into IOR that span different countries and/or regions. This methodological challenge is immense but can be overcome with cross-national coordination of research funding and activities.

Third, GPN-inspired work tends to rely much less on *quantitative data*. This inherent distrust of quantitative data such as trade and production statistics is unfortunate as empirical research in the GCC/GVC analysis shows their significance and usefulness in providing a broad picture of the composition and operation of different transnational systems of production and consumption in the global economy (see Feenstra and Hamilton 2006). GPN researchers should perhaps incorporate more explicitly quantitative data and relevant statistical tools into their analysis (see also Sheppard 2001).

## CONCLUSION

This chapter has critically reviewed the two major strands of economic-geographical research on inter-organizational relations during the past two decades. In retrospect, much progress has been made in this genre of research in terms of conceptual framing and empirical richness. In conceptual terms, there is no doubt that these perspectives on IOR have gone beyond their intellectual antecedents

to incorporate important spatial and scalar variables in their analysis. Consequently, these perspectives are quite capable of helping us understand the role of IOR, particularly networks, in local and regional development. Empirically, these economic-geographical perspectives have enabled us to connect events, activities, and processes between different organizations in different places. This 'spatial stretching' of IOR is perhaps the single most important conceptual contribution. From the early network analysis in the late 1980s to the 'relational turn' in the late 1990s and the emergence of the global production networks framework in the early 21st century, economic geography has seen a continual research interest in IOR. The future for IOR work in economic geography thus remains bright. Given the interdisciplinary interest in IOR, as indicated by various chapters in this Handbook, there will be important and still fruitful opportunities for economic geographers to engage with the wider social scientific audience in developing distinctive conceptual and empirical insights into the complex nature, evolution, and outcomes of inter-organizational relations.

## REFERENCES

- ALLEN, JOHN (2003). *Lost Geographies of Power*. Oxford: Blackwell.
- AMIN, ASH (ed.) (1994). *Post-Fordism: A Reader*. Oxford: Basil Blackwell.
- and COHENDET, PATRICK (1999). 'Learning and Adaptation in Decentralised Business Networks'. *Environment and Planning D: Society and Space*, 17/1: 87–104.
- and THRIFT, NIGEL (1992). 'Neo-Marshallian Nodes in Global Networks'. *International Journal of Urban and Regional Research*, 16/4: 571–87.
- (eds.) (1994). *Globalization, Institutions, and Regional Development in Europe*. Oxford: Oxford University Press.
- ASHEIM, BJØRN T. (1996). 'Industrial Districts as "Learning Regions"', *European Planning Studies*, 4/4: 379–400.
- AXELSON, BJORN, and EASTON, GEOFFREY (eds.) (1992). *Industrial Networks: A New View of Reality*. London: Routledge.
- BAIR, JENNIFER (2005). 'Global Capitalism and Commodity Chains: Looking Back, Going Forward'. *Competition & Change*, 9/2: 153–80.
- BARNES, TREVOR J., PECK, JAMIE, SHEPPARD, ERIC, and TICKELL, ADAM (eds.) (2003). *Reading Economic Geography*. Oxford: Blackwell.
- BARTLETT, CHRISTOPHER A., and GHOSHAL, SUMANTRA (1989). *Managing Across Borders: The Transnational Solution*. London: Century Business.
- BATHELT, HARALD (2006). 'Geographies of Production: Growth Regimes in Spatial Perspective 3—Towards a Relational View of Economic Action and Policy'. *Progress in Human Geography*, 30/2: 223–36.
- and GLÜCKLER, JOHANNES (2003). 'Toward a Relational Economic Geography'. *Journal of Economic Geography*, 3/2: 117–44.

- MALMBERG, ANDERS, and MASKELL, PETER (2004). 'Clusters and Knowledge: Local Buzz, Global Pipelines and the Process of Knowledge Creation'. *Progress in Human Geography*, 28/1: 31–56.
- BENNETT, ROBERT J. (1997). 'Administrative Systems and Economic Spaces'. *Regional Studies*, 31/3: 323–36.
- BERNDT, CHRISTIAN (1998). 'Ruhr Firms between Dynamic Change and Structural Persistence—Globalization, the "German Model" and Regional Place-Dependence'. *Transactions of the Institute of British Geographers*, 23/3: 331–52.
- BEST, MICHAEL H. (1990). *The New Competition: Institutions of Industrial Restructuring*. Cambridge: Polity Press.
- BURT, RONALD S. (1982). *Towards a Structural Theory of Action: Network Models of Social Structure, Perception, and Action*. New York: Academic Press.
- (1992). *Structural Holes*. Cambridge, Mass.: Harvard University Press.
- (2004). 'Structural Holes and Good Ideas'. *American Journal of Sociology*, 110/2: 349–99.
- CAMAGNI, ROBERTO P. (ed.) (1991). *Innovation Networks*. London: Belhaven Press.
- (1992). 'Firm Networks and the Hidden Costs of Cooperative Behaviour'. Paper presented at the 88th Annual Meeting of the Association of American Geographers, San Diego, Calif., 18–23 Apr.
- CHRISTENSEN, POUL RIND, ESKELINEN, HEIKKI, FORSSTROM, BO, LINDMARK, LEIF, and VATNE EIRIK (1990). 'Firms in Networks: Concepts, Spatial Impacts and Policy Implications'. in Suen Illeris and L. Jakobsen (eds.), *Networks and Regional Development*. Copenhagen: NordREFO/Akademisk Forlag, 11–58.
- CLARK, GORDON L. (1998). 'Stylized Facts and Close Dialogue: Methodology in Economic Geography'. *Annals of the Association of American Geographers*, 88/1: 73–87.
- FELDMAN, MARYANN A., and GERTLER, MERIC S. (2000). 'Economic Geography: Transition and Growth', in Gordon L. Clark, Maryann A. Feldman, and Meric S. Gertler (eds.), *The Oxford Handbook of Economic Geography*. Oxford: Oxford University Press, 3–17.
- CLEGG, STEWART R. (1990). *Modern Organization: Organization Studies in the Postmodern World*. London: Sage.
- COE, NEIL M. (2004). 'The Internationalisation/Globalisation of Retailing: Towards an Economic-Geographical Research Agenda'. *Environment and Planning A*, 36: 1571–94.
- HESS, MARTIN, YEUNG, HENRY WAI-CHUNG, DICKEN, PETER, and HENDERSON, JEFFREY (2004). '"Globalizing" Regional Development: A Global Production Networks Perspective'. *Transactions of the Institute of British Geographers*, NS, 29/4: 468–84.
- and LEE, YONG-SOOK (2006). 'The Strategic Localization of Transnational Retailers: The Case of Samsung-Tesco in South Korea'. *Economic Geography*, 82/1: 61–88.
- COOKE, PHILIP N., and MORGAN, KEVIN (1993). 'The Network Paradigm: New Departures in Corporate and Regional Development'. *Environment and Planning D: Society and Space*, 11: 543–64.
- (1998). *The Associational Economy: Firms, Regions, and Innovation*. Oxford: Oxford University Press.
- COX, KEVIN R. (ed.) (1997). *Spaces of Globalization: Reasserting the Power of the Local*. New York: Guilford.
- and WOOD, ANDREW (1997). 'Competition and Cooperation in Mediating the Global: The Case of Local Economic Development'. *Competition and Change*, 2: 65–94.

- DACIN, M. T., VENTRESCA, M. J., and BEAL, B. D. (1999). 'The Embeddedness of Organizations: Dialogue and Directions'. *Journal of Management*, 25/3: 317–56.
- DEPNER, HEINER, and BATHELT, HARALD (2005). 'Exporting the German model: The Establishment of a New Automobile Industry Cluster in Shanghai'. *Economic Geography*, 81/1: 53–81.
- DICKEN, PETER (1986). *Global Shift: Industrial Change in a Turbulent World*. London: Harper & Row.
- (1990). 'The Geography of Enterprise: Elements of a Research Agenda', in Marc De Smidt and Egbert Wever (eds.), *The Corporate Firm in a Changing World Economy*. London: Routledge, 234–44.
- (2000). 'Places and Flows: Situating International Investment', in Clark *et al.* (2000), 275–91.
- (2004) 'Geographers and "Globalization": (Yet) Another Missed Boat?' *Transactions of the Institute of British Geographers*, 29/1: 5–26.
- KELLY, PHILIP, OLDS, KRIS, and YEUNG, HENRY WAI-CHUNG (2001). 'Chains and Networks, Territories and Scales: Towards an Analytical Framework for the Global Economy'. *Global Networks*, 1/2: 89–112.
- and MALMBERG, ANDERS (2001). 'Firms in Territories: A Relational Perspective'. *Economic Geography*, 77/4: 345–63.
- and THRIFT, NIGEL (1992). 'The Organization of Production and the Production of Organization: Why Business Enterprises Matter in the Study of Geographical Industrialization'. *Transactions, Institute of British Geographer*, 17: 279–91.
- EISENSCHITZ, ARAM, and GOUGH, JAMIE (1996). 'The Construction of Mainstream Local Economic Initiatives: Mobility, Socialization, and Class Relations'. *Economic Geography*, 72/2: 178–95.
- EMIRBAYER, MUSTAFA, and GOODWIN, JEFF (1994). 'Network Analysis, Culture, and the Problem of Agency'. *American Journal of Sociology*, 99/6: 1411–54.
- ETTLINGER, NANCY (2003). 'Cultural Economic Geography and a Relational and Microspace Approach to Trusts, Rationalities, Networks, and Change in Collaborative Workplaces'. *Journal of Economic Geography*, 3/2: 145–71.
- FEENSTRA, ROBERT C., and HAMILTON, GARY G. (2006). *Emergent Economies, Divergent Paths: Economic Organization and International Trade in South Korea and Taiwan*. Cambridge: Cambridge University Press.
- FORRANT, R., and FLYNN, E. (1998). 'Seizing Agglomeration's Potential: The Greater Springfield Massachusetts Metalworking Sector in Transition, 1986–1996'. *Regional Studies*, 32/3: 209–22.
- FORSGREN, MATS, and JOHANSON, JAN (eds.) (1992). *Managing Networks in International Business*. Philadelphia: Gordon and Breach.
- GEREFFI, GARY, HUMPHREY, JOHN, and STURGEON, TIMOTHY (2005). 'The Governance of Global Value Chains'. *Review of International Political Economy*, 12/1: 78–104.
- and KORZENIEWICZ, MIGUEL (1990). 'Commodity Chains and Footwear Exports in the Semiperiphery', in William G. Martin (ed.), *Semiperipheral States in the World-Economy*. Westport, Conn.: Greenwood Press, 45–68.
- (eds.) (1994). *Commodity Chains and Global Capitalism*. Westport, Conn.: Praeger.



- GERTLER, MERIC S. (2004). *Manufacturing Culture: The Institutional Geography of Industrial Practice*. Oxford: Oxford University Press.
- and DiGIOVANNA, S. (1997). 'In Search of the New Social Economy: Collaborative Relations between Users and Producers of Advanced Manufacturing Technologies'. *Environment and Planning A*, 29/9: 1585–602.
- GRABHER, GERNOT (ed.) (1993). *The Embedded Firm: The Socio-economics of Industrial Networks*. London: Routledge.
- (2006). 'Trading Routes, Bypasses, and Risky Intersections: Mapping the Travels of "Networks" between Economic Sociology and Economic Geography'. *Progress in Human Geography*, 30/2: 163–89.
- and IBERT, OLIVER (2006). 'Bad Company? The Ambiguity of Personal Knowledge Networks'. *Journal of Economic Geography*, 6/3: 251–71.
- GRANOVETTER, MARK (1985). 'Economic Action, and Social Structure: The Problem of Embeddedness'. *American Journal of Sociology*, 91/3: 481–510.
- GREEN, MILFORD B. (1993). 'A Geography of Institutional Stock Ownership in the United States'. *Annals of the Association of American Geographers*, 83/1: 66–89.
- GREGORY, DEREK, and URRY, JOHN (eds.) (1985). *Social Relations and Spatial Structures*. London: Macmillan.
- GUILLÉN, MAURO F., COLLINS, RANDALL, ENGLAND, PAULA, and MEYER, MARSHALL (eds.) (2003). *The New Economic Sociology: Developments in an Emerging Field*. New York: Russell Sage.
- HALL, PETER A., and SOSKICE, DAVID (eds.) (2001). *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*. Oxford: Oxford University Press.
- HAMILTON, F. E. IAN, and LINGE, GODFREY J. R. (eds.) (1979). *Spatial Analysis, Industry and Industrial Environment: Progress in Research and Applications*, vol. I. Chichester: John Wiley.
- (eds.) (1981). *Spatial Analysis, Industry and Industrial Environment: Progress in Research and Applications*, vol. II. Chichester: John Wiley.
- (eds.) (1983). *Spatial Analysis, Industry and Industrial Environment: Progress in Research and Applications*, vol. III. Chichester: John Wiley.
- HARRISON, BENNETT (1992). 'Industrial Districts: Old Wine in New Bottles?' *Regional Studies*, 26/5: 469–83.
- KELLEY, MARYELLEN R., and GANT, JON (1996). 'Innovative Firm Behavior and Local Milieu: Exploring the Intersection of Agglomeration, Firm Effects, and Technological Change'. *Economic Geography*, 72/3: 233–58.
- HARVEY, DAVID (1982). *The Limits to Capital*. Oxford: Basil Blackwell.
- HAYTER, ROGER, and WATTS, H. DOUGLAS (1983). 'The Geography of Enterprise: A Reappraisal'. *Progress in Human Geography*, 7: 157–81.
- HENDERSON, JEFFREY, DICKEN, PETER, HESS, MARTIN, COE, NEIL, and YEUNG, HENRY WAI-CHUNG (2002). 'Global Production Networks and the Analysis of Economic Development'. *Review of International Political Economy*, 9/3: 436–64.
- HESS, MARTIN (2004). '"Spatial" Relationships? Towards a Reconceptualization of Embeddedness'. *Progress in Human Geography*, 28/2: 165–86.
- and COE, NEIL M. (2006). 'Making Connections: Global Production Networks, Standards, and Embeddedness in the Mobile Telecommunications Industry'. *Environment and Planning A*, 38/7: 1205–27.

- HESS, MARTIN, and YEUNG, HENRY WAI-CHUNG (2006a). 'Whither Global Production Networks in Economic Geography? Past, Present and Future'. *Environment and Planning A*, 38/7: 1193–204.
- (eds.) (2006b). 'Theme Issue on Global Production Networks'. *Environment and Planning A*, 38/7: 1193–305.
- HUDSON, RAY (1999). 'The Learning Economy, the Learning Firm and the Learning Region: A Sympathetic Critique of the Limits to Learning'. *European Urban and Regional Studies*, 6/1: 59–72.
- (2001). *Producing Places*. New York: Guilford.
- HUGGINS, R. (1998). 'Local Business Co-operation and Training and Enterprise Councils: The Development of Inter-firm Networks'. *Regional Studies*, 32/9: 813–26.
- JOHNS, JENNIFER (2006). 'Video Games Production Networks: Value Capture, Power Relations and Embeddedness'. *Journal of Economic Geography*, 6/2: 151–80.
- KELLY, PHILIP F. (1999). 'The Geographies and Politics of Globalization'. *Progress in Human Geography*, 23/3: 379–400.
- KILDUFF, MARTIN, and TSAI, WENPIN (2003). *Social Networks and Organizations*. London: Sage.
- KRUMME, GUNTER (1969). 'Toward a Geography of Enterprise'. *Economic Geography*, 45/1: 30–40.
- LAW, JOHN, and HASSARD, JOHN (eds.) (1999). *Actor Network Theory and After*. Oxford: Blackwell.
- LEFEBVRE, HENRI (1991). *The Production of Space*, trans. Donald Nicholson-Smith. Oxford: Basil Blackwell.
- LIU, WEIDONG, and DICKEN, PETER (2006). 'Transnational Corporations and "Obligated Embeddedness": Foreign Direct Investment in China's Automobile Industry'. *Environment and Planning A*, 38/7: 1229–47.
- LORENZ, EDWARD H. (1993). 'Flexible Production Systems and the Social Construction of Trust'. *Politics and Society*, 21: 307–24.
- LUKES, STEVEN (ed.) (1986). *Power*. Oxford: Blackwell.
- MACLEOD, GORDON (1997). '"Institutional Thickness" and Industrial Governance in Lowland Scotland'. *Area*, 29/4: 299–311.
- (2001). 'New Regionalism Reconsidered: Globalization and the Remaking of Political Economic Space'. *International Journal of Urban and Regional Research*, 25/4: 804–29.
- MALMBERG, ANDERS, and MASKELL, PETER (1997). 'Toward an Explanation of Regional Specialization and Industry Agglomeration'. *European Planning Studies*, 5: 25–41.
- (2002). 'The Elusive Concept of Localization Economies: Towards a Knowledge-Based Theory of Spatial Clustering'. *Environment and Planning A*, 34/3: 429–49.
- SÖLVELL, ÖRJAN, and ZANDER, IVO (1996). 'Spatial Clustering, Local Accumulation of Knowledge and Firm Competitiveness'. *Geografiska Annaler*, 78B/2: 85–97.
- MARKUSEN, ANN (1999). 'Fuzzy Concepts, Scanty Evidence, Policy Distance: The Case for Rigor and Policy Relevance in Critical Regional Studies'. *Regional Studies*, 33/9: 869–84.
- MARTIN, RON, and SUNLEY, PETER (2003). 'Deconstructing Clusters: Chaotic Concept or Policy Panacea'. *Journal of Economic Geography*, 3/1: 5–35.
- MASKELL, PETER, and MALMBERG, ANDERS (1999). 'Localised Learning and Industrial Competitiveness'. *Cambridge Journal of Economics*, 23/2: 167–85.

- MASSEY, DOREEN (1984). *Spatial Divisions of Labour: Social Structures and the Geography of Production*. London: Macmillan.
- MURDOCH, JONATHAN (1997). 'Towards a Geography of Heterogeneous Associations'. *Progress in Human Geography*, 21/3: 321–37.
- NOHRIA, NITIN, and ECCLES, ROBERT G. (eds.) (1992). *Networks and Organizations: Structure, Form, and Action*. Boston: Harvard Business School Press.
- OLDS, KRIS, DICKEN, PETER, KELLY, PHILIP, KONG, LILY, and YEUNG, HENRY WAI-CHUNG (eds.) (1999). *Globalisation and the Asia-Pacific: Contested Territories*. London: Routledge.
- O'RIAIN, SEAN (2004). 'The Politics of Mobility in Technology-Driven Commodity Chains: Developmental Coalitions in the Irish Software Industry'. *International Journal of Urban and Regional Research*, 28/3: 642–63.
- PECK, JAMIE A. (2005). 'Economic Sociologies in Space'. *Economic Geography*, 81/2: 129–75.
- and YEUNG, HENRY WAI-CHUNG (eds.) (2003). *Remaking the Global Economy: Economic-Geographical Perspectives*. London: Sage.
- PFEFFER, JEFFREY (1981). *Power in Organisations*. Boston: Pitman.
- (1992). *Managing with Power*. Boston: Harvard Business School Press.
- and SALANCIK, GERALD R. (1978). *The External Control of Organisations: A Resource Dependence Perspective*. London: Harper & Row.
- PHELPS, NICHOLAS A. (2004). 'Clusters, Dispersion and the Spaces in Between: For an Economic Geography of the Banal'. *Urban Studies*, 41/5–6: 971–89.
- PINCH, STEVE, and HENRY, NICK (1999). 'Discursive Aspects of Technological Innovation: The Case of the British Motor-Sport Industry'. *Environment and Planning A*, 31/4: 665–82.
- POLANYI, KARL (1944). *The Great Transformation*. New York: Holt, Rinehart.
- PORTER, MICHAEL E. (1980). *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. New York: The Free Press.
- (1985). *Competitive Advantage: Creating and Sustaining Performance*. New York: The Free Press.
- RACO, MIKE (1998). 'Assessing "Institutional Thickness" in the Local Context: A Comparison of Cardiff and Sheffield'. *Environment and Planning A*, 30/6: 975–96.
- SAYER, ANDREW (2001). 'For a Critical Cultural Political Economy'. *Antipode*, 33/4: 687–708.
- and WALKER, RICHARD (1992). *The New Social Economy: Reworking the Division of Labour*. Cambridge, Mass.: Basil Blackwell.
- SCOTT, ALLEN J. (1988). *New Industrial Spaces: Flexible Production, Organisation and Regional Development in North America and Western Europe*. London: Pion.
- (1992). 'The Collective Order of Flexible Production Agglomerations: Lessons for Local Economic Development Policy and Strategic Choice'. *Economic Geography*, 68/3: 219–33.
- (1993). 'Interregional Subcontracting Patterns in the Aerospace Industry: the Southern California nexus'. *Economic Geography*, 69/2: 142–56.
- (1998). *Regions and the World Economy: The Coming Shape of Global Production, Competition and Political Order*. Oxford: Oxford University Press.
- SHEPPARD, ERIC (2001). 'Quantitative Geography: Representations, Practices and Possibilities'. *Environment and Planning D: Society and Space*, 20/5: 535–54.
- and BARNES, TREVOR J. (eds.) (2000). *A Companion to Economic Geography*. Oxford: Blackwell.
- SMELSER, NEIL, and SWEDBERG, RICHARD (eds.) (2005). *The Handbook of Economic Sociology*, 2nd edn. Princeton: Princeton University Press.

- SMITH, ADRIAN, RAINNIE, AL, DUNFORD, MICK, HARDY, JANE, HUDSON, RAY, and SADLER, DAVID (2002). 'Networks of Value, Commodities and Regions: Reworking Divisions of Labour in Macro-regional Economies'. *Progress in Human Geography*, 26/1: 41–63.
- SMITH, NEIL (1984). *Uneven Development: Nature, Capital and the Production of Space*. Oxford: Basil Blackwell.
- STORPER, MICHAEL (1989). 'The Transition to Flexible Specialization: The Division of Labour, External Economies, and Crossing of Industrial Divides'. *Cambridge Journal of Economics*, 13: 273–305.
- (1995). 'The Resurgence of Regional Economies, Ten Years Later: The Region as a Nexus of Untraded Interdependencies'. *European and Urban Regional Studies*, 2/3: 191–221.
- (1997). *The Regional World: Territorial Development in a Global Economy*, New York: Guilford Press.
- and SALAIS, R. (1997). *Worlds of Production: The Action Frameworks of the Economy*, Cambridge, Mass.: Harvard University Press.
- and WALKER, RICHARD (1989). *The Capitalist Imperative: Territory, Technology and Industrial Growth*. Oxford: Basil Blackwell.
- STRANGE, SUSAN (1994). *States and Markets*, 2nd edn. London: Pinter.
- TALLMAN, STEPHEN, JENKINS, MARK, HENRY, NICK, and PINCH, STEVEN (2004). 'Knowledge, Clusters, and Competitive Advantage'. *Academy of Management Review*, 29/2: 258–71.
- TAYLOR, MICHAEL, and ASHEIM, BJORN T. (2001). 'The Concept of the Firm in Economic Geography'. *Economic Geography*, 77/4: 315–28.
- THOMPSON, GRAHAME, FRANCES, JENNIFER, LEVACIC, ROSALIND, and MITCHELL, JEREMY (eds.) (1991). *Markets, Hierarchies and Networks: The Coordination of Social Life*. London: Sage.
- THRIFT, NIGEL (1996). *Spatial Formations*. London: Sage.
- (2000). 'Pandora's Box? Cultural Geographies of Economies'. in Clark *et al.* (2000), 689–704.
- and OLDS, KRIS (1996). 'Refiguring the Economic in Economic Geography'. *Progress in Human Geography*, 20/3: 311–37.
- WARD, KEVIN G. (1997). 'Coalitions in Urban Regeneration: A Regime Approach'. *Environment and Planning A*, 29/8: 1493–506.
- WEBER, MAX (1947). *The Theory of Social and Economic Organization*, trans. A. M. Henderson and Talcott Parsons. New York: The Free Press, 1964; 1st pub. 1947.
- WELLER, SALLY (2006). 'The Embeddedness of Global Production Networks: The Impact of Crisis in Fiji's Garment Export Sector'. *Environment and Planning A*, 38/7: 1249–67.
- WHITLEY, RICHARD (1999). *Divergent Capitalisms: The Social Structuring and Change of Business Systems*. New York: Oxford University Press.
- WILLIAMSON, OLIVER E. (1975). *Markets and Hierarchies: Analysis and Antitrust Implications*. New York: The Free Press.
- (1985). *The Economic Institution of Capitalism*. New York: The Free Press.
- WRIGLEY, NEIL, COE, NEIL M., and CURRAH, ANDREW (2005). 'Globalizing Retail: Conceptualizing the Distribution-based Transnational Corporation (TNC)'. *Progress in Human Geography*, 29/4: 437–57.
- and CURRAH, ANDREW (2006). 'Globalizing Retail and the "New E-economy": The Organizational Challenge of E-commerce for the Retail TNCs'. *Geoforum*, 37/3: 340–51.

- YEUNG, HENRY WAI-CHUNG (1994). 'Critical Reviews of Geographical Perspectives on Business Organisations and the Organisation of Production: Towards a Network Approach'. *Progress in Human Geography*, 18/4: 460–90.
- (1998). 'Capital, State and Space: Contesting the Borderless World'. *Transactions of the Institute of British Geographers*, 23/3: 291–309.
- (2000). 'Organising "The Firm" in Industrial Geography I: Networks, Institutions and Regional Development'. *Progress in Human Geography*, 24/2: 301–15.
- (2003). 'Practicing New Economic Geographies: A Methodological Examination'. *Annals of the Association of American Geographers*, 93/2: 442–62.
- (2005a). 'The Firm as Social Networks: An Organizational Perspective'. *Growth and Change*, 36/3: 307–28.
- (2005b). 'Rethinking Relational Economic Geography'. *Transactions of the Institute of British Geographers*, 30/1: 37–51.
- (2007). 'From Followers to Market Leaders: Asian Electronics Firms in the Global Economy'. *Asia Pacific Viewpoint*, 48/1: 1–25.