Global Production Networks

Global production networks

Martin Hess
University of Manchester, UK

In the twenty-first century, the world economy has seen substantive challenges and changes, not least the global financial crisis, the ramifications of which are still being felt around the globe. Contemporary economic globalization can be characterized by the increased functional and geographical fragmentation and reconfiguration of production processes, deepening outsourcing and offshoring, changing geographies of production and consumption, and associated labor market dynamics including the ascent of temporary and migrant work. These dynamics have become increasingly prevalent with the rise of neoliberalism and the end of the Cold War, triggering new lines of social sciences inquiry into globalization and economic development. Moving beyond more state-centric approaches to economic development studies, approaches such as commodity chain research and global value chain analysis have been developed to better understand the social and developmental consequences of contemporary capitalism (Bair 2005). It is within this context, sharing such a research agenda, that the global production network (GPN) concept first emerged as an analytical framework and heuristic tool (what is now labeled GPN 1.0) and was subsequently reconceptualized as GPN 2.0 by Coe and Yeung (2015) into a more strongly focused theoretical approach to understand the changing nature and dynamics of economic globalization and regional development. The following discussion will first present the conceptual foundations of GPN 1.0 and 2.0 and their intellectual influences. Subsequent sections will focus in turn on power relations between actors and their impact on governance structures in and of GPNs; the increasing fragmentation of GPNs through outsourcing and offshoring, driven by, among other factors, corporate as well as other forms of financialization; the role of labor and labor agency in GPNs; and the dynamic relationships between GPNs and regional development. The entry will conclude with brief reflections on GPNs as politically contested fields and their "discovery" by policymakers and international organizations as arenas of international governance and developmental "tools."

GPNs – conceptual antecedents

As an analytical framework, the GPN concept has been developed since the late 1990s by a group of scholars in economic geography and international economic sociology, mostly based at the University of Manchester. It emerged from a growing dissatisfaction with existing theories of economic development that operated at either macro-levels or micro-levels of abstraction and thus failed to capture the increasingly complex, networked nature of economic activities under neoliberal globalization and their impacts on uneven development at various scales. The construction of the GPN framework rests on a number of historical precursors. Hess and Yeung (2006) identified four strands of literature informing this approach: (i) the 1980s value chain literature associated with the work of

The International Encyclopedia of Geography.
Edited by Douglas Richardson, Noel Castree, Michael F. Goodchild, Audrey Kobayashi, Weidong Liu, and Richard A. Marston.

DOI: 10.1002/9781118786352.wbieg0675.pub2

Michael Porter; (ii) work on networks and the social embeddedness of economic activities as developed in economic sociology; (iii) actor-network theory (ANT), which emerged in the context of science and technology studies; and (iv) most notably, the literature on global commodity chains (GCCs) and global value chains (GVCs), originating in world-systems theory, and developed since the 1990s by Gary Gereffi and his colleagues.

Porter's value chain analysis has been influential in both academic and policy circles, highlighting the various activities a firm performs and the resulting systems of inputs, transformations, and outputs making up the production process. Influential in economic geography for the analysis of industrial clustering, it has also informed the GPN framework with regard to the centrality of value creation and the spatial organization of production processes and service provision. To better understand how economic activities are organized within and between firms, the role of social networks and the embeddedness of economic action in ongoing social relations – in contrast to the methodological individualism of transaction cost economics – have to be integrated as crucial elements in GPN analysis. Economic sociology and an emerging literature on relational economic geography therefore had a major impact on the development of the GPN framework. This was complemented by insights from ANT and its emphasis on a nonessentialist approach to studying networks and actors. ANT reinforces a relational view, avoiding artificial dualisms like structure/agency and global/local, and thus opening up analytical space for investigating multiple actors and their heterogeneous relations in GPNs.

Finally, GCCs and GVCs have provided a major impetus for the GPN framework. GCC analysis addresses four different dimensions (Gereffi and Korzeniewicz 1994): an input–output structure describing the production process and associated activities along the chain, from raw materials to the final product; the territoriality of the GCC, which represents its geographical configuration; the governance dimension, which denotes the power relations of actors (firms) along the commodity chain; and an institutional dimension, the background of state regulation and other institutional rule setting against which firms in GCCs operate. The GVC framework built on this conceptualization with a view to refining the forms of governance found in interfirm value chains, and – echoing some insights from Porter's value chain approach – paying more attention to the local and regional dimension of clusters within GVCs. Based on a critical engagement with these conceptual antecedents, and following Henderson *et al.* (2002), a GPN can be defined as the nexus of interconnected functions and operations through which goods and services are produced, distributed, and consumed. Over the years, GPNs have become organizationally and geographically more complex, increasingly blurring traditional organizational boundaries. They integrate regional and national economies, cutting through state boundaries in highly differentiated ways to create discontinuously territorial structures that are shaped by regulatory and nonregulatory barriers as well as variegated sociocultural conditions of the places connected by GPNs.

Developing a heuristic device: GPN 1.0

The original GPN framework as developed in Henderson *et al.* (2002) – now often referred to as GPN 1.0 – draws on three analytical registers: value, power, and embeddedness. Two notions of value are important for GPN research. First, value is to be understood as surplus value created in transnational production systems through the labor process. This brings into focus issues of employment, working conditions, and productivity at various points in the network, with far-reaching consequences for socioeconomic development. Second, value refers to the notion of different forms of rents that firms can realize within GPNs. These include technological rents, achieved through access to advanced product and process technologies; brand rents, realized through a strong market presence and consumer preferences; organizational rents, achieved by optimizing managerial and organizational skills and production processes; and relational rents, realized through strategic links with other firms in the wider GPN. Other forms of rent may also occur. For example, in sectors where global trade is highly regulated or restricted, preferential access may generate "trade policy rents," as in the now defunct global trade regime in textiles and garments known as the Multi Fibre Arrangement. In relation to economic development, these two vectors of value creation are complemented by processes of value enhancement (increasing the value added at various stages of production) and, crucially, value capture, that is, the process of retaining economic benefits. The latter is of particular importance for both firms in GPNs and the places and societies they connect.

How and where value is created, enhanced, and captured depends on the power relations between the multiple actors in GPNs. Firms exercise corporate power based on their position within GPNs, their different capabilities, and the resources available to them. State and civil society organizations exercise power that influences firms' operations; rather than forming an external environment within which firms act, these nonfirm actors are conceptualized as integral parts of GPNs. Thus state organizations assume power through authority as regulators and facilitators of economic activity, but also exercise buyer power as major consumers (public sector purchasing), and producer power (through state-owned enterprises). Civil society actors produce various forms of collective power, for instance through labor unions, nongovernmental organizations (NGOs), and consumer initiatives, which can also have considerable impact on GPNs by putting pressure on lead firms.

Finally, GPN analysis takes into account the embeddedness of economic activity, along three dimensions (Hess 2004). Societal embeddedness – a notion that draws on the work of Karl Polanyi – refers to the importance of an actor's institutional and cultural background in shaping their actions, rather than deploying a universalistic notion of rational economic agency. Network embeddedness – from Mark Granovetter's work in economic sociology – puts an emphasis on the relevance of social ties that shape the relations between actors in GPNs. Finally, territorial embeddedness takes into account the geographical dimension of GPNs and the varying degrees to which firms, nonfirm organizations, and institutions are "anchored" in particular places. Together, embeddedness, power, and value constitute the three analytical lenses of the GPN framework, guiding research into GPNs' organizational, geographical, and developmental dynamics.

Towards theorizing global production networks: GPN 2.0

As a heuristic device, the GPN 1.0 concept outlined above has inspired a wealth of research and empirical studies. However, as a quite holistic analytical framework it also has potential limitations with regard to its explanatory power and the identification of the causal mechanisms that create and transform GPNs. To address this issue, Neil Coe and Henry Yeung – two key contributors to GPN 1.0 – set out to reconceptualize and theorize GPNs in a new – and arguably more analytically focused – way to develop a concept that since has become known as GPN 2.0 (Coe and Yeung 2015). As a dynamic theory, GPN 2.0 reframes GPNs and their economic development implications along four major dimensions. The first of these explores the capitalist dynamics underpinning GPNs and the firms organized within them. Here, four independent variables are identified that explain GPN formation and transformation: (i) the ways in which firms in GPNs attempt to optimize cost-capability ratios in order to remain competitive; (ii) the dynamics of market development and the need to meet new conditions of demand as well as developing supplier capabilities; (iii) the imperative of financialization and the need for firms to operate under the disciplining influence of finance and shareholders; and (iv) the continuous challenge of managing risk, be that economic, political, social, or environmental (Yeung and Coe 2015).

These capitalist imperatives ultimately impact on and determine GPN firms' strategies with regard to their organizational and spatial configurations and relations, the second dimension of GPN 2.0 theory. These strategies include intrafirm coordination, interfirm partnership, and extra-firm bargaining and conceptualize them as the dependent variables that explain how GPNs evolve, which in turn delimits the third and fourth dimensions of GPN 2.0 theorizing, helping to explain the various value capture trajectories pursued by GPN firms (and by extension the regions and locales where they operate), and the economic development outcomes associated with them (through processes of strategic coupling, cf. Yeung 2016). Overall then, GPN 2.0 represents a major milestone in advancing GPN research, contributing a great deal to both enhancing the explanatory power of the concept and highlighting major drivers and causal mechanisms of GPNs and resultant uneven geographies of economic development. Like all its antecedents, this approach has not been without its own critics, in particular with regard to the role of lead firms and the conceptualization of development (cf. McGrath 2017). The subsequent discussion therefore will draw on salient insights from all conceptual contributions made to date in the realm of GPN research.

Governing GPNs

From early GCC analysis through to the GVC and GPN frameworks, a central concern has been with the governance of interfirm relations and the asymmetrical distribution of power between firms. The initial taxonomy developed in this context distinguishes between buyer-driven and producer-driven commodity chains. In industrial sectors where high capital requirements are the main barrier of entry for firms, as in the automotive and aircraft industries, the value chain is driven by large manufacturers (producers). Buyer-driven value chains are found in sectors that are labor-intensive and where entry barriers are primarily the design, marketing, and branding capabilities of lead firms. Examples include the garment and light electronics industries (Gibbon, Bair, and Ponte 2008). While this taxonomy has proved useful to identify and analyze one important aspect of the distribution of power within GPNs, the increasing complexity of contemporary production systems does not always conform to this. Other forms of governance have subsequently been identified, such as technology-driven value chains characteristic of information and communication industries (particularly software), where entry barriers lie with the control of technological standards and related intellectual property rights.

While providing insight into some fundamental power configurations within GPNs, these types of chain-driving governance structures are quite crude, obscuring the multiplicity of power relations between firms (and nonfirm actors) within a GPN. To better capture the various power relations between firms, a typology of value chain coordination has been developed that describes the nature of exchange between firms as five possible forms of governance: market-based governance, where transactions are easily codified around simple products; modular value chains, where codification of transactions extends to complex products (e.g., between automotive manufacturers and first-tier module and component suppliers); relational value chains, where governance of complex products and exchange requires frequent communication; captive value chains, where suppliers are highly dependent on and monitored by their buyers; and hierarchical value chains, where exchange is internalized within the firm (in-house production).

Even this taxonomy, however, does not include an appreciation of power relations in GPNs extending beyond interfirm exchange, or actors which are also crucial for the configuration, dynamics, and governance of GPNs: state and nongovernmental organizations, civil society, and consumers. Economic processes of production, distribution, and consumption are not simply driven by lead firms in GPNs and coordinated between firms along the value chain (Coe, Dicken, and Hess 2008). They are embedded in wider systems of sociospatial relations and shaped by nonfirm actors operating with their own spatial logic and according to their own specific goals and priorities. The GPN framework therefore explicitly recognizes nonfirm actors as integral parts of the production network. Consequently, state–capital–society relations in the places linked through GPNs are fundamental in shaping economic and social outcomes (Smith 2015; Pickles and Smith 2016). Thus an explicitly geographical perspective is critical to understanding the ways in which GPNs are governed and different stakeholders struggle over the creation and capture of value.

This requires GPN research to conceptualize power more explicitly, rather than only in terms of the individual or collective actors exercising it. Following the work of John Allen (2003) on geographies of power, three different forms of power can be distinguished in investigating governance structures of/in GPNs (Hess 2008). The most commonly used view is a realist conceptualization of power as a capacity, something which individuals or organizations (firms, states) possess, enabling them to dominate others by virtue of social relationships. For firms, this potential to dominate derives from various resources and firm capabilities, and enables them to control or direct the actions of others, as in the case of lead firms driving value chains. Governments, at various scales, derive their power from the authority and sovereignty accorded to them as political institutions.

While conceiving of power as such a capacity to influence others, whether or not it is exercised, is certainly important to understand the dynamics of GPNs, it is not sufficient. Actors can also mobilize resources that are not all of their own making, through collective action and cooperative network relationships. In such a relational, networked view, shared resources become the medium through which power is exercised. This opens up possibilities for "powerless" actors (firms lacking individual resources, workers, consumers) to work together for mutual benefit and achieve their respective goals. Examples for this range from the labor union movement to consumer and NGO campaigning, from firms' strategic alliances to state-negotiated trade agreements (cf. Smith 2015), none of which can be understood purely through power as a capacity.

Finally, and more recently, GVC and GPN analysis have both developed a third lens of power relations by drawing on Foucauldian notions of power as knowledge and practice, moving from a governance perspective to a governmentality approach. Of interest here is how power is mobilized and practiced, and the specific techniques and discourses used and "normalized" to direct the behavior of other actors and achieve specific outcomes. These practices and techniques, including supply chain management to orchestrate interfirm relations and corporate social responsibility codes of conduct, often become institutionalized in the form of standards as an important element of GPN governance. Some types of standards, for instance environmental or social, may be coproduced through the collaboration of various firm and nonfirm actors; others, like some proprietary technological standards such as Apple Inc.'s mobile phone operating system, are produced in the context of the competitive struggle for market control and value capture through brand rents (Coe, Dicken, and Hess 2008).

The variety of governance forms and power relations found in GPNs, within and across different territories, has become increasingly complex since the mid-1980s, as global production systems have continued to expand their global footprint and become increasingly fragmented in organizational terms. The following section examines this "new wave" of globalization (Milberg and Winkler 2013) in more detail.

GPNs, fragmented production, and financialization

The second half of the twentieth century has seen a growing tendency of transnational corporations (TNCs) from the Global North shifting production activities to the Global South, especially in labor-intensive industries. This process has been described in the literature as a new international division of labor (NIDL), taking advantage of a large and growing labor force in developing economies, the transfer of standardized production processes that require only low-skilled workers, and the reduction of transport and communication costs based on new technologies. While still relevant today, as in the garment and consumer electronics industries, the NIDL thesis does not fully capture the drivers for the reorganization of GPNs that have emerged since the 1980s. Contemporary capitalism is characterized by a global division of labor that has experienced major geographical restructuring among world regions, the growing interpenetration of global processes, regional dynamics, and local conditions, and massive transfers of people through migration, a workforce that GPNs seek to attract. Another striking feature of these transformations is the increasing fragmentation and vertical disintegration of production, through outsourcing, subcontracting, and offshoring.

Outsourcing refers to a firm's strategic decision to purchase goods or services from other companies, rather than producing them in-house. The reasons for outsourcing usually lie in attempts to save cost and enhance profitability by focusing on what a firm sees as its core competences and where it has a competitive advantage. Interfirm divisions of labor and outsourcing are by no means new, described in such classic texts as Alfred Marshall's account of the Sheffield cutlery industry in *The Economics of Industry* (Marshall and Paley Marshall 1881). Alfred Marshall's work highlighted the role of spatial proximity for the organization and profitability of interfirm divisions of labor, and was drawn on in the emerging literature on geographical clusters of economic activity. He could not foresee, however, the wave of outsourcing across national borders that became increasingly global in nature, referred to as offshoring. This has become a central empirical and conceptual feature of GPN and value chain research.

The transnational relocation of manufacturing and service activities – whether through international outsourcing or offshoring in-house activities – is pursued for a variety of reasons, including the pursuit of greater flexibility, the avoidance of risks through location diversification, and, of course, reducing cost to maintain or increase profitability. The combined effects of outsourcing and offshoring are manifest not only in the complex geographies of contemporary GPNs, but also in substantial changes in international trade. The "slicing up" of value chains has led to a growing trade in intermediary goods and components, along with finished goods. Therefore, for firms in GPNs, supply chain management has become an important element of competitiveness and a crucial strategic asset. At the same time, the offshoring of service tasks (for instance, call centers, back-office functions) has further increased what is called "trade in tasks." These developments provide economic opportunities for some firms in developing and emerging economies, but other players, failing to realize the potential of new global divisions of labor, have lost their competitiveness.

Financialization has become much more important for GPNs since the mid-1990s (Coe, Lai, and Wójcik 2014; Coe and Yeung 2015; Milberg and Winkler 2013). In the context of GPN research, financialization can be analytically broken down into three interrelated forms. First, it denotes the increased significance of the financial sector vis-à-vis other economic sectors. Financial markets have always been important for the functioning of GPNs, but their powers have continually grown since the liberalization and deregulation of the sector from the 1980s onward. By the early twenty-first century, the value of global financial markets was estimated at about three times the global gross domestic product, with approximately US$15 trillion traded annually. Accelerated financial integration, with a growing propensity for financial decisions in one place to influence conditions in others, has substantial consequences for GPNs. The financial system incorporates all actors and territories in GPNs (states, firms, individuals, cities, regions, and nations) via investments and borrowing, but also through taxation and public expenditure. This leads to the second aspect of financialization, the formation of global financial networks. Such financial networks, global in nature but centered on a small number of global cities such as New York and London, intersect with GPNs in various ways and are crucial for their working. Networked financial institutions over the past decades have designed, produced, and sold increasingly sophisticated financial products, with implications for the third form: corporate financialization.

Firms in GPNs have shifted their focus of profitability away from traditional sources such as production and toward profits gained through financial activities. Corporate financialization is linked to the fragmentation of production in GPNs in two major ways. Within the manufacturing and retail sectors, more and more corporations have started to offer financial services as these produce higher profits than the core business in many cases. These higher profits have not been redistributed to owners and shareholders, nor have they been reinvested in production or service provision, but rather they have been invested in financial assets promising higher rates of return. In addition, and under pressure from shareholders and investors to maximize returns, noncore functions and production have been offshored to low-cost locations. Again, this has had substantial ramifications, not only for the geographies of production in GPNs but also for labor market structures and workers, as Milberg and Winkler (2013) convincingly show for the United States.

Laboring in GPNs

While emphasizing how transnational production systems are orchestrated by a variety of firm and nonfirm actors, arguably the role of labor and the agency of workers in shaping GPN have been undertheorized. This is problematic, not least because the process of value creation and enhancement under capitalism is not only a question of generating different forms of economic rent from the production process or of generating profit in financial markets, but is also reliant on the labor process by which labor power is transformed into surplus value. Labor therefore needs to be considered explicitly in GPN research. Such an analysis should recognize the outcomes for workers, for example in terms of wages, working conditions, and labor rights, but also the potential for workers to transform and shape GPNs based on their individual and collective power and agency. Much of the literature addressing labor has focused on public and private sector governance of labor relations and on developing labor standards, but it often conceptualizes workers as rather passive and at the receiving end of capital and state power. In order to eliminate this blind spot, GPN literature has started to engage with the work of labor geography and the industrial relations literature (Coe and Hess 2013).

Since the formation of the labor movement in Europe during the Industrial Revolution and the subsequent legalization of trade unions, collective labor agency in the form of labor unions has played an important role in ensuring labor rights and improving working conditions. Through collective bargaining, workers exercise power vis-à-vis capital to negotiate a fair share of the value created and generally improve their lot. As production in GPNs has extended in scale and scope, however, the global fragmentation of value chains has posed additional problems for organized labor, as it tries to match the capability of capital to organize across national and international space. Unlike capital, labor is socially and, to a large extent, territorially embedded, and therefore in danger of being played off against labor in different locations. Yet trade unions have developed strategies to upscale their activities, establishing their own global networks. Two forms can be distinguished: labor networks centered on a specific TNC, where bargaining takes place, for instance, through international framework agreements between unions and a single employer; and Global Union Federation-centered networks, which usually cover a specific industrial sector and negotiate with various firms in GPNs.

While collective agency through trade unionism clearly has empowering effects for labor in GPNs, this has been gradually eroded in this era of neoliberal globalization. Labor markets around the world have been increasingly deregulated, leading to growing numbers of "flexible," casualized, and often precarious jobs in manufacturing as well as services. In the wake of this, new labor market intermediaries such as temporary staffing industries have emerged to play an important part in many countries, fueling GPNs with domestic and migrant labor. Under these circumstances, traditional collective action by organized labor has a declining potential to galvanize workers' power. Yet individuals and groups still have agency in shaping GPNs and the conditions of work within them. Following Cindy Katz (2004), worker agency can take the form of strategies of resilience, where people develop everyday coping mechanisms. It can result in reworking strategies, where individuals or communities work to actively improve the material conditions of their existence, and it can lead to strategies of resistance, through which the status quo of capitalist social relations is directly challenged. Thus labor is most certainly not a passive element in the formation of GPNs.

Yet working conditions and enabling rights in GPNs continue to be areas of serious concern. The collapse in 2013 of the Rana Plaza building in Dhaka, Bangladesh, in which more than 1100 garment workers died, was a horrendous incident that threw into sharp relief the dark side of fragmented production in GPNs in the pursuit of profits, and reopened academic and public debates about the responsibilities of governments, firms, and consumers in GPNs to safeguard workers' lives and livelihoods, especially in labor-intensive industries in the Global South.

One way in which recent GPN research has taken up the challenge of conceptualizing labor, as socially embedded agents and human beings rather than simply factors of production, is the notion of social upgrading in GPNs (Barrientos, Gereffi, and Rossi 2011). Social upgrading can be defined as the process of improving the rights and entitlements of workers as human beings and social actors, enhancing the quality of their employment, and improving the living standards of workers, their families, and communities. In most of the literature, this is broken down into two components: (i) measurable labor standards, including wage levels, working hours, social protection entitlements, and type of employment – regular or irregular; and (ii) enabling rights, including freedom of association and the right to collective bargaining. The concept of social upgrading is usually deployed together with the notion of economic upgrading, which describes improvements in technology, skills, and productivity that generate enhanced profits derived from participation in GPNs. It is often assumed that economic upgrading is positively associated with social upgrading, but empirical studies have shown that this is not necessarily the case. How the economic and social dimensions of labor in GPNs play out in specific places to generate positive outcomes for workers depends on how labor agency is shaped by the governance structures of particular GPNs (the vertical dimension) and by the local social and economic conditions of employment and work (the horizontal dimension). This returns us to wider questions of socioeconomic development at the global–local nexus.

GPNs and regional development

To understand regional development in an era of global, networked capitalism, it is clearly not enough to focus on local, endogenous factors alone. At the same time, economic globalization cannot be adequately explained without paying attention to the specific assets and socioeconomic conditions in different countries, regions, and localities. In a relational view, both the growth factors within a given region and the strategic priorities of transregional and transnational firms that orchestrate GPNs need to be taken into consideration in order to investigate and explain development outcomes. In the GPN literature, this has been labeled the globalization of regional development, a process whose outcomes are far from certain, depending on the strategic coupling of regional assets with GPNs (Coe *et al.* 2004). Regional assets include the size and composition of the workforce (human capital), education and research facilities, and natural resource endowments, among others. Three aspects are characteristic for the strategic coupling process between regions and GPNs: first, it is time and space contingent, subject to change but also path dependent; second, it is multiscalar and transcends territorial boundaries; third, it is strategic because the coupling process comes about through the intentional and active intervention of multiple actors (Yeung 2009).

Mediating the strategic coupling process is a range of institutions operating within and beyond the region, in particular government, labor, and business agencies, with the aim of generating beneficial outcomes in terms of value generation, enhancement, and capture, and hence economic development through the integration of regions into wider GPNs. Positive outcomes from globalizing regional development through strategic coupling are not guaranteed, however; insertion into GPNs may be detrimental in specific circumstances, depending on the power configurations and asymmetries in the relevant networks. Coe and Hess (2011) term this the "dark side" of development, which can manifest itself in the form of ruptures within regions (e.g., political exclusion, displacement or eviction of people) and between regions and GPNs (e.g., disinvestment, exit of foreign firms). It can also result in friction when such connections cause social and economic tension and conflict within and beyond the region, such as social and class conflict, struggles over uneven value capture, labor exploitation, or growing gender inequality. In such cases, institutions will often aim for strategic de- or recoupling (Horner 2014) to improve regional developmental outcomes.

GPNs are part of development as the geographically uneven and historically contingent expansion and extension of capitalist systems of production, exchange, and regulation. They are also an arena for organized intervention by private and public actors with different implicit and explicit goals (Hess 2009). As firms in GPNs develop their networks of capital accumulation, they are always operating in the context of (potential) societal and social resistance and protective social movements, a process that has been described by Karl Polanyi (1944) in his institutionalist view of development as the "double movement." This process plays out through organizational networks and coalitions across different scales, and GPN research grounded in relational concepts of space needs to be conscious of this if it is to produce nonreductionist understandings of globalization and regional development, in both their material and their discursive dimensions.

Arguably, GPN analysis has much to offer in terms of research into regional development and the experiences of different places enmeshed to various degrees in global networks, but of course it cannot claim to be fully adequate to capture all dimensions of development, let alone be the only heuristic device or theoretical tool to guide empirical research. In a sympathetic critique, Kelly (2013) argues that some crucial elements for fully understanding development in place are obscured by exclusively utilizing the GPN concept. For example, he highlights the importance of environmental and landscape changes that usually escape the gaze of GPN research unless they are immediately relevant for the transnational and regional firms being studied. A similar "blind spot" in Kelly's view is the realm of households and families. He attributes these shortcomings to a tension between the network ontology underlying a relational GPN framework and a place-based ontology found in other work on (regional) development that assumes localities and regions as "complete" – albeit not bounded – entities and spaces of lived experience. A dialogue and exchange between the GPN concept and cognate approaches, recognizing the possibilities and limitations of one another, needs to continue as part of a critical cultural political economy of GPNs and regional development.

GPNs – a politically contested field

To conclude, the GPN framework as developed since the turn of the century provides a heuristic device and theoretical approach with which to analyze the complex realities of economic globalization and economic development. On the ground, of course, GPNs are not only networked forms of organization and value creation in increasingly global markets, but also political in character – making them highly contested fields (Levy 2008). They connect multiple sites of struggle for the creation, enhancement, and capture of value, shot through with power relations that ultimately determine the implications of GPNs for territorial development. One of the antecedents to the GPN framework, global value chains, has recently gained much prominence in international policy circles, from the International Monetary Fund and the World Bank to the World Trade Organization and the International Labour Organization. Indeed, some are concerned that GVC analysis is running the danger of becoming another neoliberal tool, despite its rootedness in critical social science, as its central ideas are "translated" into the international development policy realm that critics argue still follows orthodox economic development ideas and practices (e.g., Fernández 2014; Neilson 2014). Thus it is imperative for GPN analysis and cognate approaches to maintain their critical focus, investigating GPNs as at once economic and institutionalized, highly political, and discursive structures with far-reaching and often contradictory developmental outcomes.

SEE ALSO: Corporate financialization; Corporations and the nation-state; Development; Fragmentation of production; Global commodity/value chains; Globalization; Governance and development; Labor geographies and the corporation; Relational assets; Spatial organization and structure

References

Allen, John. 2003. *Lost Geographies of Power*. Oxford: Blackwell.

Bair, Jennifer. 2005. "Global Capitalism and Commodity Chains: Looking Back, Going Forward." *Competition & Change*, 9(2): 153–180.

Barrientos, Stephanie, Gary Gereffi, and Arianna Rossi. 2011. "Economic and Social Upgrading in Global Production Networks: A New Paradigm for a Changing World." *International Labour Review*, 150(3–4): 319–340. DOI:10.1111/j.1564-913X.2011.00119.x.

Coe, Neil M., Peter Dicken, and Martin Hess. 2008. "Global Production Networks: Realizing the Potential." *Journal of Economic Geography*, 8(3): 271–296. DOI:10.1093/jeg/lbn002.

Coe, Neil M., and Martin Hess. 2011. "Local and Regional Development: A Global Production Networks Approach." In *Handbook of Local and Regional Development*, edited by Andy Pike, Andrés Rodríguez-Pose, and John Tomaney, 128–138. London: Routledge.

Coe, Neil M., and Martin Hess. 2013. "Global Production Networks, Labour and Development." *Geoforum*, 44(1): 4–9. DOI:10.1016/j.geoforum.2012.08.003.

Coe, Neil M., Martin Hess, Henry Wai-chung Yeung, *et al*. 2004. "Globalizing Regional Development: A Global Production Networks Perspective." *Transactions of the Institute of British Geographers*, 29(4): 468–484. DOI:10.1111/j.0020-2754.2004.00142.x.

Coe, Neil M., Karen P.Y. Lai, and Dariusz Wójcik. 2014. "Integrating Finance into Global Production

Networks." *Regional Studies*, 48(5): 761–777. DOI:10.1080/00343404.2014.886772.

Coe, Neil M., and Henry Wai-chung Yeung. 2015. *Global Production Networks: Theorizing Economic Development in an Interconnected World*. Oxford: Oxford University Press.

Fernández, Victor Ramiro. 2014. "Global Value Chains in Global Political Networks: Tool for Development or Neoliberal Device?" *Review of Radical Political Economics*, 47(2): 209–230.

Gereffi, Gary, and Miguel Korzeniewicz, eds. 1994. *Commodity Chains and Global Capitalism*. Westport, CT: Praeger.

Gibbon, Peter, Jennifer Bair, and Stefano Ponte. 2008. "Governing Global Value Chains: An Introduction." *Economy and Society*, 37(3): 315–338. DOI:10.1080/03085140802172656.

Henderson, Jeffrey, Peter Dicken, Martin Hess, *et al.* 2002. "Global Production Networks and the Analysis of Economic Development." *Review of International Political Economy*, 9(3): 436–464. DOI:10.1080/09692290210150842.

Hess, Martin. 2004. "'Spatial' Relationships? Towards a Reconceptualization of Embeddedness." *Progress in Human Geography*, 28(2): 165–186.

Hess, Martin. 2008. "Governance, Value Chains and Networks: An Afterword." *Economy and Society*, 37: 452–459.

Hess, Martin. 2009. "Investigating the Archipelago Economy: Chains, Networks and the Study of Uneven Development." *Journal für Entwicklungspolitik*, 25(2): 20–37.

Hess, Martin, and Henry Wai-chung Yeung. 2006. "Whither Global Production Networks in Economic Geography? Past, Present and Future." *Environment and Planning A*, 38: 1193–1204. DOI:10.1068/a38463.

Horner, Rory. 2014. "Strategic Decoupling, Recoupling and Global Production Networks: India's Pharmaceutical Industry." *Journal of Economic Geography*, 14(6): 1117–1140. DOI:10.1093/jeg/lbt022.

Katz, Cindy. 2004. *Growing Up Global: Economic Restructuring and Children's Everyday Lives*. Minneapolis: University of Minnesota Press.

Kelly, Philip F. 2013. "Production Networks, Place and Development: Thinking through Global Production Networks in Cavite, Philippines." *Geoforum*, 44: 82–92. DOI:10.1016/j.geoforum.2011.10.003.

Levy, David L. 2008. "Political Contestation in Global Production Networks." *Academy of Management Review*, 33(4): 943–963.

Marshall, Alfred, and Mary Paley Marshall. 1881. *The Economics of Industry*. London: Macmillan.

McGrath, Siobhan. 2017. "Dis/articulations and the Interrogation of Development in GPN Research." *Progress in Human Geography*, online. DOI:10.1177/0309132517700981.

Milberg, William, and Deborah Winkler. 2013. *Outsourcing Economics: Global Value Chains in Capitalist Development*. Cambridge: Cambridge University Press.

Neilson, Jeffrey. 2014. "Value Chains, Neoliberalism and Development Practice: The Indonesian Experience." *Review of International Political Economy*, 21(1): 38–69. DOI:10.1080/09692290.2013.809782.

Pickles, John, and Adrian Smith. 2016. *Articulations of Capital: Global Production Networks and Regional Transformations*. Oxford: Wiley-Blackwell.

Polanyi, Karl. 1944. *The Great Transformation: The Political and Economic Origins of Our Time*. Boston: Beacon Press.

Smith, Adrian. 2015. "The State, Institutional Frameworks and the Dynamics of Capital in Global Production Networks." *Progress in Human Geography*, 39(3): 290–315.

Yeung, Henry Wai-chung. 2009. "Regional Development and the Competitive Dynamics of Global Production Networks: An East Asian Perspective." *Regional Studies*, 43(3): 325–351. DOI:10.1080/00343400902777059.

Yeung, Henry Wai-chung. 2016. *Strategic Coupling: East Asian Industrial Transformation in the New Global Economy*. Ithaca, NY: Cornell University Press.

Yeung, Henry Wai-chung, and Neil M. Coe. 2015. "Toward a Dynamic Theory of Global Production Networks." *Economic Geography*, 91(1): 29–58. DOI:10.1111/ecge.12063.

Further reading

Arnold, Dennis, and Martin Hess. 2017. "Governmentalizing Gramsci: Topologies of Power and Passive Revolution in Cambodia's Garment Production Network." *Environment and Planning A*, 49(10): 2183-2202. DOI:10.1177/0308518X17725074.

Coe, Neil M. 2009. "Global Production Networks." In *International Encyclopedia of Human Geography*, edited by Rob Kitchin and Nigel Thrift, 556–562. Amsterdam: Elsevier.

Dicken, Peter, Philip F. Kelly, Kristopher Olds, and Henry Wai-chung Yeung. 2001. "Chains and Networks, Territories and Scales: Towards a Relational Framework for Analysing the Global Economy." *Global Networks*, 1(2): 89–112. DOI:10.1111/1471-0374.00007.

Gereffi, Gary, John Humphrey, and Timothy Sturgeon. 2005. "The Governance of Global Value Chains." *Review of International Political Economy*, 12(1): 78–104.

Neilson, Jeffrey, and Bill Pritchard. 2009. *Value Chain Struggles: Institutions and Governance in the Plantation Districts of South India*. Oxford: Wiley-Blackwell.

Yeung, Henry Wai-chung. 2005. "Rethinking Relational Economic Geography." *Transactions of the Institute of British Geographers*, 30(1): 37–51. DOI:10.1111/j.1475-5661.2005.00150.x.