COVID-19 AND ALTERNATIVE CONCEPTUALISATIONS OF VALUE AND RISK IN GPN RESEARCH

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ABSTRACT
The COVID-19 pandemic represents a major disturbance that has rippled across the world’s population, states, economy, and central nervous system or global production networks transforming the traditional roles of states, firms, individuals/consumers, and geographies of production. This paper offers a critical and context-based approach to understanding globalization and localization by challenging the conceptualization of ‘value’ and ‘risk’ within the current global production networks framework as well as identifying key operational strategies in risk management and national security. An analysis of the adaptation strategies of the GPNs of 91 companies identifies the role played by four different forms of value in configuring production networks. This is to balance ‘economic value’ with non-price-based sources of value and alternative values. The analysis underscores the critical role of the state in ensuring national and human security as well as its increasing power as a key actor in GPNs and the global economy.

Key words: COVID-19; value; risk; evolutionary economic geography; global production networks; China-United States trade war

INTRODUCTION
The rapid emergence of the COVID-19 pandemic has identified some interesting tensions in the on-going interconnectedness of economic activities across space. These tensions call for a fundamental reframing of the on-going debate in economic geography regarding globalisation. Three tensions can be identified.

First, COVID-19 reminds us that globalisation comes with benefits and risks and it is the risks that have been downplayed by geographers. Part of the challenge is to develop a more integrated approach to understanding globalisation. The global production networks (GPN) approach develops a macro-level theory focusing on governance, dynamics, relationships and ‘value’ meaning profit (Coe & Yeung 2019). The emphasis is on globalisation as a ‘maturing domain of managerial practice’ (Peck 2019, p. 18). The on-going debate in evolutionary economic geography (EEG) is developing micro- and meso-level theory emphasising resilience, adaptation and risk (Vanchan, et al. 2018). These are two distinct but largely decoupled debates (Vanchan, et al. 2018). This is unfortunate; globalisation is the outcome of a weaving together of many different processes involving different scales, complex risks and alternative values.

Second, COVID-19 is a wake-up call to governments and social scientists regarding the precarious nature of everyday existence. There is an important geographical literature on precarious work and hyper-precarious lives including migrants and forced labour (Lewis
et al. 2015). Limited attention has been given to the precariousness of GPNs (Haslam et al. 2013) and their impacts on national security. The COVID-19 pandemic has revealed that we are all living precarious lives and that all companies, countries and GPNs are precarious. Enhanced precariousness has now been revealed as being related to the deepening interconnectedness of the world economy. To Bruno Latour (2020), French philosopher, anthropologist, and sociologist, it is precisely the globalised character of the economic system that has made it so precarious. Globalisation exposes people to risks that are beyond their control, including climate change, pollution, and pandemics (Beck 1992; Giddens 1999). GPNs are implicated in the creation of these risks as extra-network effects, but the GPN approach ignores these with its focus on intra-network risks.

Third, the GPN 1.0 and 2.0 approach emerged as one of the dominant accounts of globalisation within economic geography, but perhaps this approach has become too dominant and inward looking. The GPN approach has not engaged with debates on climate change, rightshoring, carbon footprints, the wider economic, social and environmental costs of fragmented production networks and offers an ‘impoverished understanding of development’ (McGrath 2018, p. 509). For geographers, Latour’s reading of COVID-19 should be taken as a clarion call for the development of a more critical geographical debate on globalisation. To Latour (2020), COVID-19 is a time to stand back and reflect – to engage in an ‘annual stocktake’ and it is not a time in which the focus should be on starting ‘production up again as quickly as possible’; we have to shout back, ‘Absolutely not!’. This resonates with Milberg and Winkler’s (2013, p. 316) call for ‘an alternative analytical framework’ and for a ‘more grounded, embedded approach’ to understanding international trade and global production.

In this paper, we argue that COVID-19 has identified key problems with the approaches that have been developed in geography to theorise globalisation. COVID-19 presents the discipline of geography with an unusual opportunity to engage in a stocktake that will result in the emergence of more critical and context-based approaches to understanding globalisation and localisation.

This paper has its origins in a research project that commenced in 2017 when we began to track strategic decisions made by 91 American, European and Asian transnational corporations. We were interested in exploring processes of reverse globalisation and alternative shoring strategies that were emerging in response to endogenous and exogenous change. This database includes macro and micro firm level data from company reports and corporate documents. The micro level involves decisions regarding individual facilities or plants and the macro level firm level strategy. This project involves academics from the US and Europe. Initially, the focus was on understanding alterations in response to the China-United States trade negotiations. The emergence of COVID-19 provided an opportunity to extend this analysis to explore firm behaviour before COVID-19 (65 companies) and during COVID-19 (26 companies).

This paper identifies key problems in globalisation relating to the conceptualisation of value, risk, localisation of production and national security protection by examining the activities of non-firm actors – states on GPNs as companies respond to trade regulations and the COVID-19 pandemic. It is divided into two parts. The first part explores COVID-19 and new forms of global risk including the extent of this risk, the challenge of dealing with the concepts of ‘value’ in GPN, and the management of ‘risk’. The second part focuses on pre-COVID-19 and during COVID-19 GPN adaptation strategies.

COVID-19, VALUE, GLOBAL RISK AND PRE-CRISIS PRODUCTION MODELS

In 1960, this journal published a pathbreaking paper that laid the foundations for the emergence of a new geography of enterprise (McNee 1960). In 2010, Rusten and Bryson (2010, p.11) revisited McNee’s paper identifying ‘a need for a more balanced understanding of the role firms play in economic activity’ including exploring ‘firms that have different organisational geographies’. In 2010, Taylor argued that clusters had become a mesmerising mantra in economic geography. By 2020, the
new mesmerising mantra has become the GPN approach.

There is a well-developed literature on Zara, the retail company owned by the Spanish company Inditex (Tokatli 2008, 2015). In one critical reading of Zara, Tokatli (2015, p. 642) argued that ‘Inditex ‘is a key driver of globalisation’ defined as being reliant on an extensive network of contract manufacturers – a GPN. There is another side to Zara. In 2017, Katie Hope, a BBC journalist developed an alternative analysis of a pink Zara shirt dress. The label identified this as ‘Made in Morocco’, but this dress had a complex production geography. Thus, the fibre came from predominantly European trees and:

these fibres were shipped to Egypt, where they were spun into yarn. This yarn was then sent to China where it was woven into a fabric. This fabric was then sent to Spain where it was dyed, in this case pink. The fabric was then shipped to Morocco to be cut into the various parts of the dress and then sewn together.

From Morocco, it was sent to Spain where it was packaged and sent to Inditex stores located in 93 countries. Zara is an excellent example of an effective GPN. In 2019 Zara sold 2.9bn units and every second made €843.89 in revenue and €478.23 in profit with a 56 per cent profit margin (Ask Traders 2020).

There is another side to this pink dress – the environmental impacts of this production model. Zara produces ‘fast fashion’ based on the efficient management of complex global supply chains. There are alternatives to Zara. Pact, Colorado, a slow fashion company, focuses on transforming ‘how we make clothes and treat the environment and our workers’ (Pact 2020). Pact blends profitability with ‘valuing’ the environment and employees. This comparison between fast and slow fashion highlights that there needs to be some balance between the benefits associated with globalisation and the ‘risks’ including a discussion of ‘value’ (Thomas 2019).

One solution is found in Polanyi’s (1944) concept of a ‘double movement’ or a dialectical process between market forces, or marketisation, and social protection. This important contribution informed Granovetter’s (1985) concept of embeddedness. To Polanyi, marketisation involves a process of disembedding the economic based on processes of commodification. The alternative is a reactionary countermovement to re-embed the economy through social protection including labour laws, tariffs and regulations. ‘Fast’ fashion is driven by a concern with marketisation while ‘slow’ is orientated towards this alternative countermovement. Polanyi’s concept was used by Rivoli (2005) to reconcile the tensions that emerged in her ethnographic study of the travels of a t-shirt. This concluded by arguing that this ‘call for protection is not just from textile workers or cotton farmers, but from citizens everywhere who feel a growing unease about international trade even as incomes rise’ (Rivoli 2005, p. 213). For Latour (2020), COVID-19 is an opportunity to reflect on this unease and to develop a critical social science debate on the risks associated with globalisation.

A pink shirt dress, while being important for many people, is not critical for national security. Designing and delivering a continual stream of fast fashion products is critical for the on-going continuation of Zara’s business activities. Products must be available on time and in the right location. COVID-19 has disturbed, or interrupted, both ends of GPNs across the globe. On the one hand, factories closed, disrupting manufacturing and delivery schedules in tightly organised GPNs. On the other hand, retailers, and original equipment manufacturers (OEMs), experienced disruption. Assembly sites were closed, or their GPNs were disrupted, leading to closure or rapid adjustments across production networks. In China, in March 2020 owners of new Tesla Model 3 cars discovered that they had been assembled with an older generation computer chip given COVID-19 disruptions to the company’s supply chain. On 23 March 2020, the UK government, ordered all retail stores selling non-essential goods to close. On 2 April 2020, New Look, the UK fashion retailer, wrote to its suppliers cancelling orders for its Spring and Summer clothing lines. The company would not pay suppliers’ costs and the letter noted that the stock could be collected by its owners (BBC 2020).

There is no question that a mantra of fragmented production, or extended spatial divisions of labour, has emerged as one of the
dominated approaches across the social sciences. This takes two forms. In policy debates, global value chains are accepted as the new normal. In 2008, a World Bank report noted that Global Value Chains (GVCs) ‘have become the world economy’s backbone and central nervous system’ (Cattaneo et al. 2010, p.7). The use of the expression ‘central nervous system’ was apt given the impacts of any disturbance on a central nervous system.

Second, within geography, GPNs emerged as a relational approach for understanding the strategic coupling of GPNs with regional actors and assets. This is an inter-firm network perspective (Coe & Yeung 2019). This is an important point. The GPN literature is not about people and employment, resilience or national security, but the organisation of inter-firm networks. Perhaps more importantly, GPN is a theory that is concerned with strategy, and the strategic design of GPNs, rather than with debates in operations and supply chain management. The latter is an extremely rich literature with papers on intelli-sourcing (Fine 2013), different values/risks related to alternative approaches to re/configuring global production (Theyel et al. 2018) and human rights, environmental and ethical dilemmas (Clarke & Boersma 2017). Our focus here is on two aspects that are underdeveloped within the GPN approach – ‘value’ and ‘risk’.

**The challenge of value with GPN** – GPNs ‘are organisational platforms through which actors in different regional and national economies compete and cooperate for a greater share of value creation, transformation, and capture through geographically dispersed economic activity’ (Yeung & Coe 2015, p. 29). This is an account of a battle between actors involving ‘value’. To Yeung and Coe (2015, p. 35), ‘a firm is a managerial device to optimise the accumulation and deployment of its available resources, defined as its core capability, at the lowest possible cost’. Here, the definition of ‘value’ is implicit based on the minimisation of cost and the maximisation of profit emphasising optimisation and rational decision-making.

The key question is the definition of ‘value’ (Mazzucato 2018). The problem with economic geography is that ‘value’ is too often taken for granted. Within the GPN approach the ‘core categories of value, power, and embeddedness remain foundational’ (Coe & Yeung 2015, p. 24). Within GPN ‘value’ is supposedly a multifaceted concept incorporating the entire process of production, exchange and consumption’ (Coe & Yeung 2015, p. 36). Thus, ‘value’ is simultaneously defined as ‘surplus value’ and ‘economic rent’ and a GPN involves value creation, enhancement and capture. In a recent review of GPN, Coe and Yeung (2019) use the term ‘value’ 51 times but the term is never defined. In this review, value is ‘value-added trade’, ‘shareholder value’, ‘value capture’, ‘value creation’, and ‘value generation’. Of these 51 instances, only two refer to ‘non-standard approaches’ to value (Klooster & Mercado-Celis 2016) and the comment here is that the network under discussion is ‘[t]ellingly … primarily constructed at the local and national scale’ (Coe & Yeung 2019, pp. 790–791).

GPN uses the term value in a very narrow sense as meaning economic return or surplus (Pickles et al. 2016) avoiding the term ‘profit’. This is perhaps one of the central weaknesses of GPN – it confuses profit with different forms of academically defined ‘value’. In a critique of GPN, McGrath (2018) notes that GPN conflates the Marxian concept of surplus value with economic rent. She argues that GPN needs to ‘attend to the determination of value through a more open and expansive understanding of value and valuation’ (McGrath 2018, p. 512). We concur. Nevertheless, comparing Zara versus Pact highlights that there are many alternative ways in which firms create different values. These include social and environmental values and non-monetarised values. This reflects the on-going debate on triple bottom lines (TBL) or values created by firms that are related to profit, people and planet and also responsible business (Bryson & Lombardi 2009).

Within the GPN literature, and across the geographical literature, there is an urgent need to unpack and analyse the concept of value as it changes over time, in different geographical contexts and between different actors, companies and people. What is required is an appreciation that value is a collective process and that:
value must once again find its rightful place at the centre of economic thinking. More fulfilling jobs, less pollution, better care, more equal pay – what sort of economy do we want? … And in the meantime we can also make a much better job of reducing activities that are purely rent-seeking and calibrating rewards more closely with truly productive activity’ (Mazzucato 2018, p. 279).

Part of the problem is that there has been a swing ‘from value determining price to price determining value’ (Mazzucato 2018, p. 7); all income is considered to be earned income without any analysis of impacts. COVID-19 is a call for a debate in economic geography regarding ‘value’ for whom, what, when, where, why and how. This debate must include a discussion of responsibility and managerial practice as responsible practice. Value must no longer be accepted as a given, as an unproblematised concept and value must include monetarised and non-monetarised values. Managerial practices that are driven by a too narrow concern with value defined as profit create risks for employees, consumers, shareholders and countries. These risks include shifting ‘the burden of cost cutting through low wages and unsafe working conditions’ to workers and the environment (Clarke & Boersma 2017). A discussion of ‘value’ must simultaneously be a discussion regarding ‘risk’.

Managing risks in the global era – The COVID-19 pandemic represents a major disturbance that has rippled across the world’s central nervous system. COVID-19 is the type of risk that should be adequately conceptualised within GPN 2.0. There are many such risks. To Latour (2020) ‘germs are super-globalisers’ with ‘the capacity to link ‘all humans’. He argues that every entity on the planet – germs, CO2, multinationals, trade partnerships, the internet, tour operators – has its own way of ‘hooking up with each other and all the other elements that compose the collective at a given moment’ (Latour 2020).

GPNs are another form of collective and this hooking up involves risk. Risk plays a central role within GPN 2.0 as ‘global production networks are fundamentally an organisational architecture wherein economic actors can mitigate and manage different forms of risk’ (Yeung & Coe 2015, p. 41). Risk for the GPN approach is defined in relation to the management of a production network with five risk forms identified – economy, product, regulatory, labour and environmental risk (Yeung & Coe 2015, p. 41). Environmental risk includes natural hazards or human-made disasters. The nature and causal effects on actors within GPNs are elucidated. The risks related to human mobility and microbial traffic, including GPN related air travel and microbial traffic, are not included within the five risk forms identified in GPN debates. They could be included in environmental risks or a sixth risk form – microbial risks – could be added (Ali & Keil 2006).

One challenge for GPN theory to address is that global production networks create risks which lie beyond them. These extra-network risks include microbial, national and health security risks and climate change and these rebound on GPNs. Geographically dispersed economic activity creates wider socioeconomic risks and it is these risks that are unaccounted for within the GPN literature. The GPN literature is focused on understanding and even enhancing the efficiency and effectiveness of GPN organisational platforms through exploring approaches to understanding and ‘optimising cost-capability ratios’ (Yeung & Coe 2015, p. 29). The problem is that there is a real tension between optimisation of GPNs and the creation of risks that ripple out across the globe. COVID-19 is perhaps the first time that these ripples have impacted on all countries and the majority of people living on this planet.

One of the problems with the GPN literature is the rather narrow focus on the strategic management of GPN organisational platforms. This is unfortunate. GPNs are, in effect, supply chains. There is a well-developed literature on crisis management within supply chains that explores proactive approaches to risk reduction on the understanding that ‘although crisis in a supply chain is unpredictable, it may not be unexpected’ (Natarajarathinam et al. 2009, p. 537). Crisis management is a subfield of operational management that explores all types of risks (natural, hydrometerological, technical, geological and human related events
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epidemics/pandemics), including extra-network risks, and management responses. The crisis management supply chain literature distinguishes between operational or static risks related to product flow compared to dynamic risks that are external to product flow (inflation, pandemics, terrorism). This includes differentiating between international, external and network related risks (Juttner et al. 2002). This literature explores the scale of any risk and develops approaches to crisis management based on mitigation, preparedness, response and recovery.

Disruption to supply chains and their management have been the focus of many supply chain crisis management studies (Viguerie 1997). These include studies of the 1999 Taiwan’s earthquakes impact on PC assembly by companies like Apple and Dell, the impacts of mad-cow disease on the European supply of leather in 2001 and SARS impact on IT supply chains in 2003 (for a review see Natarajarathinam et al. 2009).

In 2006, Tan and Enderwick published what should have been a much read and cited paper. By 8 April 2020, this paper had been cited 12 times but it had not been cited in the geographical literature. Why is this such an important paper? This is an analysis of the impacts of SARS on international business operations. The paper argues that epidemics are not a new phenomenon, but that SARS had a much greater impact on the international business environment as:

countries and economies are now more interconnected than before, allowing for easy transmission of a virus like SARS. While literature does exist on the management of risk, SARS is indicative of a new kind of uncertainty, the impact and management of which must be analyzed in the context of a world that has become increasingly globalised (Tan & Enderwick 2006, p. 516).

SARS was just the COVID-19 pilot. It is unfortunate that companies, governments, and geographers did not consider SARS as a testbed to develop new approaches to the management of risk. The key finding of the Tan and Enderwick (2006, p. 515) analysis was that ‘supply-chain management and corporate strategy require a fundamental rethink to balance the pursuit of efficiency with increased responsiveness and flexibility’. They also noted that ‘Global phenomena such as SARS also emphasise the need for a collective response and more openness and cooperation among nations’ and that ‘this new kind of event is global and systemic, and accordingly warrants a broad and encompassing risk-management approach’ (Tan & Enderwick 2006, p. 534). Suggested responses included diversification in sourcing and corporate strategy, a shift from linear to contingent-based planning and scenario-informed planning.

The current geographical debate on globalisation needs to be reframed, problematised and revised to account for the direct and extra-network or indirect risks of GPNs as an organisational arrangement consisting of interconnected firm and non-firm actors. Geographers have focused too much on mapping and elucidating the core elements and processes that operate within GPNs. The academic debate has emphasised intra-network analysis rather than exploring the much wider inter and extra-network risks associated with globalisation. These extra-network risks include climate change, environmental pollution, ecological impacts and health, economic and national security. The GPN approach recognises that the complexity of the global economy is associated with ‘uneven developmental outcomes’ (Coe & Yeung 2015, p. 2), but the emphasis in this literature is on celebrating GPN as ‘the most critical organisational platforms through which production in primary, manufacturing, and service sectors is coordinated on a global basis’ (Yeung & Coe 2015, p. 30). Similarly, to Peck (2019, p. 203) the move offshore ‘represents an historical threshold moment with wide and deep implications for employment systems, corporate structures, management practices, regional development and labor markets’.

These are rather too narrowly framed accounts focusing on the labour, management, and economic aspects of globalisation and in which price determines value rather than value determining price.

The challenge is that GPNs, and offshoreing, come with many inter- and extra-network risks that have been largely ignored. The critical social science debate within geography
needs to shift away from a more hagiographic style approach based on celebrating the dominance of GPNs as an organisational form to one in which there is an on-going critical reframing that accepts that a fundamental rethink is required that acknowledges the benefits, intra-, inter- and extra-network risks and multiple values associated with deepening globalisation.

COVID-19, VALUE AND THE MANAGEMENT OF RISK WITHIN GPN

The rapid speed, and economic impacts of COVID-19, has led to a shift in the balance between the state, citizens and businesses within national economies. This is an important point. During the pandemic the state has, in part, engaged in a process of nationalisation by providing an exceptional degree of support for businesses and employees. The state, a non-firm actor in GPN terms, has become a key consumer and surrogate employer. In the UK, the state agreed to pay 80 per cent of the wages of employees ‘on furlough’; employees who were retained on company payrolls but having no work. In the US, the Coronavirus Aid, Relief, and Economic Security (CARES) Act provides all unemployed workers with an extra $600 a week for up to six months, an extra 13 weeks of benefits, and self-employed workers and gig workers to receive unemployment benefits (US Government 2020). This reflects an extension of the six roles of the state that impinge on the national economy as ultimate guarantor, manager of a national economy, investor, business owner, regulator, and provider of public goods and services (Coe et al. 2013). COVID-19 has altered the balance within GPNs between interconnected firms and non-firm actors. During COVID-19, states are not only involved in Polanyi’s (1944) ‘double movement’ but they have become much more than non-firm actors. In effect, states have become key network actors within GPNs.

The most important role played by the state concerns ‘national security’ and ‘human security’ (Behm 2017). This role is central to the ‘double movement’. Two types of social regulation can be observed with COVID-19. First, new forms of social regulation as one response to reducing the transmission of the virus based on social distancing and lockdown. Second, the regulation and facilitation of economic activity. Our concern is with the latter. The regulation of economic activity includes the state as both facilitator of local and global GPNs and as core consumer. There are two time periods to explore here – pre COVID-19 and during COVID-19. We will explore these in turn.

Pre-COVID-19 – On 20 January 2017, Donald Trump was inaugurated as the 45th President of the United States. Trump’s election manifesto included a concern with the global shift, or offshoring, of American manufacturing jobs. On election, the Trump administration raised concerns over the theft of American intellectual property by espionage and forced technology transfer via the imposition of mandatory joint ventures. By 2018, the US government intervened to prevent Chinese state-owned companies from acquiring American companies. This escalated into the on-going China-United States trade war that commenced with the US applying tariffs and non-tariff barriers on China. There is a complex history here. In January 2018, the US imposed tariffs initially on the import of solar panels and washing machines from China and in March 2018 tariffs were imposed on steel and aluminium imports from all countries.

Tariffs contribute to enhancing risks within a GPN, but adaptation strategies can create additional forms of value. For this analysis, the key issue is the response by 65 American companies which reconfigured their existing GPNs. These responses can be traced back to 2017, but the majority emerged in 2019. These changes highlight the lag time between interventions by non-firm actors and reactions by companies highlighting the power that non-firm actors have in influencing corporate strategy and operations and in rebalancing the ‘double movement’. All 65 companies made significant alterations in the intra- versus inter-country balance of their cross-border value activities.

Five different types of operational response can be identified by US companies to the China-United States trade war:
1. Companies expanding existing American plants and closing plants in China (6 companies, 10%). Weiler, the manufacturer of abrasives, power brushes and maintenance products, decided in 2018 to close its facility in Suzhou, China, and to transfer production to its plant at Cresco, Pennsylvania.

2. Companies opening new manufacturing plants in the US (7 companies, 11%). Nike is investing in a heavily automated new factory located at Goodyear, Arizona. Williams-Sonoma, the kitchenware and home furnishings company, is opening a new factory in Tupelo, Mississippi. In this case, savings in freight costs offset any increase in labour costs.

3. Relocating production from China to other low-cost production location (6 companies, 10%). Supermicro, the U.S. information technology company, is shifting production from China and building a plant in Taiwan.

4. Swapping suppliers with production facilities located in China to suppliers located in other countries (45 companies, 68%). Juniper Networks shifted the production of routers from China to the US and Mexico. Hasbro, the Toy company, shifted production away from China to Vietnam, India and Mexico and the plan is to reduce the proportion of toys that come from China by under a third by 2023. In 2019, Abercrombie & Fitch, the American lifestyle retailer of casual wear reduced their dependence on Chinese suppliers by more than 40%.

5. Reordering a global production network as a reaction to a possibility rather than an actuality (1 company, 1%). GPRO, a manufacturer of Cameras, is planning to shift production of cameras for the US market from China to Guadalajara, Mexico, to avoid possible tariffs and to increase efficiency.

Many of the jobs that were moving from China to other low-cost production locations (type 3) were not American jobs that had been shipped overseas. Here it is important to differentiate between time periods – initially jobs were transferred from the US to China and then a second period in which jobs were created in China, but which had never been relocated from America. The dominant strategy (type 4) was a reconfiguration of suppliers by substituting suppliers located in China with those located in alternative low-cost locations. It is important to appreciate the impacts of actual or potential tariff and non-tariff barriers combined with an escalation in the costs of production in China including regulations and intellectual property protection. It is this type of GPN reconfiguration that is central to the definition of ‘value’ within the GPN approach. This is ‘value’ defined as the outcome of a process of cost arbitrage. This narrow definition limits the ability of the GPN approach to understand corporate strategy based on blending cost control and economic definitions of value with non-price-based forms of value creation and hybrid forms.

It is this type of hybrid form of value configuration – cost control with non-price-based approaches – that is required to understand the strategies developed by the 13 companies (21% - types 1 and 2) which had relocated production to America. This strategy included capital substituting for labour with investment in lean manufacturing and automation. Companies are balancing cost versus the benefits that come from closer access to customers. This provides opportunities to create a series of alternative values, as part of the rebalancing of firms’ cost-capability ratios, related to closeness to market, speed and customisation and flexibility. This is not about value defined in terms of cost arbitrage, but a combination of cost control with non-price-based forms of value. The latter includes country of origin, brand, design, quality and heritage and the former cost control related to tariffs, but also transportation costs and substitution of labour with capital (Bryson & Ronayne 2014). Stanley Black and Decker, the tool manufacturer, for example, relocated the production of Craftsman wrenches from China to the US through the application of robotics and other technologies to reduce production costs. This relocation created non-price-based alternative values related to quality, speed and place-based affiliations. These values influence consumer decision-making enhancing product differentiation in the marketplace.
During COVID-19 – During COVID-19 (March to April 2020) the response by American manufacturing firms emphasised the relationships between national security and the existence of localised production complexes. This is to highlight the risks to national security, and to company profitability, that are directly linked to the ways in which companies organise their GPNs. The key point here is the emphasis in the existing GPN literature on the design of GPNs that minimises costs and maximises economic ‘value’ rather than balancing economic value – profit – with risk reduction. This is a high-risk approach to the organisation of global production networks that must change.

COVID-19, along with SARS, highlights that the most effective global production networks are designed to balance cost control, or cost arbitrage, versus risks with multiple values including non-price-based advantages linked to place-based associations and localised value chain integration (Theyel et al. 2018). For risk management it is essential that firms ‘switch from large production sites in a single location like China to smaller, but multiple facilities around the world, thereby creating a global network of manufacturing facilities’ (Tan & Enderwick, p. 529). Dual, or multiple sourcing, becomes critical for reducing risks within GPNs. This includes a balance between production facilities located in core markets compared with an over-reliance on facilities located in lower-cost locations. Substituting capital for labour in high labour cost locations, and distance with nearness to core markets, are important elements in the optimisation of firms’ cost control risk reduction strategies. The key is to highlight the importance of stability, reliability, resilience and predictability in the design of global production networks that balances risk versus reward and cost control with non-price-based forms of competitiveness. This also highlights the need to balance economic value with values related to reliability, resilience and location. COVID-19 is an opportunity for companies to redesign, rethink and reform their GPNs to reduce risks and to include alternative values.

The national security response to COVID-19 required immediate access to production networks that would be able to supply medical equipment, including personal protection equipment (PPE) and medical ventilation machines designed for hospitals. Ventilators take over the body’s breathing process. The problem, for the COVID-19 response, was the shortage of ventilators. One estimate is that the US needs an additional 75,000 ventilators to cope with COVID-19 and that 880,000 are needed globally (Parker 2020). The US response, like that of the UK, has been to work with local companies. Our database includes 26 US companies which had restructured production facilities located in America. These companies rapidly developed upgrading strategies including product (3 companies, 12%), process (10 companies, 38%), functional (6 companies, 23%) and intersectoral upgrading (7 companies, 27%).

On 25 March, Ford transferred 500 employees to work on the production of 50,000 ventilators and reordered their Rawsonville Plant, Michigan. General Motors restructured one of their US manufacturing facilities to increase the production of facemasks to 100,000 per day. GE Healthcare, a manufacturer of ventilators, has shifted to around-the-clock production of ventilators at its plant in Wisconsin. They are adding new production lines and doubling their existing production capacity. Johnson and Johnson are expanding their capacity to produce vaccines in America. Brooks Brothers, the US clothing chain, has repurposed it plants in New York, North Carolina and Massachusetts to produce 150,000 facemasks and gowns per day. These plants formerly manufactured ties, shirts and suits. Part of the US response to COVID-19 has been the emergence of new coalitions of localised production networks. Thus, 3M is collaborating with Ford and GE healthcare to increase the production of ventilators. The key point here is that all this production capacity is localised within the US and is less dependent on more globally orientated production networks.

The role of the state in reshaping GPNs has become very apparent with COVID-19. In the US, the Defence Protection Act (DPA) was invoked by the President on 3 April 2020 to prevent the export of respirators, surgical masks, gloves and other PPE. The DPA enables the US government to modify GPNs to
accelerate the production of face, gowns and ventilators. This occurred during a dispute between 3M and the White House over the imposition of a ban on the export of respirator masks. 3M argued that preventing exports would have significant humanitarian implications for health care workers relying on 3M equipment. Moreover, 3M argued that the ban would result in retaliation from other countries (Breuninger & Wilkie 2020). The DPA act highlights the role that states can play during a national crisis in regulating GPNs, but the state plays multiple roles – as facilitator, regulator and consumer.

Like SARS, COVID-19 has exposed some of the hidden and often unmanageable risks for firms in designing and managing complex, fragmented and geographically dispersed global production networks. This resonates with Latour’s call for a stocktake of globalisation. Some companies are engaging in this type of reassessment by redesigning their GPNs. During the COVID-19 crisis US companies continued to adjust their GPNs in relation to the Chinese trade dispute, but the emphasis shifted towards returning production to America. This is an emerging process. Polaris, the manufacturer of Snowmobiles and all-terrain vehicles (ATVs) relocated machine parts to the value of $30m from China to America. In this case, tariff-related costs had added $110m to the firm’s cost base. G95 Inc, the outerwear manufacturer, had to suspend deliveries given the disruptions to its supply chain from COVID-19. The outcome is that this company is redesigning its supply chains to relocate production back to America. This company’s response will alter the balance of risk within its supply chain but also alters the values that are embedded within its GPN.

The emphasis placed on surplus value and economic rent to the exclusion of all other forms of value in the GPN approach is a major constraint on the ability of GPN analysis to diagnose intra- and inter-firm responses to COVID-19. Within the EEG literature, a clear distinction has been made between cost and non-cost-based forms of competitiveness (Bryson and Ronayne 2014). This distinction mirrors that between tariff and non-tariff barriers. Non-cost-based forms of competitiveness may emphasise responsible management practices including the adopting of a TBL approach based on valuing a company’s contributions to people and the environment as well as profit. In addition, non-cost-based forms of competitiveness include proximity to market, speed, customisation, flexibility, reliability, resilience and place-based affiliations. There are at least three types of ‘value’ here that are currently excluded from the GPN approach. First, there are alternative values that reflect a very different approach to configuring a production network. This includes the slow fashion movement’s concern with the impacts of products on employees, communities and ecosystems and with TBLs. Yet these products may be part of GPNs. Second, there are ‘values’ that provide alternative ways of balancing a firm’s cost-capability ratios. These include the value created from proximity, speed and inter- and intra-network risk management strategies. These include the additional ‘value’, including profit, produced from ‘value chain integration’ or ‘the spatial integration of production with other functional activities’ as managing value chains is ‘unusually complex and resource intensive’ (Theyel et al. 2018, p. 305). Third, there are non-cost-based sources of value that do not contribute directly to the cost-capability ratio but do enhance the attractiveness of a company’s products in the marketplace. These include place-based affiliations. Combining these three alternative forms of ‘value’ is part of a company’s risk reduction strategy.

CONCLUSIONS

Globalisation is not a novel concept. COVID-19 has, however, highlighted the risks associated with the increasing interconnectedness of people and places through the converging processes of economic, political, cultural, and environmental changes. Through these processes and increasing interconnectedness, endogenous and exogenous changes have significant impacts on firm and non-firm actors. COVID-19 is an opportunity to revisit the debate on globalisation and to reframe this around ‘risk’ and ‘value’ including alternative values. This is to argue that the on-going debate on GPNs and offshoring is
too narrowly framed around firms, managerial practices, labour and value defined as profit. An alternative more grounded and integrated debate is required that acknowledges both the benefits and risks associated with deepening globalisation and the ways in which alternative values shape outcomes.

Natural and human-made disasters have posed tremendous risks on all firm and non-firm actors. They have generated opportunities and benefits for some. The current COVID-19 pandemic represents an exogenous shock that will have lasting rippling effects. It is an opportunity for governments, businesses, citizens and scholars to rethink the benefits and risks associated with globalisation. This requires reopening the debate on balancing the ‘double movement’ with a focus on de-risking globalisation and on the values embedded within managerial practices. Currently, the emphasis on risks within GPN 2.0 is on intra-network risks. This needs to change to include a robust discussion of extra-network risks, or the types of complex multifaceted risks and their reach associated with globalisation and global production networks and the ways in which these rebound on GPNs. This must include a discussion of globalisation and the impacts and management of microbial risks.

Similar to risks, the concept of value changes over time in different contexts and between different actors and people. The COVID-19 pandemic requires a debate on value and the values that inform the design and management of the economy including GPNs. Value must no longer be accepted as a given nor as an unproblematised concept but as part of an on-going debate regarding ‘value’ for who, when, where and why. As a critical social science, human geography must elucidate and critique the existing values, and associated risks, that lie behind globalisation. It must embrace Latour’s (2020) call to engage in a stocktake including taking ‘advantage of the enforced suspension of most activities to set out the inventory of those among them we would like to see not coming back, and those, on the other hand, that we would like to see develop’. This paper is one response to this call – to revisit the debate on global production networks and to call for a reframing around value, alternative values and intra-, inter- and extra-network risks.

The COVID-19 pandemic reveals the risks that extend beyond GPNs and the role of the state in protecting national security including human security. More attention needs to be given in the management of GPNs to all kinds of inter- and intra-network risk rather than just cost control. This reflects an alternative set of values that needs to be added to GPNs and their management. The most common operational response amongst American firms to the China-United States trade war has involved relocating suppliers from China to another low-cost country. The impacts and risks associated with COVID-19, including supply chain disruptions, have identified that firms are beginning to develop strategies involving upgrading and the re-localisation of production. Cost control management is no longer the prevalent strategy when it comes to the security of a GPN and national security. This is where the state has demonstrated continuing and increasing power as a key actor at all geographical scales including the global economy. The state remains a critical institution not only given its role as ultimate guarantor, manager of a national economy, investor, business owner, regulator, and provider of public goods and services (Coe et al. 2013), but also as coordinator, facilitator, shaper and consumer of global production networks.

Corporate strategies in response to the COVID-19 pandemic, and in dealing with supply chain disruptions, include building regional supply chains for larger firms, leaning more on technology for smaller firms, and focusing on efficiency and resilience (Schmalz 2020). In this paper, we argue that these strategies need to incorporate risk management that extends beyond GPNs. This includes rebalancing the ‘double movement’ as part of a reactionary countermovement involving alternative values and the development of more responsible managerial practices.

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