Beyond *Kulturkritik*:
Along the Supply Chain of Contemporary Capitalism

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Abstract

Notions of *Kulturkritik* stemming from twentieth century accounts of mass consumption present culture as an effect of the mode or relations of production. Culture becomes the means by which capitalism imposes itself as an ideological system. This paper asks how *Kulturkritik* might be revived or revisited in the current moment of capitalist globalisation. Focusing on changes to production systems introduced by the growth of logistics and supply chain management, it argues that cultural processes of translation, signification, communication and argument have become deeply and materially embedded in the development of capitalism. Particular attention is paid to how infrastructure and technology shape relations of capital and labour. The paper asks how the subjective force of labour can exploit the vulnerabilities inherent in supply chains and confront the networked forms of organisation that enable contemporary capitalism. Overall the aim is to establish a role for culture in struggles against capitalism and to rethink the place of critique and ideology in the wake of such an approach.

Keywords: Logistics, infrastructure, capitalism, supply chains, culture, critique, ideology.

Introduction

Capitalism, crisis, cultural critique – these guiding terms of the present special issue of *Culture Unbound* have begun to interact in new ways. Theodor Adorno's essay 'Cultural Criticism and Society' provides a strategic point of departure from which to gauge just how much things have changed. Adorno (1967: 19) begins his essay by remarking that the term *Kulturkritik* has an 'offensive ring'. This is not just because, 'like "automobile"', it is pieced together from Latin and Greek, but because the cultural critic is 'necessarily of the same essence' as the 'civilization' to which 'he owes his discontent'. Adorno moves his analysis from the 'contradiction' that marks the critic's relation to culture. Caught between transcendence and immanence, the critic must juggle the passing of judgment against the view that culture is a cipher of society. The first requires an 'Archimedean position' (13). The second implies that the 'substance of culture … resides not in culture alone but in its relation to something external, to the material life-process' (28). This paper explores an alternative that emerges not from a dialectical tension between these poles but from the proposition that culture is internal to the material life-process. At stake is not merely an affirmation of the anthropological view of culture or a refutation of the approach that sees culture as ideology. The aim is to outline the basis for a renewed cultural critique capable of grappling with the operations of contemporary capital. To this end, the paper argues that culture is embedded in and constitutive of systems of global production. Focusing on the organisation of supply chains and the position of labour in logistical systems, I approach culture as a generative process that is an essential part of current modes and relations of production.

The paper is divided into three sections. The first is wide ranging and in its textual economy follows the contemporary resonances of Adorno's comments on the word 'automobile'. Thematically this section engages with questions of capitalist transition, crisis and the contested status of critique in contemporary theoretical and political discourses. It asks what hope there is for a renewed cultural critique and suggests this can be accomplished by turning attention to the infrastructural conditions of contemporary capitalist production. The second section extends this argument by exploring the limits of classical political economy from a biopolitical perspective. I propose that the operational dimensions of capital and, in particular, the software control of global mobilities through logistical technologies, provide an appropriate ground upon which to elaborate such a perspective. This leads to engagement with anthropologist Anna Tsing's (2009) account of 'supply chain capitalism' in which I find conceptual and empirical resources for understanding and tracking the role of culture in production systems. In the third section, the focus of the article shifts to labour and its position in these systems. Emphasising the ways in which logistical practices are both productive of subjectivity and crucial to the articulation of cultural difference, I argue that the acquisition of

knowledge by workers about logistical modes of organisation is an important political project. Overall the article seeks to elaborate cultural critique toward practices of political experimentation and collaboration that work across and beyond the operations of capital. If culture is a generative and material element of the life-process so critique must be more than an intellectual proposition, an exercise in judgement or a discovery of the social in the cultural. It requires the invention of new knowledge practices and methods that intervene in the world.

Critique, Crisis, Capital

Adorno's comment about the 'offensive ring' of the word *Kulturkritik* resembling that of the word 'automobile' for its combination of Latin and Greek provides an appropriate entry point for a paper that investigates the role of logistics in the material organisation of culture and capital. This is not only because the concept of hybridisation, to recall the term of Bakhtin (1981), has provided cultural critics with a means to interrogate a variety of issues from the cultural dynamics of globalisation (Pieterse 1994) to the flexible organisation of contemporary capitalism (Hardt & Negri 2000). It is also because capitalist transitions are often characterised as involving a shift from Fordism to post-Fordism (see Lipietz 1986; Harvey 1989; Marazzi 2011). Although these denominations are unsuitable to describe varieties of capitalism that have evolved in parts of the world that never developed large scale industry, it is relevant in the wake of Adorno's comment that they position contemporary capitalism with respect to the waning of automobile manufacture. In her book *Forces of Labor* (2003), Beverly Silver charts the story of the automobile industry as a 'product cycle' that leads the development of twentieth century capitalism with its successive spatial displacements to poorer parts of the world and accompanying workers' struggles. By contrast, she finds contemporary capitalism to be characterised by 'its eclecticism and flexibility, visible in the dizzying array of choices in consumer goods and the rapid emergence of new commodities and new ways of consuming commodities' (104). The question I want to ask is this: if, as Silver argues, automobile manufacture has ceded its position within the development of capitalism, what has become of *Kulturkritik*? What is the fate of that intellectual practice that Adorno associates with the word 'automobile' but which also finds its strongest articulations within and against that variety of capitalism that was driven (or at least symbolised) by automobile manufacture?

   For over a decade, there have been calls from within the cultural and social sciences to move beyond critique. The most famous of these is Bruno Latour's (2004) declaration that critique 'has run out of steam'. There are myriad versions of this claim, but the practical upshot is the advocacy of practices of collaboration or experimentation that seek to make small differences in the world rather than launch wholesale discursive or activist assaults on capitalism. To be sure, this

post-critical tendency often corresponds with the institutional realities in which the human sciences are practiced, marked by pressures to obtain industry funding and create measurable forms of impact. But regardless of whether such imperatives are primary, the compulsion is to make or do something rather than merely to engage in deconstructive interpretation. These perspectives are relevant to the interrogation of logistics and production networks because 'running out of steam' also implicitly registers the exhaustion of carbon fuels that have powered automobiles and other machines of manufacture and transport. In his book *Carbon Democracy* (2012), Timothy Mitchell argues that the provision of energy through the burning of carbon fuels provided the technical and social conditions for the evolution of twentieth century politics and industry. But it in light of current scenarios of peak carbon and climate change claims for the exhaustion of critique reach a crescendo. In a widely read essay entitled 'The Climate of History: Four Theses' (2009: 212), Dipesh Chakrabarty writes that 'critiques of capitalist globalization […] do not give us an adequate hold on human history once we accept that the crisis of climate change is here with us and may exist as part of this planet for much longer than capitalism or long after capitalism has undergone many more historic mutations'. How are we to make sense of developments in the current cultural and social sciences amid such warnings that the critique of capitalism remains a necessary but not sufficient premise for radical political practices that seek to better the world?

The turn in this essay to grapple with these questions through the analysis of logistics, labour and life is informed by attention to the operational aspects of capital that come to the fore in the recent economic crisis. It is no accident that the environmental crisis of which Chakrabarty writes has been accompanied and tempered by a global crisis of capitalism that has exposed the material limits and conduits of financial globalisation (Magnani 2013). If ever one wanted empirical confirmation to discredit arguments for economic determination – even in the 'last instance' as Althusser (1971) famously wrote – it is only necessary to consider the social and political ramifications of this crisis. The turbulent global economy has delivered harsh punishments to many populations, but the governmental response has generally been limited to bail-out and austerity measures that have not addressed the root causes of the situation. Stuart Hall, Doreen Massey and Michael Rustin (2013: 8) capture this predicament nicely: 'The economic settlement that has underpinned the social and political settlement of the last three decades is unraveling, but the broader political and social consensus apparently remains in place'. Small changes seem incapable of unsettling this compact. It is not a matter of staging revolution against reform. Both ultimately are carried by a desire for change. What seems to be at stake is a blockage at the social and political level or the capture of possibilities for change by entrenched material and technical practices that remain impervious to social action and cultural expression. To be sure, this is an impasse that social movements and struggles, from Occupy to the Arab

revolutions, have chipped away at. New forms of organisation and political communication have been invented in the process. But the possibility of turning the passions and aspirations of these movements into levers for changing the wider political and social realities is elusive. A complex interplay between economic processes, science and technology, institutions, state politics and cultural ferment is at play. To shift this dynamic, we need something more than *Kulturkritik*. But what is the intellectual practice that will recognise the systematic and global character of the crisis? And can the environmental urgencies be addressed in concert with rather than in contradistinction to the economic realities? These are the questions of the moment. The horizon against which they are cast is open.

This brings me to the third of the terms that animates the discussion of this special issue: capitalism. As is well known, the word capitalism was never used by Karl Marx, who wrote rather of the 'capitalist mode of production'. It finds its origins in the classical sociology of the late nineteenth century, and, particularly, in the writings of Werner Sombart (1902) and Max Weber (1930). These thinkers were deeply concerned with the radical challenge posed to traditional forms of social order by the reshaping of the world market and the mediation of social relations by the abstract character of value. The concept of capitalism emerged from their attempts to confront this challenge. Weber struggled to derive new criteria of legitimacy for political and social power in the face of capital's expansion. The point is this: capital-*ism*, as a concept, implies the systematic organisation of economic processes and relations in ways that impinge upon politics and society. If, for Weber, this meant looking for a balance between the growth of the German nation-state and the world scale of 'advanced capitalism' (*Hochkapitalismus*), today such a balance seems elusive. The nation-state retains a capacity to regulate but such regulation seems increasingly overshadowed by the global operations of capitalism. This is particularly clear in countries hard hit by the economic crisis, such as Greece and Italy, where popular rejection of austerity measures has been met by the institution of commissary forms of power (*troikas* and technical governments) amenable to the global dictates of finance. How are we to account for a situation in which economic forces can discipline the life of entire populations but at the same time seem to be spinning out of control? In what sense can we claim that capitalism does not determine 'in the last instance' at the same time as we observe a reassertion of its powers in ways that seem to sidestep current practices of social and political resistance?

One way of confronting these questions without positing a disabling victory of the economic over the political is to investigate the sense in which capitalism's operations have become embedded in technical processes and routines that provide an unacknowledged background to both economic aspects of social life and contemporary ways of being political. This draws attention to another dimension of the word automobile, associated with neither its etymological origins nor a particular capitalist product cycle but with what the British sociologist John Urry

(2004) calls the 'the system of automobility'. With this phrase, Urry identifies 'a self-organizing autopoetic, nonlinear system that spreads world-wide, and includes cars, car-drivers, roads, petroleum supplies and many novel objects, technologies and signs' (27). Urry is interested in how this system locks social life into certain patterns of mobility, remakes time and space, and displays the potential for small changes that might move it in another direction. I mention this system not to suggest that the mobilities it generates provide a privileged point of entry for engaging questions about the continued viability of cultural critique. Urry's interest in automobilities reflects a wider concern with the infrastructural conditions for contemporary capitalism and environmental change that extends far beyond a fascination with the motor car. A range of authors, including Paul N. Edwards (2003), Keller Easterling (2005) and Stephen Graham (2009), emphasise the material role of infrastructure in shaping social and cultural life. There is an emergent interest in how computer code (Mackenzie 2005), algorithms (Parisi 2013) and logistical systems (Cowen 2009) merge into circulatory practices that influence not only economic processes and relations but also possibilities for political organisation and expression. Jodi Dean (2012) argues that efforts of political activism and organisation that utilise networked electronic media are part of a system of 'communicative capitalism' that aggregates and harvests information to produce value in ways that excite and exhaust our attention and energies. But perhaps this is too pessimistic a vision, caught in the trap of Adorno's critic who cannot escape the civilization she despises. If so, is there an exit from this predicament? Does culture present a political dead end? Or do new possibilities rise from the ashes of *Kulturkritik*?

Operations of Capitalism

The intellectual practice of political economy has provided thinkers of the twentieth and twenty first centuries with one of their most powerful arsenals for the analysis of capitalism. It is often forgotten, however, that the most prominent figure associated with this practice, Karl Marx, styled his work as a critique of political economy. This is the case even though Marx did not articulate his thought systematically. Despite the influence of Hegel and the efforts of Engels, his writing remains discontinuous, and unfinished. In this sense, he cannot be said to have produced a version of Marxism – significantly the term, like capitalism, is absent from his work. Marx's critique does not function like a well oiled machine, a steam engine, which demolishes all in its path. It is committed to changing rather than merely interpreting the world, as the famous quotation from *Theses on Feuerbach* insists, and it draws sensitively if inconsistently on the divergent traditions it reworks and moves between: British political economy, French social and German idealism. Perhaps here it is possible to find resources for a critical practice that neither replicates the Kantian paradigm of judgement nor becomes entwined

in the death and rebirth of the theory of ideology (Laclau 1997). What Marx calls, in the first volume of *Capital* (1867/1977: 279), the 'hidden abode of production', where capital not only produces but is produced, provides a material and conceptual space from which such a practice might proceed. At stake is not necessarily a political anthropology of deception and revelation by which the depth reveals the truth of the surface. It is true that Marx contrasts this 'hidden abode' with the 'sphere of circulation and commodity exchange within whose boundaries the sale and purchase of labour power goes on' (280). But this contrast needs to be rethought on two counts.

First, the sphere of freedom and legally contracted wage labour, which Marx tended to assume as a capitalist norm, cannot be taken for granted. Global labour historians such as Marcel van der Linden (2008) have shown how, aside from the wage, systems of bondage such as slavery and indenture have been central to capital's global development. Likewise, feminist arguments and struggles have questioned the division between productive and reproductive labour, challenging the masculinist bias implicit in the focus on the freely contracted wage (Pateman 1988; Weeks 2011; Federici 2012). Theorists of post-Fordist economic transformations have pointed to new kinds of productivity associated with traditionally reproductive tasks such as relation building and communication (Marazzi 2011). Accounts of precarious labour have emphasised how different kinds of economic need and affective disposition can harness workers to jobs, including emotional blackmail in the case of carers (Anderson 2000) or 'loving the job' on the part of creative workers (Gill 2006). Both historically and in the present day there has been a deep heterogenisation of labour across time and space, and this has shattered the smoothly functioning and legally regulated 'surface' of freely contracted labour that Marx supposed to cover the 'hidden abode of production' (Mezzadra and Neilson 2013a).

The second factor that disturbs this arrangement concerns the modes of power exercised in the space of production. If, in the realm of circulation and exchange, the juridical power of the state seals the labour contract, the abode of production seems to be one in which disciplinary power, to recall a term from Michel Foucault, comes to the fore. One remembers that Marx completes the chapter where he writes of the 'hidden abode of production' by suggesting that when the 'money-owner' emerges as a 'capitalist' and the 'possessor of labour-power as his worker', the latter 'has nothing else to expect but – a tanning' (1867/1977: 280). If, however, we follow one of the first lectures in which Foucault questions an exclusive focus on the juridical power of the state, 'The Meshes of Power' (2007), the situation appears more complex. In this lecture, delivered at the University of Bahia in 1976, Foucault compares 'the juridical type of power' to 'the simultaneously specific and relatively autonomous, in some way impermeable, character of the *de facto* power that an employer exerts in a workshop'. In so doing, he recalls Marx's *Capital* where he finds awareness that 'there exists no *single* power, but

several powers' (156). This leads to one of Foucault's first formulations of the concept of biopower, which regulates the life of populations. Writing with Sandro Mezzadra, I have correlated the 'heterogeneous subjective targets (individuals and populations)' of these two arms of Foucauldian power with 'the two sides of labor power: the "living body" produced as the "bearer" of labor power and the general human potency epitomized by the concept – or, from another point of view, the individualized experience of the laborer and his or her living in the reality of social cooperation' (Mezzadra & Neilson 2013a: 194).

This emphasis on an intertwining of disciplinary and biopolitical power in the moment of production when combined with attention to the historical specificity of freely contracted wage labour allows a more flexible assessment of the types of power that come to bear in the social relation of capital. The notion of assemblages of power is useful here because it gives a sense of the multiple and contingent ways in which different varieties of power combine to facilitate capital's turnover and make labour productive (for a detailed discussion of this concept see Mezzadra and Neilson 2013a: 189-197). It can also account for the tendency of such combinations to congeal and maintain stability over long stretches of time or in certain spaces. Although it has a history in the work of Gilles Deleuze and Félix Guattari (1987), my use of the concept of assemblage stems more directly from discussions of global assemblages offered by Aiwha Ong and Stephen Collier (2005) and Saskia Sassen (2006). These thinkers highlight how such assemblages tend to reconfigure state territory and power rather than completely displacing them. There is a disaggregation of powers that were once exclusively exercised by the state and a rearrangment of them in specific configurations that mix technology, politics and actors. This accords the Foucauldian account of biopower which traces the historical movement of power away from the juridical form of the state. It also adds an element of contingency that questions totalising explanations of economy and culture deriving from organic notions of society such as those that stem from Hegelian visions of spirit or from functionalist and structuralist versions of sociology. Attention to contingency, however, can lead to a perspective that flattens out networked interactions as if the linking and delinking of elements occurs without conflict or dissensus. In the case of labour and productivity, it is crucial to show how assemblages of power are crossed by fundamental dissymmetry and antagonisms that are inherent to their material constitution.

This is where the empirical study of production networks and supply chain systems comes into play. Under current conditions, what Marx (1867/1977: 932) described as the mediation of social relations 'through things' has become the object of the thriving management science of logistics. Although the business of distribution has been subject to algorithmic calculations at least since the publication of works such as Wilhelm Launhardt's *The Theory of the Trace* (1900) and Alfred Weber's *Theory of the Location of Industries* (1929), the introduction of digital systems has greatly enhanced possibilities for trading transport and labour

costs off against each other. The so-called logistics revolution (Allen 1997) that swept through capitalist organisational cultures in the 1960s, alongside the increasing speed and social significance of financial trading and the growing pressure to extract value from human populations and natural resources, has placed new emphasis on the operative dimensions of capitalism.

The blending of production with elements of circulation and exchange is perhaps best illustrated with reference to developments in the logistics sector. Within the Fordist regime of accumulation, the assumption was that the process of adding value through production and exploitation of labour stopped at the factory gates. Although contested by feminist thinkers who argued that such production rested on the unwaged work of women (Dalla Costa & James 1972), this view also had ramifications for the role of transportation or distribution within the firm. The cost of getting the commodity to the consumer was one that simply needed to be minimised, since it was not productive of value. With logistics this changed. A system analytics approach derived from military operations research was applied to problems of transportation (Holmes 2010). This saw a number of related developments including the introduction of the shipping container, the interlinking of logistics with computing and software design, the formation of academic and industry bodies for the production and dissemination of logistical knowledge, and the invention of more efficient systems for the performance monitoring of workers. More pointedly, logistics was integrated into the production process itself and became a means of maximising profit. Linked to this were changes in the spatial organisation of firms, the evolution of global supply chains, and the search for cheap labour rates in the world's poorer regions. The assembly of goods across different global sites, with objects and knowledge travelling between locations, made the lines between production and distribution increasingly indistinct. Logistics also made the global organisation of space more complex. Geographical entities such as export processing zones and logistics parks began to appear and provided a new geography for attracting investment and organising global production. Increasingly, logistics also came to play a role in service economies and production processes not involving the manufacture of material goods. From financial operations to television production, translation services to the formation of global care chains, the logistical organisation of work and mobility became central to the expansion of capitalist markets and market logics.

In a series of publications (Neilson & Rossiter 2011; Neilson 2012; Mezzadra & Neilson 2013b; Neilson 2013), I have explored these developments in relation to the transformations of capitalism, the production of space and time, and the mutations of sovereignty and global governance. The technical and organisational systems that enabled the logistics revolution have undergone vast changes since the 1960s. The evolution of supply chain management and just-in-time production systems required the controlled feedback of logistical data into production and distribution systems. Enterprise Resource Planning (ERP) and Electronic Data

Interchange (EDI) software platforms aided efforts to digitally record, communicate and analyse every aspect of production, transport, display and sales. This resulted in more expansive and articulated logistical systems that sought to continuously map out the position and trajectory of objects in motion. The real-time integration of these systems provided an unprecedented ability to rationalise labour at every point along the chain, intensifying the pace at which the system turned over and squeezing workers for greater productivity. But the desire to match ideals of lean production to agile and adaptable logistical processes proved elusive. The reduction of costs, elimination of waste and optimisation of flow could only be pushed so far without jeopardising the robustness and flexibility of production systems. Issues of supply chain resilience sparked efforts to minimise contingency by simulating the decisions of actors on both supply and demand sides of global production regimes. Today complex techniques of scenario planning, sometimes involving the use of software adapted from financial market applications, are deployed to maximise options for smoothing out discrepancies and interruptions. The challenge of achieving interoperability between systems and building 'fault tolerance' into them has underscored the difficulties that underlie efforts of standardisation. Nonetheless, the internal governance of supply chains continues to demand protocols of hierarchy, codifiability, capability and coordination (Gereffi, Humphrey & Sturgeon 2005).

As Anna Tsing (2009: 151) points out, the 'diversity of supply chains cannot be fully disciplined from inside the chain', making them 'unpredictable – and intriguing as frames for understanding capitalism'. Tsing's observations are of great relevance for an investigation of how culture, after the demise of *Kulturkritik*, might play a role in the development of a politically powerful approach to the operations of capital. Central to her understanding of supply chains is an emphasis on how they link and create situations of diversity, both in their spanning of wide global vistas and their grappling with the responses of labour and capital in attempts to cut labour costs and discipline workforces. 'Supply chain capitalists', she writes, 'worry about diversity, and their self-consciousness is what makes it easy to show how diversity forms part of the *structure* of contemporary capitalism rather than an inessential appendage' (150). This is not merely a matter of the dissimilarities between firms arrayed along a supply chain or the cultural and economic conditions that pertain in the sites where they operate. It is also a question of relations between different actors in the chain and the kinds of negotiation they must perform for it to function. In her book *Friction* (2005), Tsing gives the example of a piece of coal that travels from Kalimantan to India. First it must be removed from the earth, then it travels to a port city where it is sorted and graded, from here it must be moved quickly to avoid loss of value, and when it finally arrives in India it must meet the requirements of power plant managers. Shunting the commodity along the chain requires 'not a vague and transcendent "coalness" but rather a step by step negotiation of the possibilities at hand – for digging, sort-

ing, transport, and so on'. 'The closer we look at the commodity chain,' Tsing writes, 'the more every step – including transportation – can be seen as an area of cultural production' (51). By this she means that the work of commodity production is partly accomplished by uneasy cultural interactions between participants along the chain.

This understanding of cultural production is a far cry from Adorno's discontented engagement with the culture industry. It is also quite remote from more recent assessments of the labour precarity and 'free labor' that characterise employment in today's digitalised creative industries (Terranova 2000; Ross 2009). Tsing's ruminations draw attention to the presence of friction in supply chains and the role of culture in both facilitating and disrupting their operations. She uses the metaphor of a tyre on the road: 'Friction is not just about slowing things down. Friction is required to keep global power in motion. It shows us (as one advertising jingle put it) where the rubber meets the road' (2005: 6). This metaphor is helpful. It registers how economic processes are never frictionless but also suggests how friction can support the business of economic turnover. Logistics is a case in point, since its imaginaries are deeply invested in the possibility of smoothing out relations of production and distribution. In practice, the programs and designs of logisticians meet hindrances of all kinds and even contribute to their generation, from unruly workforces to traffic chokepoints. Tsing's vision encompasses these moments of blockage as well as exploring the role of culture in facilitating economic interactions. Less pronounced in her work is a sense of how to invent practices of political organisation that respond to the peculiar forms of networked organisation that capitalism pursues in its construction of supply chains. It is to this question that I now turn, attending to its theoretical as well as practical moments.

Strategic Position

How is it possible to combine a sense of the uncertain role of culture in the organisation of supply chains with an analysis of the variable geometry of power that bears upon the contemporary scene of production? Tsing's insistence that 'even transportation' has become 'an area of cultural production' draws attention to an important aspect of supply chains: they link not only dissimilar sites and firms but also dissimilar workforces. In dealing with the question of how labour forces arrayed along a supply chain relate to each other – a question of upmost importance for the creation of political solidarities that reach across the fractured geographies of globalisation – it is crucial to maintain a sense of the production of labour power as a commodity. This means that labour forces cannot be considered, as Taylor (2008: 18) puts it, 'an *a priori* factor in the spatial disbursement of economic processes'. There must be an account of how they are produced and reproduced across as well as within sites, drawing the necessary empirical investigation be-

yond existing research regarding the making of local labour forces (Wolff 1992; Kelly 2013). It also means that the question of cultural interactions along the supply chain becomes linked to the theoretical and practical issues surrounding the production of political subjectivity. What kind of political subject can interrupt the workings of a supply chain? Where is such a subject located? How is it produced and how might it be named? These are crucial questions for any reinvention of politics that seeks to confront the networked forms of organisation that enable the workings of contemporary capitalism.

For purposes of analysis, it is helpful to tackle this question by looking at two of its most important aspects separately, although in reality they are intertwined: the subjection of labour at any point along the chain and the opportunities for solidarity between labour forces working across these points. My earlier discussion of assemblages of power is relevant to the first of these concerns as it explains why contractual arrangements are only one factor contributing to labour conditions alongside disciplinary and biopolitical elements. Clearly there are variations between the modes of subjection operating at various worksites along supply chains. There are also social and cultural factors that impinge from outside and affect how labour power is produced at any point along these chains. As Tsing (2009: 151) recognises: 'No firm has to personally invent patriarchy, colonialism, war, racism, or imprisonment, yet each of these is privileged in supply chain labor mobilization'. Logistical operations also provide powerful forms of global governance. The attempt to measure labour performance in real-time and use the resultant data to generate parameters for optimising labour efficiencies and costs is a prominent feature of contemporary supply chain management. Such real-time labour measurement can be understood as an attempt to eliminate the difference between living and abstract labour. Marx (1858/1973: 361) defines living labour as 'form-giving fire', the subjective capacity for labour carried in the worker's body, inserted into networks of cooperation and positioned in the concrete circumstances under which labour is performed. Abstract labour is the generalised temporal measure of labour that enables its translation into the language of value and provides the regulatory nexus for the establishment of a world market for the commodity of labour power. But the distinction between living and abstract labour also has important political ramifications that can be understood in the frame of resistance and control. This means it can shed light on the qualities of power inherent in logistical practices, which have come to the fore with the globalisation of economic processes and relations. The tension between living and abstract labour, which derives from the fact that the multiplicity and concreteness of the former cannot be fully reduced to the latter, has intensified under contemporary capitalism. Logistics presents the fantasy of eliminating this gap through technical processes of coordination and measure.

Yet logistical control crosses workers in a double way. It subjects them to new forms of monitoring elaborated by key performance indicators (KPIs), standard

operating procedures (SOPs), benchmarks, audits, quotas, best practices and the like. At the same time, it positions them within global production systems in which small actions on their part can have widespread effects. John Womack (2006) writes of what he calls 'strategic position', seeking to identify the social and/or technical conditions that maximise the disruptive effect that actions taken at certain point in the chain might have. Here the negative moment of sabotage meets the constitutive moment of labour organisation, since the identification of such a point, let along the taking of action at it, is a complex matter that often requires collaboration among workforces. This brings me to the second moment in my analysis of the production of political subjectivity along the supply chain: the question of solidarity between different labour forces. This is no easy matter given the dissimilarities of race, class and gender that typically mark the workforces arrayed along a supply chain or the fact that they often operate in different national jurisdictions and across different regimes of authority, territory and rights – for instance, in cases where key industrial activities are undertaken in special economic zones. Here the questions of cultural difference and translation are not abstract metaphors for making arguments about hybridisation or flow but practical issues that must be unavoidably confronted in the political organisation of labour forces.

Despite their crucial role in the articulation of contemporary capitalism, global supply chains are often extremely fragile entities. This is because the effort to play off leanness against agility can result in scenarios where the optimisation of a system occurs at the cost of its resilience. New opportunities emerge for labour organisation since strategic actions can resonate along the supply chain, having potentially devastating effects both up and downstream. The dock worker who engages in wildcat strikes or the courier who fails to work at key times of the year responds to vulnerabilities in the supply chains in which he or she works. Although capital can respond to such actions by rerouting or stockpiling, it can only do so at the cost of comprising the efficiency of the operations it has strived so highly to produce. Workers' collective understanding of the logistical networks in which they work can become a crucial piece of political knowledge if studied and applied systematically.

The production of such knowledge involves not only the building of strategic links between workers along supply chains but also the reckoning with divisions that separate the computational from the physical domains of logistics. The masculine domains of dock work and trucking, for instance, need to build alliances with the feminised 'no collar' labour of data entry, freight forwarding and procurement, as occurred in the successful strike that closed the Port of Los Angeles in December 2012 (Bologna 2012). The challenges mount when these differences stretch across national borders – a familiar predicament in situations of 'virtual migration' (Aneesh 2006) where workers in countries such as India perform service labour for companies and customers in distant locations. Overcoming these

barriers requires awareness on the part of logistical workers of the substantive affects of code and computational systems on their lives, both inside and outside the workplace. It also implies knowledge of those aspects of life that cannot be absorbed by the operational and ordering dimensions of logistical practices, which can represent and regulate differences in some ways but not in others. The material presence of culture with global production systems rears its head in the organisation of labour as much as in the operative dimensions of capital. A renewed *Kulturkritik* must come to grips both with code and those aspects of difference and life that persist outside it.

Conclusion

There is an affinity between the kinds of logistical knowledge workers need to accrue to further their political aims and the knowledge practices that cultural and social researchers must invent to understand the changing forms of capitalism amidst the contemporary crisis. Supply chains are not the only contemporary form of global capitalism. There is also the increasing reach of financialisation (Martin 2002; Marazzi 2010) and the pull of extraction that has forced new kinds of economic and social settlements in Africa (Ferguson 2006) and Latin America (Svampa 2012). Understanding the mutual implication and separate development of these different kinds of capitalist operations is an analytical and political priority (Mezzadra & Neilson 2013b). But a focus on supply chains allows an analysis of how the heterogeneity of global space and time comes to figure in arrangements of technology and labour power that span vast swathes of the earth's surface. It thus begs questions of global cultural and social analysis in ways that reach beyond both the 'Archimedean position' of the judging critic and an 'immanent criticism' that cannot 'resolve the contradictions under which it labours' (Adorno 1967: 31). The sphere of logistical organisation may seem remote from the material realm of culture but in reality it must grapple with it at every turn. Cultural investigations in this sphere demand new practices of experimentation and collaboration in the space that links the gleaming circuits of information technology to hard and often dirty toil. What is made is a kind of knowledge that facilitates political organisation and industrial disruption.

Logistical disputes have been mounting around the world, as recent struggles against companies like IKEA and Amazon attest (Uninomade Collective 2013; Leisegang 2013). These practical struggles have a life apart from theoretical arguments but the intervention they make suggests the need for criticism to engage with the system of production and exchange itself rather than its ideological representations. A merely cultural analysis of contemporary production systems, which does not take account of their material and informational processes, will be unable to discern the operative elements of capital that have come to the fore in the current crisis. Similarly it will not be able to grapple with the environmental chal-

lenges that shadow and confront anticapitalist politics. It is no accident that the logistics sector is booming despite the current economic turmoil. Stefano Harney and Fred Moten (2013) describe logistics as 'a booming field, a conquering field' that was always after a 'bigger prize' than financialization – the 'fantasy that capital could exist without labor' (88-90). Shattering this fantasy is not merely a matter of reinventing cultural critique. It requires a cultural intelligence that remains critical in a syncretic and inventive way while working beyond and across the material and technical elements that hold capital in place.

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