Logistics, Labour and New Regimes of Knowledge Production

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With the rise of ubiquitous computing and the informatization of labour and life, it's clear that the current conjuncture is defined by the networked condition. No matter what social milieu, geocultural situation or mode of production the individual today is always connected to circuits of capital. This is no more evident than in the banality of users logged-on to the Internet with their mobile phones and laptops. Always clicking, moving from one site to the next, the distracted mind of the user multiplies the money for the monopoly providers of idle curiosity. Google, Facebook, Bebo, MySpace, Tudou, YouTube, Twitter. Such engines of entry into the 'experience economy' of social networks can certainly be diagnosed with a political economy of data-mining and the aggregation of taste. But one wonders what the implications are here for the production of knowledge when users engage in the social production of value and network corporations devise new business models for the extraction of rent from the work of the common.[1] What sort of effects does this networked condition have on institutional settings associated with knowledge production? And what kind of social-technical relations emerge to comprise new diagrams of the political? This essay addresses these questions with reference to the global logistics industries that govern the movement of people, finance and things.

Complex problems (human rights violations, climate change, border disputes, migration control, labour management, informatization of knowledge) hold the capacity to produce trans-institutional relations that move across geocultural scales, and this often results in conflicts around the status of knowledge and legitimacy of expression. A key reason for such conflicts has to do with the spatio-temporal dynamics special to sites – both institutional and non-institutional – of knowledge production. Depending on the geocultural scale of distribution and temporality of production, knowledge will be coded with specific social-technical protocols that give rise to the problem of translation across the milieu of knowledge. This is not a question of some kind of impasse in the form of disciplinary borders, but a conflict that is protocological. For media theorist Alexander Galloway, 'Protocol refers to the technology of organization and control operating in distributed networks'.[2] The name we give dominant systems of organization and control is logistics.

Logistics knows its subjects. The software applications special to logistics visualize and manage the mobility of people, capital and things, producing knowledge about the world in transit. Logistics is an extension of the 'organizational paradigm' of cybernetics. Both belong to the 'machine stream ensemble' (Foucault) of neoliberal economics as it emerged following World War II. Common to neoliberal economics, cybernetics and logistics is the calculation of risk. And in order to manage the domain of risk, a system capable of reflexive analysis and governance is required. This is the task of logistics. The

challenge today is to devise techniques and strategies that operate outside the territory of control exerted by logistics technologies and their software algorithms that shape how practices of knowledge production are organized.

This essay explores in an introductory manner the complex of problems set out above with reference to the global logistics industry – an emergent regime of protocological control that already shapes the conditions of labour and life for many, and increasingly affects how knowledge production is governed and undertaken now and in future. In the interest of clarity, a distinction between two key terms chosen to frame the meeting in Paris – knowledge production and epistemological transformation – is required. The latter is deadlocked for reasons associated with the crisis of the university in a 'knowledge economy', but the former is proliferating as new assemblages are produced through the galvanizing force of global capitalism. Nowhere is this more explicit than in the struggle and mutually constitutive relations between the informal and formal sectors of a range of economic and social activities associated with global logistics industries and supply chain management. A case in point can be found in electronic waste industries in China, which is briefly discussed below. Even though one may struggle with the idea that informal economies and their attendant labour practices might be considered a site of knowledge production, their example nonetheless highlights the ways in which a kind of situation awareness – be that in the form of technical adaptation of hardware and software systems or labour strikes and infrastructural sabotage – of logistical operations holds a shaping force that alters how logistics knows its subjects.

Logistics, Standards and Protocols

The primary task of the global logistics industry is to manage the movement of people and things in the interests of communication, transport and economic efficiencies. One of the key ways in which logistics undertakes such work is through the application of technologies of measure, the database and spreadsheet being two of the most common instruments of managerial practice. In the case of cognitive labour, the political-economic architecture of intellectual property regimes has prevailed as the definitive instrument of regulation and served as the standard upon which the productivity of intellectual labour is understood. This is especially the case within the sciences and increasingly within the creative industries, which in Australia and the UK have replaced arts and humanities faculties at many universities.

There are, however, emergent technologies of both labour management and economic generation that mark a substantial departure from the rapidly fading power of IPRs, which are predicated on state systems enforcing the WTO's TRIPS Agreement – something that doesn't function terribly well in places like China with its superb economies of piracy or in many countries in Africa where generic drugs are subtracting profits from the pharmaceutical industry and its patent economy.[3] Intellectual property regimes are no longer the site of real struggle for informational labour, although they continue to play a determining role in academic research and publishing when connected to systems of measure, such as global university and journal rankings, 'quality assurance' audits of 'teaching performance', numbers of international students, etc. In the age of cognitive capitalism, new sites of struggle are emerging around standards and protocols associated with information mobility and population management in the logistics industries. Key, here, is the return of materiality to

computational and informatized life.

Standards are everywhere. Their capacity to interlock with one another and adapt to change over time and circumstance are key to their power as non-state agents of governance in culture, society and the economy[4]. Standards require a combination of consensus and institutional inter-connection (or hegemony) in order to be implemented through the rule of protocols.[5] In this way, one can speak of environmental standards, health and safety standards, computational standards and manufacturing standards whose inter-institutional or technical status is made possible through the work of protocols. The capacity for standards to hold traction depends upon protocological control, which is a governing system whose technics of organization shape how value is extracted and divorced from those engaged in variational modes of production.

In terms of biopolitical technologies of control, there is much research to be done that analyses the role of software in governing the activities of labour within the field of logistics. The calculation of risk that Foucault attributes to post-war American neoliberalism can be seen to manifest in the social-technical systems of contemporary logistics.[6] Securitization of global supply chains is a central concern here, as set out in the policy-shaping efforts of think tanks such as RAND Corporation. The type of technological processes and protocols put forward by RAND take global supply chains and port security as the key systems and spaces at risk of attack[7]. But there is not a great gap between these sort of infrastructural and systemic targets of securitization and the biopolitical control of labour. The discussion of standard software systems currently used in the maritime industry and logistics to monitor and regulate efficiencies with supply chains shows well that labour also belongs to the field of risk assessment and securitization.

The question for this meeting of *Transeuropéenes* might concern the extent to which knowledge production becomes subsumed within the discourse of risk and securitization. If logistical software systems were to fully migrate and become integrated within the academy, at what point or over what issues would research inquiry register as an activity of risk? Certainly, an investigation of logistics may illuminate such emergent conditions, but for now my interest is to turn logistics back upon the question of method and the spatial formation of social relations as found within informal labour sectors.

Waste and Logistics as Method

Last summer we began our research in Shanghai for a project entitled Transit Labour: Circuits, Regions, Borders.[8] Collective field trip visits to two seemingly incongruous settings – an IT facility on the outskirts of Shanghai and Baoshan market for electronic waste, second hand products and fake gadgets – provided an index of how both regions and social mobilization are configured as singularities within a larger constellation of relations. Following earlier waves of manufacturing across East Asia where 'Made in Japan' and, later, 'Made in Taiwan' became synonymous with a range of electronic commodities and attendant mythologies of techno-cultural dystopias, over the last two decades China has become renowned as the planet's epicentre for electronic manufacturing. When purchased, one of the primary attractions of an electronic commodity is how clean it seems. The lovely smooth surfaces coated in buffed plastics or complex metal composites provide a suitable black box of mystery for their interior circuits and generation of values that betray the toxic conditions of production and their

effects on worker's health and the environment. Such is the fantastic power of the commodity-form to abstract itself from the experience of labour and life.

But the index of labour, as Marx so astutely observed, is never entirely divorced from the commodity-form. The relation between labour and the production of electronic commodities will of course be palpable at an IT factory in ways that can never be the case at some flagship store for global electronic brands. But even at the factory, the body is separated from the commodity-form as a result of the division of labour and the centrality of machines to the manufacturing process. What we see is the body in toto, but it is a body that is at once machinic (as technical apparatus rather than social assemblage of the general intellect) while refusing any totalizing subjugation by the machine through the assertion of special human qualities. We hear the language of dialects and notice the skin of ethnicities. Here is the most basic of anthropological encounters. Without some kind of hermeneutic device we are left in the realm of the senses – responses that nowadays are discredited within academe and its disciplinary sensitivities to the politics of the other (which arguably are more about a narcissistic politics of identity and the self). No matter how momentary or partial, we search for a cognitive model with which to render the mutability of sensation as stasis in the grid of reason. This is the problem of method.

Where the IT factory's PCB circuit board – 'the basic platform used to interconnect electronic components' – is part of an East Asian regional formation at a transnational scale, sites such as Baoshan electronic market in urban Shanghai combine intra-national regional formations in terms of the domestic sale of second-hand commodities and electronic waste with a global traffic in the recycling of e-waste.[9] By studying the movement of e-waste, we find that electronic components – many of which have been made in China – are grafted in different ways to national and international regulations designed to govern the treatment of electronic waste. As is well known, the Chinese government banned the importation of e-waste in 1996.[10] Yet the informal e-waste economy is substantial and thriving in small businesses in cities along the eastern seaboard. Some of these businesses located in places like Baoshan market integrate the reassembly of second hand computer parts with a sideline in recycling e-waste purchased through domestic and transnational circuits of trade. In both instances, electronic objects belonging to the same family of parts hold substantially different status at the spatial scale depending on their circuits of distribution.

In moving from the site of manufacturing to one that deals in the detritus of consumption, we discern the multiplication of regions. The circuit boards produced at the IT factory are part of a social life of things that become mobilized across the regional space of Asia during the process of assembly. The composition of low-wage labour also constitutes a regional formation, but one that in the case of the Shanghai IT factory is drawn from provinces set back from the special economic zones stretching along the eastern seaboard. In China's manufacturing, construction and service industries there is a tendency for labour to assemble according to provincial filiations. The network of street waste workers in Shanghai's Xu Hui District (or former French Concession), for example, are migrants from Anhui province and their self-organization of labour is predicated on provincial connections.

To take another example: many of the workers in the e-waste and second hand electronic markets in Ningbo, a city south of Shanghai, migrate from Jiangxi province.

And in the case of Nanhai – 'one of the best digital cities in Guangdong' (and one of the biggest centres for e-waste and second hand electronics) – workers stem from Hubei province. It is worth noting that Nanhai also has a substantial ship building industry, and it is perhaps no surprise that Guangdong province has more relaxed borders of control when it comes to the importation of illegal e-waste from overseas markets such as Japan, Europe, the US and Australia. Businesses in Ningbo, where border control at the port is more stringent, find alternative routes for the movement of illegal e-waste – cities such as Nanhai serve as a key source for the transit of waste from within the sovereign territory of the nation; in turn, unsold products in Ningbo's second hand markets are considered e-waste and sold back to junk men and women from Guangdong and Taizhou.[11]

In a site visit to Shanghai's Baoshan electronic market in June last year, one of our co-researchers, Anja Kanngieser, found that workers came from quite a wide range of cities and provinces: Suzhou, Nanjing, Henan, Jiangxi and Anhui. Yet at another electronic market, not so far away on Fuxing Lu, workers came predominantly from Guangdong province, the centre of the electronic manufacturing and waste industries. While e-waste seemed to be something on sale in the case of Baoshan with all its regional cosmopolitanism, this wasn't the case at Fuxing Lu market. Yet often e-waste is hard to see immediately, and it is a sort of sliding object or category in the sense that unsold second hand products, which are often reassembled into hybrid objects to be sold again, then become 'e-waste' when they can't be sold as products and are sold on to junk men and women as waste. Junk is not junk, in other words. Or rather, the same looking junk becomes quite different junk – an object lesson on the empty signifier. Both waste and labour, then, comprise forms of social mobility that can be understood as special intra-national and trans-national regional formations whose borders are highly elastic.

In searching for an analytical method with which to make sense of these various mobilities, we have been struck by the role of logistics as a biopolitical technology of control in governing the movement, as noted earlier, of people, finance and things in the interests of communication, transport and economic efficiencies. On the question of method, Sandro Mezzadra and Brett Neilson note the following: 'We understand method to emerge precisely from the material circumstances at hand …. Border as method thus entails not only an epistemic viewpoint from which a whole series of strategic concepts as well as their relations can be recast. It also requires a research process that continually accounts for and reacts to the multifarious battles and negotiations, not least those concerning race, that constitute the border both as an institution and a set of social relationships'.[12] What, then, might logistics as method hold for the analysis of transit labour (labour mobilities in transition) and the production of knowledge? As we note in our catalogue of project concepts: 'Logistical methods of organization apply to contemporary production and patterns of mobility'. Organization, in turn, becomes a question and practice for the arrangement of bodies and brains mobilized as labour.

The Logistical University?
Over the past 10 or so years the proliferation of non-university institutions such as NGOs, think tanks and activist, media and cultural organizations engaged in the production of knowledge signals less an 'epistemological revolution' and more a political challenge to the university and its monopoly of knowledge. Such a shift is further

amplified by the increasing tendency for Anglophone universities to rely on a casual labour force to undertake a raft of teaching, administrative and occasional research duties. Coupled with the industrialization and commercialization of knowledge,[13] the rise of the university as a teaching machine that polices the practice of research as the preserve of tenured senior faculty who manage projects prompts critical research to migrate beyond the territory of the university.[14] Arguably, conditions are in place for a substantive epistemological transformation predicated on institutional and technological cultures – something along the lines of Kuhn's paradigm shift or Foucault's epistemic rupture. Given the modern constitutive relationship between epistemology and disciplinarity, it is unlikely such a change will be generated from within the borders of the university. Today, the conditions for epistemological change are no longer tied in any exclusive manner to the contours of disciplines within university settings. While one might consider the challenge of method and practice of concept production as something disciplines within the humanities, at least, are largely inclined to avoid given their conservative predilection, it would be a gross oversight to suggest that inventive methods and wild concept production have stalled in society at large.[15]

The critical question for academics and university based scholars is to discern how they might adjust their own knowledge practices with reference to knowledge production undertaken in non-university settings. It would be a mistake, however, to overlook the politically sharp lines of division and institutional dispute that distinguish the forms of knowledge production across non-university settings. The agenda of consultancy firms and think tanks supplying clients (both governmental and non-governmental) with commissioned policy reports is vastly different from the sort of policy work undertaken by activist organizations engaging in, say, cultural or environmental policy critique. The basic genre of expression may hold some similarities, but the social-political constituencies, technics of organization, aesthetics of presentation and funding alliances are more likely to sever any possible correspondence between the two.

The transformation of knowledge practices is also a question of method as much as politics and for the vast majority of academics, such a question will never be entertained. There is neither the desire to engage in the work of a reflexive critique of practice, no matter the frequent lip service given to such an idea, nor is there the structural compulsion to do so when the bovine gaze of the academic persona is fixated on the command chain, beholden to managerial and government directives setting out the latest calibration of audit regimes. As such, the problematic of complexity and the work of transdisciplinarity are largely shunted to the side, if at all acknowledged, by those in the academy.

While the institutional time of the university is not, as yet, beholden to the real-time assessment of labour performativity,[16] commodity production and the efficient movement of people and things special to the logistical worlds of transport and communication industries, the managerial grammar of logistics is nonetheless encroaching upon the academy. Witness, for instance, the place of KPIs (Key Performance Indicators) as a managerial tool enlisted to determine annual workloads and associated protocols for career advancement within the university. Note that the content of such work does not matter; it is all about outputs that register the activity of knowledge work. Even though the period of assessment is typically comprised of intervals spread over the course of a year, and therefore does not hold the intensity of

real-time assessment and decision making as found in many logistics industries, it is evident that knowledge production within the university has become quantifiable and assessable through recourse to logistical tools. As the time of the university speeds up and further incorporates logistical technologies of governance, the modalities and techniques of knowledge production will similarly undergo transformation. Meanwhile, the institutional and technological terrain of knowledge production will continue to diversify.

The Organization of New Institutional Forms
With the expansion of institutional forms comes a distribution of expertise, whether or not one group of experts recognizes or attributes legitimacy to the expressions of another. There is a strong cultural and technical tendency toward ghettoization with the rise of network society – registered most clearly with the move toward 'cloud computing' and 'national webs'. Along with infrastructural issues, cloud computing presents problems of political economy and protocological disjunctures. And in the case of national webs, access to online information is limited according to national borders defined by 'IP-range, domains, registering and hosting'.[17] With the rise of cloud computing and data-mining economies, it is no longer a question of distinguishing cognitive labour in terms of the content it produces. Instead, we are faced with an emergent techno-system whereby the simple act of clicking and storing data on server farms – whose protocols are designed to prevent easy transfer across 'clouds' – entrusts the security of data to corporations and governments with little regard for user's privacy or desire to move across technical infrastructures.

The implications for knowledge production are multiple: since data is the basic unit of economic profitability (the cost of storage coupled with the economy of data-mining), knowledge produced by informatized labour becomes secondary. Everyone, in short, has the capacity to be produced as cognitive labour, since the measure of economic value shifts from a logic of scarcity (IPRs) to one of aggregation, recombination and storage that corresponds to the materiality of digital information and social production of value.[18] Not only do issues of privacy, security, data-transferability, capital accumulation and surveillance become important within such a paradigm, so too do questions of borders and regions, as cloud providers such as Google divide the world according to state demands (as in the case of China), local and regional customization of software and pricing regimes based on market interests.

Many have identified how the borders between work, life and politics have become more porous if not collapsed. And while this may be the case in any number of empirical and conceptual instances, new borders are always produced. Borders are also multiplied if we understand the border as a space and time of singular intensity whose forces hold the power of conflictual constitution. How, then, to think the work of organization and networks when the field of tensions that comprise the border operates in both perceptible and imperceptible ways for different agents situated in a complex of relations? Perhaps this is a question also of governance. There is always the option to do nothing, which is always something (not nothing) anyway: the act of withdrawal or indecision of course shapes the organization and activity of life and things. To address tensions and affinities in contexts where labour is not a central galvanizing force requires an act of reflexivity, or maybe just requires one to be conscious of or sensitive

to the situation at hand. There is no standard protocol or method to enlist in such instances. Instead, a process of invention is required. And invention emerges at the scene of the border, which registers 'the "non-democratic" element of democracy', as elaborated by Étienne Balibar.[19] Here, the mode of address for organization is non-representational and shaped to a high degree by conflict, failure, contingency, passions and affect. There can only be situated, trans-local methods for dealing with such conditions. And here we see another point of conflict with the often global or abstract view of logistics.

How to proceed with an analysis of the networks through and within which collective knowledge production occurs? Maybe start with a diagram of relations. For sure the concept and politics of labour needs to be expanded beyond a kind of narcissistic joy of self-recognition. This is the danger of affirmation, unless we see affirmation as a registration of difference, conflict and the constitutive outside. Think of the diagram of labour within the IT industries in Kolkata – without the violent act of primitive accumulation by the corporate-state, where the land of peasants is expropriated through the legal mechanisms of the state in the interests of property development, there is no IT industry and no cognitive labour to address as a potential political constituency.[20] In other words, the diagram of the outside of IT labour is precisely the scene of the political. With the dispossession of farming land, the subjectivity of the peasant is effectively programmed into the subject of care work as domestic labour, security, construction and service labour. The so-called skilled labour of the IT worker does not exist without this relation. How to develop a mode of organization and analysis shaped by these variabilities is a key challenge.

Networks and their transversal relations to a range of institutional settings suggest one possible source for sustaining desire and the production of knowledge, which may take the form of refusal, dispute, sabotage, etc. With its signal that modes of outsourcing knowledge production are becoming intensified in ways that don't reduce the power of the state, the resonance here with 'Big Society' is no doubt a worry for some, but perhaps further clarifies the shift from the welfare state to neoliberal, even informational, state. If this results in external forces that give rise to new institutional forms and alternative modes of knowledge production, then that is no bad thing.

Notes

[1]See, respectively, Tiziana Terranova, 'Another Life: the Nature of Political Economy in Foucault's Genealogy of Biopolitics', *Theory, Culture & Society* 26.6 (2009): 234-262 and Matteo Pasquinelli, 'Google's PageRank Algorithm: A Diagram of the Cognitive Capitalism and the Rentier of the Common Intellect', in Konrad Becker and Felix Stalder (eds), *Deep Search*, London: Transaction Publishers, 2009. Available at: http://matteopasquinelli.com/docs/Pasquinelli_PageRank.pdf

[2]Alexander Galloway, 'Protocol', *Theory, Culture & Society* 23.2-3 (2006): 317. See also Alexander R. Galloway, *Protocol: How Control Exists after Decentralization*, Cambridge, Mass.: MIT Press, 2004.

[3]See the fascinating work of Melinda Cooper, who has been studying the economy and geopolitics of clinical labour trials within the pharmaceutical industries – the rise of which can partly be seen as a way of offsetting profits lost from the diminishing returns availed through IPRs as a result of the increasing availability of generic drugs, which in turn can be understood as a sort of pirate economy that even intersects with aspects of open source cultures. Melinda Cooper, 'Experimental Labour-Offshoring Clinical

Trials to China', *EASTS East Asian Science, Technology and Society: An International Journal* 2.1 (March 2008): 73-92.

[4]See Martha Lampland and Susan Leigh Star (eds), *Standards and their Stories: How Quantifying, Classifying and Formalizing Practices Shape Everyday Life*, Ithaca: Cornell University Press, 2009.

[5]But there can also be standards for protocols. The TCP/IP model for Internet communications, for example, is a protocol that has become a technical standard for Internet based communications. Christopher Kelty notes the following on the relation between protocols, implementation and standards for computational processes: 'The distinction between a protocol, an implementation and a standard is important: *Protocols* are descriptions of the precise terms by which two computers can communicate (i.e., a dictionary and a handbook for communicating). An *implementation* is the creation of software that uses a protocol (i.e., actually does the communicating; thus two implementations using the same protocol should be able to share data). A *standard* defines which protocol should be used by which computers, for what purposes. It may or may not define the protocol, but will set limits on changes to that protocol'. Christopher M. Kelty, *Two Bits: The Cultural Significance of Free Software*, Durham: Duke University Press, 2008, p. 330n28. Available at: http://twobits.net

[6]Michel Foucault, *The Birth of Biopolitics. Lectures at the Collège de France, 1978-1979*, edited by Michel Senellart, trans. by Graham Burchell, Basingstoke: Palgrave Macmillan, 2008.

[7]See Henry H. Willis and David S. Ortiz, *Evaluating the Security of the Global Containerized Supply Chain*, Santa Monica, Cal.: RAND Corporation, 2004, http://www.rand.org/pubs/technical_reports/2004/RAND_TR214.pdf. See also Brett Neilson and Ned Rossiter, 'Still Waiting, Still Moving: On Migration, Logistics and Maritime Industries', in David Bissell and Gillian Fuller (eds), *Stillness in a Mobile World*, London and New York: Routledge, 2011, pp. 51-68.

[8]http://transitlabour.asia

[9]A wonderful recent study of electronic waste can be found in Jennifer Gabrys, *Digital Rubbish: A Natural History of Electronics,* Ann Arbor: University of Michigan Press, 2011. See also Matthias Feilhauer and Soenke Zehle (eds), 'Ethics of Waste in the Information Society', special issue, *International Review of Information Ethics (IRIE)* 11 (2009), http://www.i-r-i-e.net/issue11.htm

[10]See Richard Maxwell and Toby Miller, 'Creative Industries or Wasteful Ones?', *Urban China* 33 (2008): 28-29, 122. Also available (English) at: http://orgnets.net/urban_china/maxwell_miller

[11]Special thanks to students enrolled in an MA International Communications module I coordinated at the University of Nottingham, Ningbo in 2009 and 2010. Their collaboration in fieldwork helped me enormously in gaining some understanding of these economies. Documentation by students can be found at Urban-Media Networks: Anthropologies of Urban Transformation, http://orgnets.cn/

[12]Sandro Mezzadra and Brett Neilson, 'Border as Method, or, the Multiplication of Labor', *transversal* (March, 2008), http://eipcp.net/transversal/0608/mezzadraneilson/en.

[13]Again the rough time frame here is 10 to 15 years, though in the case of the sciences this history is much longer, dating back to post-World War II years. See Jean-François Lyotard, *The Postmodern Condition: A Report on Knowledge*, trans. Geoff Bennington and Brian Massumi, Minneapolis: University of Minnesota Press, 1984.

[14]Brian Holmes summarizes this situation with his usual analytical succinctness. Responding to a current debate on Nettime of open versus closed, proprietary driven models of publishing, he writes: 'The fact that this is an autonomous, self-organized seminar betrays my conviction that the university lacks an outside, or to put it another way, that critical thinking needs to articulate itself beyond the nexus of professional obligations that Lisa describes. But this proposal is not simply antagonistic. The point of (re)establishing an external locus of critique is to help transform the inside, to build both pressure and desire for new forms of

education and intellectual activity. Institutional change is fundamentally necessary. Only a critical university system could provide the capacities to steer the knowledge society, or what's more aptly called cognitive capitalism'. Brian Holmes, 'Re: <nettime> some more nuanced thoughts on publishing, editing, reading, using', posting to Nettime mailing list, 30 July 2011, http://nettime.org

[15]See Geert Lovink and Ned Rossiter, 'In Praise of Concept Production: Formats, Schools and Non-Representational Media Studies', in Kelly Gates (ed.) *Media Studies Futures*, Cambridge: Polity Press (forthcoming).

[16]Nevertheless, the time of knowledge production is not without its constitutive power in shaping new class subjects. As Bernard Stiegler observes of Lazzarato's *Les Gouvernements des inégalités, Critique de l'insécurité néolibéralé* (Paris, 2008): 'Maurizio Lazzarato shows very well how this *elimination of the time of knowledge* constitutes the very heart of the project of a government of inequalities in which neoliberalism essentially consists, and it does so at the very moment when an ideology abounds which would have us believe that the very cognitive capitalism responsible for proletarianizing the "knowers" ["*sachants*"], as Jean-François Lyotard called them, could in fact be made to pass for a "knowledge society"'. Italics in original. Bernard Stiegler, *For a New Critique of Political Economy*, trans. Daniel Ross, Cambridge: Polity, 2010, pp.134-135n1.

[17]https://wiki.digitalmethods.net/Dmi/NationalWebConditionDiagnostics

[18]Terranova, 'Another Life'.

[19]Étienne Balibar, *Les frontières de la démocratie*, Paris: La Découverte, 1992. See also Manuela Bojadzijev and Isabelle Saint-Saëns, 'Borders, Citizenship, War, Class: A Discussion with Étienne Balibar and Sandro Mezzadra', *New Formations* 58 (2006): 22-24.

[20]Further analysis of the development of Rajarhat New Town on the north-east periphery of Kolkata can be found in Brett Neilson and Ned Rossiter, 'The Logistical City', Transit Labour: Circuits, Regions, Borders, 30 July 2011, http://transitlabour.asia/blogs/logisticity. See also the more empirically detailed texts by Ishita Dey, Suhit Sen and Ranabir Samaddar on the Transit Labour site.