Migration, Innovation and Exploitation in the Chinese Knowledge Economy: 'Immaterial Labour' and Consumer Electronics Manufacturing

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The world is undergoing a knowledge revolution, unique in the speed and pervasiveness of change...China cannot afford to miss this.[1]

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As rural migrants, Foxconn workers enjoy little labor protection in society at large and suffer from heightened work pressure and desperation in the workplace that lead to suicides and to daily and collective resistance.[2]

The 'knowledge revolution' has determined key destinations of Asian migration. The ascendance of this economic paradigm has received important scholarly attention in a diversity of critiques of the cybernetic, cognitive, and informational extensions of contemporary capitalism.[3] Such theorizations herald the emancipatory potential of information and communication technologies (ICT). Yet they tend to intersect curiously with applied discourses of the 'knowledge economy' exemplified in the market-driven imperative seen above. In their parallel conceptualizations of 'immaterial labour,' both kinds of discourse tend to make absent the very condition of possibility of immaterial labour itself - the *material* labour of migrant workers in China's electronics industry.

This essay attempts to analytically juxtapose key features of 'immaterial' and 'material' labour in the context of the electronics industry. Consumer electronics represent a singular 'hard commodity,' unparalleled in their significance to the 'globalized informational regime.' The electronics industry is hence the site of the knowledge economy's material labours. This essay suggests that surplus-value extraction is effected differently between immaterial and material labour in the Chinese knowledge economy. Whereas 'innovation' is the value-generating capacity integral to immaterial labour, 'exploitation' is the mode of value production proper to electronics manufacturing.

This essay comprises five sections: the first offers conceptual clarification of 'immaterial

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[1] Dahlman, Carl J., and Jean-Eric Aubert. *China and the Knowledge Economy: Seizing the 21st Century*. World Bank (2001), pp. 3

[2] Pun, Ngai, and Jenny Chan. "The Spatial Politics of Labor in China." *South Atlantic Quarterly*. 112.1 (2013) pp. 187

[3] Bulut, Ergin, Rodrigo Britez, and Michael A. Peters. "Cybernetic Capitalism, Informationalism,and Cognitive Labor." *Geopolitics, History, and International Relations* 1.2 (2009), pp.16

labour' focusing on themes of governance and innovation. The second does the same for 'material labour' by summarizing key investigative reports into exploitative working conditions in China's electronics industry. The next three sections illustrate key sites for the value-differentiating of material and immaterial labour: 'development,' the 'spatialization of innovation,' and the 'biopolitics' of value assignment. Throughout, it is demonstrated that the very possibility of conceptualizing 'immaterial labour' is the exploitation integral in the material labour of electronics production.

Immaterial Labour: Governance and Innovation in China's Knowledge-Economy

This section attempts to clarify and synthesize key concepts that define 'immaterial labour.' This section contends that conceptualizations of *governance* are deeply embedded in the defining problematics of immaterial labour. In the case of China, emergent forms of neoliberal governance are especially important to the task of making what we could call a 'knowledge workforce.' But governance in this case must be applied to certain capital-circulating and value-generating activities. Here, 'innovation' figures as the mode of surplus-value creation proper to immaterial labour. At the level of conceptualizing 'immaterial labour' alone, governance and innovation combine to produce a value differential wherein immaterial labour is ascribed a much greater value-generating capacity than material labour.

To proceed, it may be necessary to unpack a number of related concepts before bundling them back up within the aggregate conceptual concept of 'immaterial labour.' These concepts are: the knowledge economy, creative industry, and cognitive capitalism. To begin, 'immaterial

manufacturing than he was with the "informational and cultural content of the commodity."[4] This conceptualization was borne out in subsequent theorizations of the affective and symbolic registers of commodity production and *value creation* more generally in contemporary capitalism.[5] This value-producing capacity can help explain why the immaterial concept of 'knowledge' is so important to management, marketing, economic and development sciences. But this rests peculiarly with Lazzarato's optimism about the discretely anti-capitalist potentiality of immaterial labour, specifically the cooperative vocation of knowledge work which poses "a problem of legitimacy for the capitalist appropriation of its [production] process."[6] Discourses of immaterial labour have accordingly borne out a remarkable convergence of antagonistic ideological positions in terms of attitudes towards capitalism's turn to information and communication technologies (ICT) and immateriality. As we shall see, what they may also have in common is their invisibilizing of exploitative labour in producing ICT itself.

The World Bank's *China's Transition to a Knowledge Economy* is a remarkable source of institutional thinking on immaterial labour in China. The authors' position may be succinctly conveyed as an aspiration for China to massively invest in the "intangible assets [of] education, training, research, development, software, branding, marketing, and distribution."[7] It should be noted here that the 'intangible assets' animating these professions are not static bodies of technique. Rather, they are so many forms of 'knowledge' in a neoliberal register: healthcare and real estate alike offer opportunities for entrepreneurial innovators to challenge, adapt, and exponentially increase existing knowledge. In other words, these services are venues in which

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[4] Lazzarato, Maurizio. "Immaterial Labour." *Generation Online*

[5] See Martin-Cabrea, Luis. "The Potentiality of the Commons: A Materialist Critique of Cognitive Capitalism from the Cybracer@s to the Ley Sinde." *Hispanic Review*. (2012): 583-605

[6] Lazzarato

[7] Dahlman, Carl J., and Jean-Eric Aubert. *China and the Knowledge Economy: Seizing the 21st Century*. (2001), pp. 34.

with an IT manufacturing base to create and target their products."[11] What is noteworthy here is

which economic imaginaries of modernization and development play out. The production of the physical ICT infrastructure is ascribed secondary or 'lower tier' value status.

Against these appraisals stands the body of critique that we could tenuously categorize as 'cognitive capitalism.' The concept emerged from Marxian attempts to grapple with the ascendance of cybernetics and ICT in conditioning the increasingly globalized accumulation and circulation of capital. As the term 'cognitive' suggests, the concept encompasses the distinctly affective resonances of contemporary capitalism, particularly with respect to how technology interfaces with subjective consciousness in labour.[20] Discourses of cognitive capitalism bare the distinct tendency to configure *domination* as the constitutive violence proper to contemporary capitalism.[21] Conversely, such theorists locate the germ of capitalism's subversion within the diffusion of technologically-mediated knowledge and aesthetics production.

Gayatri Spivak's challenging "Scattered Speculations on the Question of Value" represents a necessary corollary to the optimism and myopic technologism of some theorists of cognitive capitalism. She tends explicitly to the 'affective' registers of contemporary capitalism, writing: "if a view of *affectively* necessary labor...as *labor* as such is proposed without careful attention to the international division of labor, its fate may be a mere political avant-gardism."[22] Her critique is predicated on a constant reference to the materialist 'shifting lines of the international division of labor.' In so doing she confronts a tendency to consider contemporary subjectivity according to the idiom of 'freedom,' itself enabled by the 'super-adequation of labour power' effected by ICT. In other words, she opposes the understanding of subjectivity that centralizes human 'consciousness,' whereby ICT could allow, through various cognitive and

[20] See Bulut, Ergin, Rodrigo Britez, and Michael A. Peters. "Cybernetic Capitalism, Informationalism, and Cognitive Labor." *Geopolitics, History, and International Relations* 1.2 (2009): 11-40.
[21] See Dona Haraway's conceptualization of the 'informatics of domination'
[22] Spivak, 162

affective channels, the subject to transcend the capitalist production and appropriation of their bodily labour power.

But to affix contemporary subjectivity to the division of labor means destabilizing such super-adequation, locating subjectivity instead in the production of an exploitatively-produced value differential. Accordingly:

> *The 'freeing' of the subject as super-adequation in labor-power entails an absence of extra-economic coercion. Because a positivist vision can only recognize the latter, that is to say,* domination, *within post-industrial cultures like the U.S., telecommunication seems to bring nothing but the promise of infinite liberty for the subject. Economic coercion as* exploitation *is hidden from sight in 'the rest of the world.'*[23]

Exploitation is indeed hidden from sight. Two recent studies are relevant attempts to address this. Luis Martin-Cabrera describes a highly raced and gendered paradigm of international role-assignment within a continuum of 'material' labour in industry and other tactile labour, and 'immaterial' labor in 'creative industries' and financial capitalism.

The primary purpose of this section is to identify the most common forms of exploitation in the electronics manufacturing industry from available secondary sources.[26] The secondary sources here are generally comprised of undercover and investigative reporting. They include Hong Kong-based labour organizations and EU state-

The forms of exploitation are diverse and interlocking. Yet they are repeated again and again across electronics manufacturing facilities. It may be most impactful to simply lay bare these abuses with minimal analysis. Placing them side by side dramatically illustrates the breadth of abuses that make information and communications technology possible. The following are

mechanisms; they are incapable of communicating meaningfully or constructively with management. This occurs in a climate of an ineffective ACTFU and a total absence of collective bargaining power - again, an absence of effective commu

15% of them 'regularly' audit at least ! of their final manufacturing suppliers; 3% audit at least ! of their smelting/component suppliers; and none of them audit for mineral extraction (Pointing to the dire paucity of information on environmental and labour conditions in the material supply of electronics manufacture.) Notably only 24% of the companies audit suppliers unannounced or with off-site worker interviews.[36]

This suggests that auditing, especially unannounced auditing and opportunities for interactions uncurated by management, is *quantitatively* lacking, to say the least. This comes in addition to reports of qualitative informational, communicational, and enforcement lack in supply chain auditing. Ultimately these reports describe a negative 'doubling' of the emancipatory world of instantaneous information-communication envisioned by developmental economists, the World Bank, and (critical) technology theorists. Concentrating on audits, these investigative reports critically identify and name the irregular and constrained channels of communication and information that connect high-value immaterial labour and the so-called 'lower value tiers' of the electronics industry.

But it is market signals that provide perhaps the most stunning displays of how of information and communication metabolize into migrant worker exploitation. Virtually all of these reports single out the Just-In-Time and zero inventory models of production. Rises in consumer demand are almost instantaneously metabolized into migrant workers' bodies through unmanageable and unreasonable production quotas, hyper-intensified labour, and militant factory discipline. The fairly simple schema is: knowledge workers design new electronics products; marketers and advertisers in creative industries spectacularize and mobilize desire for these products; ICT is used to accurately predict and analyze consumer demand data; production quotas are instantaneously transmitted to suppliers by the brand firm; and the suppliers' flexible

[36] Nimbalker, et. al, 26

workforce is adapted as quickly as possible to new product manufacturing processes and quantities. Herein lies a transmutation of firms' globalized market management into dehumanizing exploitations. And without the latter, the whole of the global informational apparatus would be unthinkable.

The concept of 'peak season' is illustrative. Peak season, sometimes coupled with 'ramp-ups,'[37] refers to times when production suddenly mounts, as around holidays or the launch of a new product. These 'compressed temporalities of production' mean accelerating and intensifying the abuses listed above. Peak seasons involve numerous new hires climbing steep learning curves, as many new workers are needed to use unfamiliar machinery to build products that have not been built before.[38] To provide some context about the scale of new hires involved, 200 to 800 people per day were hired at Catcher Technology in Suqian when the launch of the iPhone 6 was announced.[39] New and old workers alike are subjected to extended mandatory overtime, the removal of rest days, and general conditions of labour extremity. Militant discipline is deployed to countervail the tendencies for waste, error, defect, and inefficiency that characterize the labour of new and untrained workers in peak seasons and ramp-ups. Flexibility in peak season generally means that workers are suddenly switched from day to night shifts, relocated with little warning between dorms and factories, and denied rest, a tendency t work7.2 1(w) -02 ((ni) 0.2 -02h8orki) 0.2 (l) 0.2

innovation. It is germane to return to the theme of immaterial labour, to see how discourses of ‘development’ produce the value differential between prized knowledge workers and the rural migrants who who make ‘knowledge work’ possible.

Development and Historicism

‘Development’ resides in any assessment of ‘immaterial labour.’ Hardt & Negri, for example, begin their discussion of post-modern production with the claim that a ‘succession of economic paradigms’ has proceeded through three epochal moments, with the contemporary

decentralized market-based decisions."[43] Conversely, for critical theorists the 'Era of Silicon' may be read as an epoch of capitalism's auto-generated overcoming. As Martin-Cabrera notes,

appear to be proper to an ‘earlier’ form of industrial capitalism. Despite the incessant drive for hyper-innovative industry, some development literature intimates that it may be more expedient for developing economies to pursue ‘less advanced’ industrial forms if there is sufficient need due to abject poverty or other conditions. The latter was the claim of a contribution to the

second is the efflux of one of the greatest human migrations in history, and is the site of system-founding exploitations unseen in the techno-spectacle of the knowledge economy. As the CLW report cited above suggests, development quite often literally 'leaves things unfinished,' including the ceilings of a Jabil circuit facility where tiles collapsed dangerously in the washrooms.[50] Endless production orders mean that sometimes there is literally not enough *time* to develop industrial infrastructure that puts a solid roof over workers' heads.

This is the reality of materializing innovation. Knowledge-led development is refracted through the products of the electronics industry. The industry in turn affixes production to the 'shifting lines of the division of labour,' pursuing the greatest yield possible on labour. And brand firms that dominate knowledge-production and diffusion demonstrate a patent and systemic incapacity and/or refusal to meaningfully transform production practices. Given all of this, how else can the knowledge economy proceed than through the violent exploitations enumerated above? Is this what management and development theorists have in mind when they

differentiations: consider the importance of Economic and Technological Development Zones (ETDZ), High Tech Industrial Development Zones (HTIDZ), and Science and Technology Research Parks. *China Briefing*, an information review for prospective foreign investors, states that in ETDZ and HTIDZ space, "the convenience of established infrastructure, reserved land and one-stop services... streamlines entry into China."[51] Indeed, these zones are expansive spatial receptacles of FDIs. But even more-so they materialize the national innovation system described earlier through complex spatio-political assemblages of multinational corporations, state-owned enterprises, universities, and spaces of vastly differentiated labour.

We must unfortunately set aside here the matter of constructing these spaces in the first place, which requires extraordinary levels of migrant 'material labour' in construction. Recall the theorists of Chinese creative industries who expounded the value-addedness of green-space, entertainment, night-life, urban cosmopolitanism, and creative cities' inherent value-generating attributes. The Science and Technology Research Park represents the confluence of such attributes within the incessant engine of commercializable innovation. Even the name 'park' evokes the greenery, leisure, and urban pastoralism purportedly privy to those of the creative class. Contrast the 'park' with what Pun and Chan have called the 'Dormitory Labor Regime'[52] of the electronics industry. This regime instantiates a "total system of daily management"[53] with factory-disciplined regulation of sleep-times, bathroom use, nourishment, and hygiene in dehumanizing dormitories. Workers essentially *never stop working*. Whereas the 'park regime' aspires to inculcate in knowledge workers a liberal and spontaneous innovation-capacity, the

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[51] <http://www.china-briefing.com/news/2011/10/05/understanding-development-zones-in-china.html#sthash.tjnI8Hkg.dpuf>.

[52] Pun, Ngai, and Jenny Chan. "The Spatial Politics of Labor in China." *South Atlantic Quarterly*. 112.1 (2013) pp. 180

[53] Ibid, 185

dormitory regime renders work and sleep coterminous, effecting the total industrialization of the life process and reducing the worker to the position of 'a speck of dust on the shopfloor.'[54]

It is important to note here that the *IT Workers Report* details the specific rural origins of electronics workers. China's transition to a knowledge economy is accordingly spatialized as what Anthropologist Yan Hairong calls a 'spectralization of the rural.'[55] Disavowed, but never superseded, the urban knowledge economy is 'haunted' by the unsettling figure of the rural migrant, especially the woman migrant.[56] This dynamic is partially generated by the process of Primitive Accumulation particular to China, whereby collectively-held lands are partitioned to private owners through state channels.[57] This has at times paradoxically produced a mass 're-proletarianization' in rural China, generally involving staggering value differentials between Land Use Rights (LURs) yielded from the Chinese state to some buyers and similar rights accorded to rural Chinese.

For the management theorists cited above this is envisioned as an 'unlocking' of latent capital; in characteristically neoliberal language, it represents a freeing up of individual economic subjects' entrepreneurial capacity' by giving them start-up capital in the form of their own land.[58] This is indeed often the case. As the *Asia Monitor Resource Center* has found in the case of Shenzhen, a key hub in China's national innovation system and home to a sprawling HTID: "dispossession of peasants...created a middle class, and expanded the base of the consumer class. These peasants were allotted residential flats in city centers and granted urban

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54 Ibid

55 See Yan, Hairong. "Spectralization of the Rural: Reinterpreting the Labor Mobility of Rural Young Women in Post-Mao China." *American Ethnologist* 30.4 (2003)

56 Ibid, 581

57 Ibid, 570

58 Bruton, et al, 11

hukou registration."[59] Far from emancipatory however, authors Leong and Pratap point to the intractable inequality that this arbitrary division of social and spatial advantage has produced.

Knowledge and industrial-led urbanization has thus staged the stratification of rural people: rural migrants from central and Western China are ascribed a different value than rural people whose lands have been 'innovatively' developed, or who reside in urban *hukous*. Feng Xu has recently illustrated how this arbitrary capital-empowerment plays out spatially, noting that: "Peasants who live in outskirt areas have … found a niche market to build on their own land and provide rentals to migrants. But this rental market is not regulated. One often finds migrants living in unsafe and crowded conditions."[60] Migrant enclaves serve as counterparts to dormitories, where migrant labourers are precariously concentrated, with as much value extracted from them as possible.

This can be an example of key 'feedback' relationships between material and immaterial values. Xu describes the mobilization of immaterial technique and labour in urban governance in the form of *shequ*, the Chinese government's spatial conception of 'harmonious community.' The diversification of Chinese cities due to rural migration has resulted in an accelerating and concentrating of 'immaterial labour' in the form of urban services and management. Notably, this results in a gated spatial differentiation of *shequs* according to class, profession, and socioeconomic privilege. As Xu and Ann Anagnost both note, urban governance of migrants also takes the form of dispossession through routinized demolitions of migrant enclaves. Dispossession becomes part of a 'feedback' circuit whereby immaterial labour translates into the exploitation of migrant workers. The issue of wages for workers in the electronics industry is another example of this. Wages are doubly problematic in that they are inadequate to begin with,

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[60] Xu, Feng. "Gated Communities and Migrant Enclaves: The Conundrum for Building 'Harmonious community/shequ.'" *Journal of Contemporary China* 57:17 (2008), pp. 643

and they do not correspond to rising costs of living in urban industrial areas. China Labour Bulletin recently concluded that "wage increases for China's lowest paid workers have often been eroded by higher costs of living, and the issue of wage arrears remains a serious and unresolved problem throughout the country."[61]

This suggests that there are concrete relationships between the exploitation of migrant 'material labourers' and urbanization within a knowledge-economy framework through the urban cost of living. This analysis is borne out in a broad range of recent empirical studies. The *IT Workers* report observed that Shenzhen had achieved the highest minimum wage in the country in order to attract labour, however this wage differential was essentially consumed by the increasingly unmanageable cost of living.[62] The AMRC similarly found a positive correlation between rising costs of living and heavy industrialization in Shenzhen, without an attending wage increase. All of this works as incentives for workers to comply with manufacturers' mandatory overtime regimes. And it speaks to the work of spatializing innovation. Urban work-spaces are constructed as differentials between material and immaterial labour. Urban migrant enclaves and electronics facility dormitories serve as negative doubles of creative cities and knowledge parks; here, the value differential necessary to the production of immaterial labour is marked and reproduced in space.

Biopolitics and Labour: Human Capital

In theory as in practice, the value differential between material and immaterial labour is the true engine of the knowledge economy. But what the literature suggests is that there is a profound 'corporeality' to this differential. Immaterial and material labour occupy different strata within a bodily economy of knowledge production, one which biopolitically allocates value

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61 <http://www.clb.org.hk/en/view-resource-centre-content/100206>.

62 Stracke, et. al, 11

accumulation and difference to workers as biological subjects. This section accordingly describes how certain biopolitical concepts produce the value differential between material and immaterial labour. Again, immaterial labour emerges as a concept that is only thinkable due to an exploitative value differential affixed to the division of labour.

It is not coincidental that Michel Foucault's famous study of 'biopolitics' began with lectures on political economy and the emergence of neoliberalism.[63] Biopolitics indeed has a long trajectory in critical political economy. Chakrabarty and Spivak for their part trace the critical study of biopolitics to Marx's concept of abstract labour. For Chakrabarty this was necessarily a historical phenomenon; abstract labour as an aspirational concept was bound to the emergence of particular juridical regimes associated with the universal, and by extension with the conventional European liberal subject.[64] Similarly, Spivak sees in abstract labour the realization of a 'materialist predication of the subject' whereby human subjectivity is understood as the "subject's super-adequation of itself."[65]

But in both Chakrabarty and Spivak's assessments, the logic of capital follows a necessary recourse to biology in order to imagine the 'human' host of abstract labour. In addition to the gendering and racializing of labour-imaginaries - in terms of efficiency, potential for acquisition of skills, natural propensities for certain kinds of labour, etc. - this biological reduction of the figure of the 'worker' asserts that the immediate human conduit of abstract labour is always a biological subject differentially positioned according to a fluid taxonomy of physiological or genetic traits. Capitalism subsequently imbricates its logic into the social construction of these taxonomies, affixing a logic of value creation to social imaginaries of a0.24 0 0 igi

sexuality, age, regionality - all of which may or may not antedate the emergence of capitalism, but which ultimately find themselves mutually constitutive of the capitalist enterprise of ‘making a (knowledge) workforce.’ What is most s

to heart, Foxconn and I grow together.’”[71] The exploitations meted out in this facility - whose location inland in Chengdu is quite important - give lie to the framework of emancipatory human

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