Postindustrial Discourses and the Administration of Society

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Postindustrial Models of Development

The emergence of "postindustrial" society can be viewed historically, correlating with a post-Fordist economic configuration (Lipietz, 1992) in which the three general predictions of the information society and the theory of postindustrialism have been realized: 1) productivity is directly related to the generation of knowledge and its economic application; 2) service delivery will be the prime economic activity; 3) any informational/postindustrial economy will increasingly require occupational skills based on manipulating and applying knowledge (Bell, 1973). While the history of postindustrialism is marked by these economic and sociological shifts, it is also marked by a profound transformation of the configuration of corporate institutions whose vertical integration and reliance on information technology dramatically increased their power within what John Kenneth Galbraith called "The New Industrial State" (Galbraith, 2007[1967]). The power of the corporation in this new industrial state lies in its "technostructure" -a collective of technocrats who operated outside the purview of shareholders to ensure that the "free-market" was continually controlled by corporations who effectively competed not primarily for profits but for their survival and expansion (Fligstein, 1990).

The transition to a postindustrial society can also be seen as part of a larger historical movement of modernization and rationalization whose consequences have come to take on ontological and political significance (Giddens, 1990). Whether one chooses to view these developments through the prism of the "risk society" (Beck, 1992) in which the logic of production is accompanied by the production of risks, or the "network society" (Castells, 1996) in which information and communication technologies come to assume the central role in the process of social change, it seems clear that these changes are directly connected to problems of social and industrial organization (administration) and the role technology plays in these processes.

One of the most vexing problems concerning postindustrialism concerns the meaning of these developments on at least two levels. First, what do these developments mean in terms of understanding the qualitative transformations in the political and economic organization of society? How are the institutions that are so central to the theory of postindustrialism (the State, the corporation, the market) implicated in these developments and what is their normative constitution? Are these institutions essentially closed, self-referential systems (Luhmann, 2005)? Or are they the products of purposive and/or inter-subjective communication (Habermas, 1984; 1987)? The answer to this question could have profound consequences for understanding the dynamics of social change. The second level of meaning concerns the ability and capacity of individuals to engage with society in meaningful ways. Philosophers

who have answered this question have typically been bleak. The increasing sophistication not only of technology (and in particular production technology) but also social science techniques has been identified as the determining factor in how we come to understand our relationship to the natural environment, to our political institutions, and to our relationship with others (Ellul, 1964). One can develop a critique of these developments in ontological terms where the price of modern technology is paid for with an impoverished understanding of "being" (Heidegger, 1993). Likewise one can also view such developments as a continuation of the historical progression of capitalism where a distinctly technological rationality has become political rationality within a totally administered "one-dimensional" society (Marcuse, 1964).

Rationality, Knowledge and its Economic Translation

It is widely agreed that the production of knowledge takes on exaggerated economic importance within postindustrialism. Fritz Machlup (1980) was one of the first economists to recognize this development. How are we to understand the rationalization of knowledge production as well as its economic properties? While it is clear that “rationality” is in many ways situated within the contexts of everyday life and experience (Schutz, 1943; Bourdieu, 1977) developing a critical position requires one to understand not a singular logic or rationality of production but rather the different rationalities that are "put into production"; that is, how different types of rationality are instrumentalized within the labor process (Feenberg, 2008). If we follow Foucault (1980, 1995) the problem of rationality is invariably entwined with power and knowledge; both occupy a central position in the formation of subjectivity. Although Foucault is most concerned with the deployment of various “disciplinary mechanisms” that can rationalize the movements of the body (be they in a prison or factory) he understands these mechanisms as historically specific forms of rationality which are embodied in institutions, technologies, practices and so on. So how do these forms of rationality change with the transition from an economy based on manual labor to one based on intellectual labor? Under postindustrialism, could we now be witnessing the emergence of a new form of social rationality which agitates the old contradictions in the logic of production and control in monopoly capitalism (Sohn-Rethel, 1978)? And if this is so, does it not urge the social sciences toward a re-evaluation of their role in the administration of society as well as the ethics of practice (Habermas, 1970)?

Administrative Rationality and the Transformation of Work under Monopoly Capitalism

It is common within the discourse of postindustrialism to question to what extent it signals a qualitative break from the old production paradigms of early modernity. Is it, as Beniger (1986) argues, just another successive stage in the long evolution of social, political and technical control? Whereas in the early stages of industrialism, control was predicated on mastering and rationalizing the movements of the body (Rabinbach, 1990) now the control problem appears to be in the rationalization of the mind. Labor-process theory (Braverman, 1998; Burowoy, 1979) has shown that the authority of management over the production process has historically been derived from the separation of task conception and task execution resulting in a deskilling effect. Technology was also leveraged with the goal of automating as much of the production process as possible (Noble, 1977). Whether the deskilling thesis is accurate or

not depends on how one account's for and measures “skill” which has become increasingly difficult. Whereas Taylor could measure skill “scientifically” in terms of quantitative relationships between inputs and outputs, how does any "science" of management proceed when such inputs and outputs are now seen to be recursively enabling each other within a production process described as increasingly "social" and "emergent". Are we witnessing a the emergence of a "post-capitalist" society in which administration is no longer as relevant (Drucker, 1969; 1993) or simply new "spirit" of capitalism in which the study of administration and managerialism takes on heightened significance (Boltanski & Chiapello, 2005)?

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Automation, Innovation and Understanding Sociotechnical Change

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Communication, Cybernetics and Society

In 1999 Microsoft CEO Bill Gates envisioned "business at the speed of thought" where a corporation's competitiveness would be predicated on a "digital nervous system" enabled by elaborate information technology (IT) infrastructures and "intelligent" software (Gates & Hemingway, 1999). The digital nervous system is just one example in a long history of business metaphors that attempts to envision the perfect marriage of social and technical capabilities. But the metaphor is also interesting in that it is generally indicative of a broader historical pattern of social and technical rationalization where the phenomenon of automation, such a central precept of cybernetics, has been the key historical driver of the labor-process and arguably the information society in general (Morris-Suzuki, 1986; Hirschhorn, 1984). The work of Stafford Beer (1967) offers an example of one of the earliest efforts to operationalize cybernetics in bureaucratic contexts.[1] Successfully realizing a completely automated office has long been a seductive yet elusive objective for managers (Zuboff, 1988; Ciborra, 2000). In a sense, the automated office represents a specific historical representation of a workplace innovation that never completely happened. Why? This comprehensive exam looks at this question is terms of the co-evolution of cybernetics and management science (or operations research) on the one hand, and the politics of technical innovation on the other. The exam proceeds in three thematically interrelated tracks all of which are comprised of both theoretical and empirical works which were selected to represent a cross-section of this co-evolution.

The first section attempts to recover the elementary ideas of what Heinz von Foerster called "first" and "second" cybernetics, and more importantly, attempts to situate these ideas within the context of work and technology in the information society. What was "cybernetics"? As Norbert Weiner suggested, it is "the science of control in the animal and machine." The end goal of this project was at once a scientific and philosophical one: to provide the final resolution to the mind-body problem by developing a physicalist science of the mind (Dupuy, 2000; Hayles, 1999). This science however, manifested itself in varied forms from the "hard" mathematical approach of Weiner (1954) and his contemporaries, to the "soft" anthropological approaches of Bateson (1972), Maturana and Varela (1992). However, in pursuing the "science of control" cyberneticians would make provocative contributions to across varied scientific disciplines and help to reframe questions which are still debated today. Are human beings fundamentally machines? Do we live in an era of "posthumanism" or

[1] Incidentally Beer would subsequently write two influential books in operations research: The Brain of the Firm (1972) and The Heart of the Enterprise (1979) in which he discussed his theory of "autonomic management" which predates IBM's *autonomic computing* initiative by about 23 years.

"transhumanism" as some have suggested (Moravec, 1988)? Are markets self-correcting? Are institutions essentially closed autopoeietic systems? Such is the legacy of cybernetics; an attempt at constructing a "universal science" which (regardless of its success or failure) influenced in some small way almost all disciplines we know today: political science, economics, medicine, anthropology, and as I have indicated, business and management.

Technology, Economy and the Management of Innovation

The second section is designed to highlight the dialectical tension between the function of economic rationalities which seek to guide the innovation process and the institutional and social conditions under which innovation actually emerges. The problem is conventionally characterized as the result of conflicting dynamics within organizational culture (Biggart, 1992) and the desire of management to maintain control over a process which appears to be increasingly complex and uncontrollable (Nonaka & Takeuchi, 1995). Nonetheless, the management of technological innovation in organizations often falls under the purview of economic calculations (an economic rationality) regarding costs and estimated benefits. The idea is to control and distribute organizational resources in the most efficient way possible. But the notion of efficiency is, of course, relative and culturally embedded (Gao, 1998; Alexander, 2008). The concept is also concerned with imposing a degree of disciplinary control which is almost always political. Putting this aside for the moment, the problem of making the process of technological innovation "efficient" is directly concerned with a tension between institutional constraints and a chaotic process of social interaction in which people cooperate to varying extents . But the problem of efficiency, as I have mentioned, is compounded by its absorption into a singular prevailing economic logic. What is strange about this economic rationality is that it often helps to "enact" the social reality which it claims only to be describing (Law & Urry, 2004; Callon, 2007). The concept of "enaction" is useful in that it restores an ethical component to innovation studies that is frequently externalized by the economic perspective, and urges sociology to account for the choices and decisions made by actors which directly affect the dynamics of innovation (Callon, 1992).

Ordering Disorderly Practice: STS, Actors and Interests

The final section "Ordering Disorderly Practice" attempts to bring together the two previous sections by considering innovation as an intensely political phenomenon that requires a methodological sensitivity to the politics of sociotechnical change. It includes contributions from Science and Technology Studies (STS), feminist studies of technology, as well as critical philosophy of technology. While each of these approaches claims to offer an engaged platform for social science research, they each accomplish their agenda in different ways. They are, nevertheless, linked together by their emphasis on an ontological politics which can be seen through everyday interactions with technology.

In terms of the innovation process, sociology of technology informs us that technological innovations do not simply "happen"; Schumpeter's influential theory of the entrepreneur is no longer a plausible explanation, nor is "the market" given the highly collaborative and contingent nature of IT work (Orlikowski, 2007). Rather innovations are the result of complex social and political negotiation,

contestation and conflict (Callon, Lascoumes, & Barthe, 2009). While technology plays an integral role in organizing and managing collective knowledge (Bowker & Star, 1994; 1999) by enabling some actions and disabling others, the problem of action is becoming increasingly opaque (Latour, 2005). It is tautology to suggest that defining the parameters of innovation is both a social and technical challenge where neither side completely determines the other; but these relations are by no means symmetrical and this is exactly the problem (Feenberg, 2002; Suchman, 2007).

There has been debate regarding the most appropriate methodological approach to understanding sociotechnical change within distinctly capitalist bureaucracies (Wajcman, 2006). Recently management studies and organization studies have shown interest in STS and in Actor-Network Theory (ANT) specifically (Woolgar, Coopmans, & Neyland, 2009) as a methodological basis for studying technological innovation in business. However, there has been some doubt as to whether ANT can actually provide a suitable approach to understanding sociotechnical change within the context of everyday practice (Whittle & Spicer, 2008). The methodological synthesis raises some interesting questions regarding the agenda and "self-identity" of each discipline. What are the implications of operationalizing STS approaches in the field of management? Is STS's "epistemic radicalism" even operationalizable? And if it is, what are the "transaction costs" associated with this move? Could it possibly be that STS's radicalism might cause it to write cheques that it cannot possibly cash?

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