Convergence, Divergence, Urgency and The Long View on ICT

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We are set the task of describing the "institutional ecology of social research on information and communication technologies" within a few pages. What follows will be less a whole landscape than my own particular viewscape – I will identify some configurations that I believe are new and interesting in this field, but in the interests of being coherent will not attempt to speak to even all the most promising trends and in the interest of brevity I will not qualify swingeing generalizations.

The Long View

The final stanza of T.S. Eliot's Four Quartets contains the wonderful lines:

> At the source of the longest river
> The voice of the hidden waterfall.

Michel Serres uses a very similar image to remind us that the technology that we are playing with today – technology that seems so new and revolutionary does in fact have a long history attached to it. There have been some very good historians/analysts of the long view to ICT development. JoAnne Yates' work in Communication and Control and since explores humble origins of some of our cherished new forms: the email genre rooted in the intra-office memorandum of the late nineteenth century; the computer rooted in insurance industry organization in the middle of that century and so on. (The latter is also tied by some to the principle of the division of labor celebrated as the invention of the industrial revolution and inscribed in the first notional computer in the 1830s quite deliberately by Charles Babbage). Paul Edwards, inter alia, has looked at the long term development of network (and internetwork technologies). One ur-statement here is Beniger's The Control Revolution. More recently, Stephen Graham's Splintering Urbanism also trawls back to the mid nineteenth century: this time for the origin of networked infrastructure. How is all this expressed institutionally? To the best of my knowledge, not. The authors I have cited above are lodged in philosophy; communication and organization theory; information science; communication and sociology and geography in turn. There is some cross reference, but not a lot. What is clear though is that in each of their respective fields these folks have tapped a rich vein.

A few brief final remarks on the long view. First: I have concentrated on the long view going back to the early nineteenth century and the aspects of the industrial revolution. This is because I know of not enough good work that goes back earlier – though clearly some work on the encyclopedias, on universal languages through the ages (Mary Slaughter), on the history of librarianship (which Pablo Boczkowski is getting into) are all relevant. Second: it's not just a case of saying that there is nothing new under the sun. Rather, I suggest that we need an Annalist analysis of the varying temporalities of social and ICT change: we are going native on our sources if we buy into the rhetoric of rapid change at all levels which render the past irrelevant. This logic has prevented Information Science from learning from Library Science; students of hypertext from learning from the Documentalists and so forth. Lessig's work on mixing would be a lot richer for recognition of resonance with book writing in the nineteenth century… . Finally, I believe that there is a great role for social geography and GIS both in exploring

some of these issues – and I think that there is a real resurgence of work in the former at the same time as the latter has become a leader in much ICT standards development.

Working between Theory and Practice

To use a phrase I don't have much truck for, my home discipline is social studies of science. This has been a field which traditionally has stood back – as a matter of principle – from engaging with the areas that it studies. This is justified by the principle of sociological detachment or anthropological strangeness or generalized symmetry – all locutions that drive a wedge between theory about a field and practice of it. The development of new ICTs in the context of business as well as work in the humanities, social sciences and science has slowly changed this. Within my field, it is now increasingly common to see folks out of the design world coming to our conferences – and vice versa. The trend began perhaps with the Work Practices and Technology group at Xerox PARC under John Seely Brown. Lucy Suchman and crew brought ethnomethodology into the design of technical artifacts – and this is still a very live program. The battles are different now – GOFAI (good old fashioned AI) is no longer the enemy – just as in science studies naïve positivism is pretty much irrelevant. From within science studies we are now having some interesting debates about the degrees to which social scientists can and should intervene in their objects of study – Phoebe Sengers, Katie Vann and my colleagues Karen Baker and David Ribes are figures here. It's not all about hi-tech design for the business or academic worlds. I think that there is some really interesting work being done now on how to represent knowledge of and for given communities within information systems. Helen Watson Verran – a great theorist of Aboriginal ontologies – has been collaborating on a database design project for representing indigenous knowledge. Ramesh Srinivasan has been doing similar work in the United States. The theoretical underpinning of their work is that the classification systems and categories adopted really do make a difference in the accessibility and use of the work: you have to have an anthropologist or equivalent working with the system designers in order to avoid the trap of reproducing imperialising categories and losing your audience before you begin (the common fate of representations of local knowledge). Sharon Daniel has been doing some good work here – again theoretically informed – on representing community knowledge in the Bay Area.

Some asides on theory and practice. First: there is a tradition in France (the 'grey literature') of bringing together hi-tech policy and social science theory. While there are some encouraging signs on this front, I do feel that there is a great need within the US (the culture I know best here – I'm not claiming the US as the center of *all* creation ☺) to encourage a richer interplay here. On a related front, the SSRC attempt to bring media researchers and media activists together is useful I think – though there's always the tension between saying something theoretically interesting and producing something organizationally fungible. Too often the evaluation of new systems has chosen the latter course. Second, I think there has been some particularly exciting work at the intersection of theory and art. While this has always been a rich nexus, a good amount of electronic art is now exploring just the sorts of issues being developed in this workshop. From the 'theory' side there are the *Iconoclash* and *Making Things Public* collections; from the art

side, there is the work of Natalie Jeremijenko (she is trained in science studies) or Warren Sack for example.

The Database

Lev Manovich puts it felicitously: the database is the central symbolic form of our time – from the era of the industrial revolution on. I have myself been working the underpinnings of information infrastructures for a number of years – and have along the way discovered a great deal of work (not yet swept up into any coherent organizational form) on the classifications, standards, controlled vocabularies, interfaces that hook us into the various databases that we deal with. Courtesy of the Patriot Act, in the US we now have some very interesting work being done on surveillance technologies in general (shades of Foucault and the origin of the database form in governmentality) and the use of surveillance data in particular. While I believe that we have yet to develop a full set of tools (linguistic, semiotic, science studies) for analyzing the key role of these hidden supports for flashy infrastructures, this is a growth area that is receiving increasing attention, notably in schools of Information Science/Studies.