Fast Capitalism
Volume 2 • Issue 2 • 2007

ISSN 1930-014X
doi:10.32855/fcapital.200701.014

"Upgrading" Market Legitimation: Revisting Habermas's 'Technology as Ideology' in Neoliberal Times

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This paper revisits Habermas's notion of 'technology as ideology' in the context of contemporary political culture. It argues that the methodological and substantive contours of Habermas's framework are still valid today. However, the role that technology plays as ideology has changed dramatically in the context of contemporary capitalism. No longer does it provide a legitimation for the political administration of the economy in the context of the Social Democratic state; instead, it legitimizes a new, neoliberal regime, whereby political intervention in the workings of the market is highly prohibited. This argument is substantiated with an empirical analysis of contemporary discourse on information technology, or the 'digital discourse'. It shows how neoliberal tenets regarding the workings of the market are rearticulated as technological realities, and their ideological undercurrents are neutralized. According to this digital discourse, with information technology the promise of a self-regulating market has been materialized. As the market becomes more rational and frictionless by the force of information technology it also gains and further deserves more autonomy from political intervention. This new (network) 'technology as ideology', therefore, legitimizes key processes entailed in the shift from a Keynesian welfare state to a neoliberal state: the insulation of the market from political intervention and the corollary trends of the marketization of society and the disorganization of the economy.

The last few decades have been marked by a new constellation of power between markets and states, and market and society, with markets becoming increasingly disembedded from society (Polanyi 2001; Harvey 2005). This disembeddedness—part of a broader social transformation from Fordism to post-Fordism—is dominated by two trends: marketization and disorganization:

Marketization entails the increasing dominance and scope of markets in social life: markets have gained more autonomy vis-à-vis the state, becoming more deregulated, and more globalized (Castells 1996; Sassen 1999); the state withdrew not only from intervening in the workings of the market, but also from ownership of "the commanding heights" (Yergin and Stanislaw 1998) of the economy through privatization as well as the funding and operation of many welfare mechanisms that were put in place in order to provide a buffer zone between individuals and the market (Piven and Cloward 1997); more and more spheres of social life are being administered by the free market or modeled after a market-like rationale (Somers and Block 2005); there has been a trend of privatization of risks and responsibility from the state to individuals; there has also been a process of privatization in the world of work, where a class compact has been substituted by individual contracts; the decline of market regulation and downward income redistribution has also led to an increase in class inequality within national boundaries and between nation states (Harvey 2005; Milanovic 2007).

Disorganization (Offe 1985; Lash and Urry 1988)—partially a consequence of the marketization of society—refers to a process whereby markets, the economy, and social life in general have become more liquid (Bauman 2000), more chaotic and complex (Urry 2002); the globalization of financial markets has made capital more mobile, leaving local markets more volatile and unstable as a result (Sassen 1999; Harvey 2005; Sennet 2006); production has become more flexible, constantly adapting to changing markets' demands; production and consumption cycles have been accelerating (Harvey 1989; Rosa 2003; Agger 2004); companies have shifted in their organization from a model of a top-down hierarchized bureaucracy to a horizontal, dehierarchized, and decentralized network (Castells 1996; Sennet 2006); flexible, lean, 'just-in-time' production has made work-life more "mean" (Harriso, 1997), and increasingly precarious, unstable, and unpredictable (Bauman 2001, chap. 2); tenured workers are replaced by part-timers and flexitimers, working on ad-hoc projects, rather than developing a linear career path (Castells 1996; Sennet 2000); and economic risks (as well as spoils) have been individualized (Beck 1992;

Beck 2000; Bauman 2001).

Four causes have been suggested to underlie these dynamics: economic, political, social and technological. Economically, the disembedding of markets from society, and their increased disorganization can be seen as responses to the internal constraints of the Fordist mode of accumulation, and the need of capitalism to be restructured (Harvey 1989; Castells 1996). Politically, these dynamics had been accompanied by a transition from a political ideology of national embedded liberalism (or social democracy, Keynesianism, welfarism,) to that of global neoliberalism (or market fundamentalism) (Aune 2001; Duggen 2003; Harvey 2005; Smith 2005; Somers and Block 2005). Socially, these processes are seen as the result of a new balance of power between capital, labor, and state, with capital gaining a newfound autonomy from labor, and hence with the state diminishing in its legitimacy (Sklair 2002; Ram 2007). Technologically, these dynamics had been facilitated by the emergence of new information and communication technology, allowing space-time compression, acceleration, and the transition to a social dynamics of networks (Harvey 1989; Castells 2002, Sassen 2002; Rosa 2003).

Beginning in the 1990s, and particularly with the popularization of the Internet, a determinist version of the technological thesis gained a significant cachet in the public discourse. So much so that the realities of the new capitalism has come to be explained as a direct result of new information and communication technology (or network technology). Globalization, Google, outsourcing, 'just-in-time' production, the rise of India—these new keywords in the lexicon of the new capitalism, had also become keywords of the Information Revolution. The close affinity between these two lexical sets was readily clarified: a new technology enables a new society. Globalization is carried over the networks of communication; the new economy is essentially all about new business models; Google is the epitome of a new business model and new consumer products centered on the value of information and its transmission over communication networks; outsourcing and 'just-in-time' production are hard to imagine as viable economic practices without information technology; and India owes its rise as a capitalist miracle to customer-service call-centers in Bangalore, and to the surge in the number of software engineers and global high-technology hubs. This outlook reflects a prevailing assumption regarding the relations between technology and society: that the former makes the latter. Such viewpoint was propagated in the public sphere by journalists such as The New York Times' Thomas Friedman, scientist and essayist Nicholas Negroponte, writer George Gilder, prominent digerati, such as Bill Gates and Steve Jobs, and publications such as Wired magazine, which was incidentally inaugurated in the spatial and temporal hotbed of the convergence of network technology and the new capitalism—Silicon Valley in 1993.

In light of this hegemonic viewpoint, this paper wishes to offer an alternative framework, which bypasses the question regarding the primacy of technological, political, or economic factors, and instead points to how these vectors align along a new social totality. It does that by pointing out the legitimation function of technology: technology is not only an instrumental medium by which economic and political transformations (such as that from Fordism to post-Fordism) are enabled, but also a communicative medium through which such transformations are explained and legitimized (Herf 1984; Heffernan 2000; Sturken and Thomas 2004).

Technology as Ideology

The legitimatory function of technology in modernity has been most elaborately theorized (and critiqued) by the Frankfurt School as part of its more general critique of instrumental reason. According to this view, with modernity technology has become central not only as a tool of the capitalist economy and the bureaucratic state; in addition, the discourse on technology fills a central ideological role in legitimizing this prevailing order. The ideology of technology is that social, economic, military, moral problems—in short political questions—have a technical and technological solution. Progress is equated with technological advance, and the rationality and universality of technology substitutes for the divisive and 'ideological' process of politics (Fromm 1968; Horkheimer and Adorno 1976; Feenbert 1991; Marcuse 1991).

In his essay Technology and science as "ideology", Habermas (1970) lays out a history of market legitimation, whereby a legitimation based on the principles of neocalssical political economy, that is, on the internal workings of the market, is replaced by another, external legitimation, with the emergence of the Keynesian welfare state. From this point onward political practice is measured and legitimized in terms of the technical problems at hand, rather than in substantive terms. The role of politics is reduced to finding the technical means to achieve goals (such

as economic growth) that are in themselves understood to lie outside the realm of politics (Habermas 1970:100-3). Technology is ideological, then, to the extent that political issues are treated as technical issues: tensions and contradictions are overcome by delimiting the scope of the political, and as a result the instrumental rationality of technical language colonizes the sphere of politics.

Habermas' conceptual framework, like any system of thought, is also historically contingent. Habermas writes at a time when the Keynesian welfare state is still very much engaged in the administration of the capitalist economy. Under these conditions, intervention in the economy is in fact the source of political legitimation. As I have outlined above, in the three-and-a-half decades since the publication of Habermas's essay key components in his framework, pertaining to the relations between states and markets, and technology—have gone through radical changes. Most significant to our discussion is the shift from the Keynesian-welfare state to the neoliberal state, and the explosion of information technology.

I understand Habermas's framework of technology-as-ideology to consist of two arguments: a general argument that pertains to the depoliticizing ramifications of a technologistic consciousness; and a historically-specific argument that pertains to the legitimation of capitalism under Fordism. The purpose of this paper is to offer both a revival of the general argument and a revision of the historically-specific argument, now that capitalist societies have been rendered post-Fordist. Simply put, it wishes to ask "What is the ideology of technology today?" With the new constellation of power between states and markets, and the emergence of a new technological paradigm, what does the discourse on technology legitimizes today and how does it do it?

The paper contends that with the shift to post-Fordism and the neoliberal state, and concurrent with the processes of marketization and disorganization of the new capitalism, there has also been transformations in the legitimation discourse of technology. The discourse on network technology, or the digital discourse, offers a framework where the tenets of neoliberalims are given what Robins and Webster (1999) call a 'technologistic' translation. That is, they are articulated as inevitable and benevolent realities that stem from a technological form, rather than a political and ideological project. These neoliberal tenets are hence depoliticized in the digital discourse. This is a case of 'technology as ideology' in the Habemasian sense par excellence. Only now it works as a discourse which legitimizes the neoliberal condition and the insulation of the market from external intervention, while in the past technology legitimized the exact opposite: the role of the state in managing the capitalist market and providing a protective shield to individuals from the market. Therefore, the digital discourse has become an important interpretive framework through which neoliberalism is neutralized and legitimized.

Let me illustrate the articulation of neoliberal tenets in the digital discourse through an analysis of two key issues in both the digital discourse and neoliberal theory: "spontaneous order" and "chaos". These two axial concepts largely correspond and account for the processes of marketization and disorganization. As case studies, I use New Rules for the New Economy: 10 Radical Strategies for a Connected World (1998), a book by Kevin Kelly, former editor of Wired magazine, and the writings of Frierdrich Hayek, the most notable neoliberal theoretician.

Spontaneous Order and Market Rationality

'Spontaneous order' is arguably the single most important theoretical concept in neoliberal theory (Sally 1998; Petsoulas 2001). Neoliberalism argues that, perhaps contrary to our intuition, order is not necessarily a result of a conscious, planned design, but can spring spontaneously. The epitome of all spontaneous social orders is the free market. There is no directing hand designing the market, but order nevertheless comes about through the interaction of independent units. Each of these units follows its own selfish and narrow rationale, and adheres to its own interests. But in the aggregate, this multiplicity of selfish and disparate actions results in an overall order, which is socially rational and benevolent. Spontaneous order, and more specifically markets, is superior to any human-planned order. It is universally rational and beneficial; an a-political mechanism. It is also a self-regulating mechanism. In fact, attempts to regulate or plan parts of the market are likely to interfere with its self-regulating, spontaneous mechanisms and cause more damage than help. It is therefore strongly advised that markets be insulated from the interference of planned and centralized orders, such as states or trade-unions.

The central arguments of neoliberal theory regarding markets as spontaneous order are paralleled almost one-to-one in the digital discourse treatment of networks. And Hayek's advocacy of the superior rationality of a free market is very much akin to Kelly's advocacy for the superior rationality of the network. Both the genius of the market and

the revolutionary character of digital networks are anchored in the characteristics of 'spontaneous order'. Both in Kelly's notion of networks, and Hayek's notion of markets, rationality emerges out of irrationality. Rationality is both unintended and unforeseen; it is impossible to predict, much less design and direct. At the heart of both networks and markets, then, is not a conscious effort to design order according to plan, but simply the unforeseen outcome of the coordination of multiple and disparate actors.

In the digital discourse the central components of neoliberalism are digitized. Markets, and more generally social networks, are understood in terms of information and communication networks: dispersed and autonomous nodes, each of which is simple and short-sighted ('dumb chips'), but as they communicate with each other, they are able to bring about rational results in a decentralized manner. The similarities between the digital discourse and neoliberal theory show how the former not only reiterates the latter, but "upgrades" it (to use a digital metaphor) so that the neoliberal worldview seems to be naturally flowing from the 'objective' reality of information technology.

Let's take the case of the status of individual nodes vis-à-vis the network. In the digital discourse individual nodes are perceived to be inherently inferior in rationality and smartness, compared with the network. It is only through the decentralized, self-regulated interaction of these 'dumb nodes' within a network that rationality can emerge. In the digital discourse, then, spontaneous order is inextricably linked with the inferior position of nodes vis-à-vis the network. In other words, the claim regarding a new rationality of technological and social networks is predicated on the relatively inferior rationality of individual nodes. For example, Kevin Kelly notes that "dumb chips"—simple processors designed to perform very limited computational tasks—are becoming much more popular than the more sophisticated computer chips (Kelly 1998:10-11). In contrast to computer chips, which are stand-alone, self-sufficient units (such as the Central Processing Units within PCs), dump chips only make sense within a network. Each of these chips is "dumb", but as we "connect these billion nodes, one by one" (Kelly 1998:12), these small, not so intelligent machines become something else; they gain, according to Kelly, the qualities of "smartness" (Kelly 1998:14) and rationality (Kelly 1998: 16).

What is significant for Kelly about such a network is that its high level of rationality is brought about not by any single super-computer, which governs the network like an omniscient eye in the sky, or a Big Brother. Instead, this rationality is self-regulated; it is brought about by the mere interlinking of dumb chips, or nodes into a web. Intelligence, knowledge, and economic rationality, according to Kelly, reside not in any individual node but only in the network, and come about only through the new technological ability of nodes to come together in a collective rational action, that is, to "swarm". Order and rationality, then, are brought about by the interlinking of simple, irrational nodes. This type of order, he says, emerges in any system which employs network architecture—biological, technological, economic, cultural, and social. And so Kelly is able to extrapolate from the technological level to other realms; for example, intelligence and rationality: "when connected into a swarm, small thoughts become smart" (Kelly 1998:12). The interconnection of many small, simple-minded parts results in a qualitative leap—so that "small" becomes not simply big but "smart".

It is important to make the inference of what Kelly is suggesting, especially as it pertains to the status of the individual, be it a node in a technological network, or an individual in society. If consciousness (as well as smartness and rationality) is the result of the cooperation of dumb neurons (as well as dumb chips, or nodes), the corollary is that reflexivity, or the ability to apply rationality to rationality, resides only in the network, not in any single node. None of these small nodes can comprehend the complexity of the network's rationality. Kelly sums up this lesson by maintaining: "no one is as smart as everyone" (Kelly 1998:13). This inability of any one node to comprehend the complexity of the web, and the lack of agency capable of reflexivity is fundamental also to explaining actors in markets, and the futile attempt of any agency (particularly governments) to comprehend markets, let alone control them.

But how does this rationality come about? According to Kelly, the rationality of networks is governed by two rules: "Dumb parts, properly connected into a swarm, yield smart results" (Kelly 1998:13); and "The surest way to smartness is through massive dumbness" (Kelly 1998:14). Put together, these rules suggest that the network is the best mechanism to produce rationality. Moreover, it suggests that superior rationality is solely the product of networks. Smartness and rationality is achieved not by improving on the performance of individual nodes, but simply by connecting them to each other. Sophistication and progress is created by very limited, short-sighted, and unreflexive agents. Rationality, in conclusion, involves two elements: dumb nodes, and the mechanism which connects them and self-regulates their action. The internet, and other network technology, serves not simply as the quintessential metaphor for this, but indeed as the material basis for the execution of such rationality. And so with

information technology, this rationality is finally materialized, figuratively and actually.

The various names used to describe this new form of network architecture and network rationality are very telling. "Distributed power" [1], "smart mobs" [2], "spontaneous order" [3], "hidden order" [4], all play on a similar linguistic device: an oxymoron. These duos tie together the irrational (fuzzy, undirected) with the rational (instrumental, purposive, focused). In all of them a 'bad' thing is rendered 'good' by the power of network technology, and more generally the architecture of the network. Power's coerciveness and oppressiveness is curbed by being distributed—democratically, in a way which flattens and diminishes the very force of 'power'; the threatening mob—a bundle of thoughtless individuals homogenized and manipulated by a 'mass society'—becomes smart and thoughtful; and order, that which we were led to believe requires centralization and control lest it devolves into entropy, is achieved spontaneously. This teasing use of oxymorons defies our intuitive notions of rationality. With network technology, these idioms suggest, we are entering a new level of rationality, which is superior to the old one both in process (which is rendered more democratic and collaborative) and in result (which becomes more instrumental and efficient). And this type of superior rationality, as suggested by the duos, is inextricably tied to a new architecture of organization; rationality and network go hand in hand. These duos also do something else. They help imagine a notion of a society comprised of individuals, a notion of social dynamics that are reducible to the unrestrained actions of free individuals. And they suggest that the coordination of these individuals into a rational society comes about without any central, overt mechanism, but one which is "hidden" and "spontaneous". Network technology provides technological space for this leap from the irrational to the rational to take place.

Like the digital discourse, neoliberal theory is also concerned with explaining how market rationality emerges from what might be seen as haphazard, disorganized, individualistic, ungoverned, and conflictual actions. In neoliberal theory, spontaneous order is the means by which individual 'micromotives' lead to 'macrobehavior' (Sally 1998:1), and "private vices" become "public benefits" in Mandeville's words (Petsoulas 2001, chap. 3). According to Hayek, spontaneous order does the trick by providing the best tool for the allocation of knowledge; it is the best solution for individuals' epistemic limitation: "The competitive market is by a long shot the best available device to coordinate existing (fragmented, dispersed and tacit) knowledge ... in order to cater for material wants" (Sally 1998:19). In a famous passage from The Wealth of Nations, Adam Smith too grapples with the quantum leap from unreflexive, 'dumb' micromotives to a rational, beneficent macrobehavior. "...every individual necessarily labours to render the annual revenue of the society as great as he can. He generally, indeed, neither intends to promote the public interest, nor knows how much he is promoting it". His actions are directed towards increasing "his own security", and "his own gain", but he is "led by an invisible hand to promote an end which was no part of his intention" (Smith 1994:485).

That the nodes comprising the network—be it computer chips, workers in a company, companies in the economy, or individuals in the marketplace—are dumb, unreflexive, and short-sighted relative to the network is not an empirical statement, nor is it meant to be derogatory. Rather, it is a cornerstone of both the digital and neoliberal worldviews. In the digital discourse, it is premised on a techno-scientific discovery of the operation of nodes in information networks. In neoliberalism, it is premised on the limited capacity of individuals: individuals can never have all the necessary market knowledge at their fingertips, since they are "partially and perpetually ignorant" about markets (Sally 1998:19). The crucial difference between the digital discourse and the neoliberal theory, then, is the depth in which their respective arguments are laid: while in neoliberal thought these are anchored in abstract constructs such as 'the market', or 'constitutional ignorance', in the digital discourse these arguments are welded into the 'materiality' of information technology, such as 'dumb chips' and network architecture.

Both in the digital discourse and neoliberal theory the constitution of the individual as the central and sole unit of social operation is paramount. Both put premium on the independence and liberty of each node in the network (or each individual in the market). But there is also an interesting evolution in the analysis of the interrelation between individual liberty and spontaneous order from classical liberalism, through neoliberalism, and finally to digitalism. In the classical liberalism of Adam Smith, John Stuart Mill, and David Hume individual liberty in the marketplace is seen as a natural, unconditional right, a 'natural liberty'; it is assumed to be a virtue on its own merit (Ashford and Davies 1991:170-3; Greenwald 1994). This is a moralistic legitimation for a free market.

Neoliberal theory withers away with this moral component. It turns the argument on its head and sees individual liberty as a prerequisite for the successful operation of the market. For the spontaneous order that is the market to occur, individual liberty must prevail. For Hayek, the argument for liberalism is based on a social theory rather than moral premises. As Hayek puts it, liberalism "derives from the discovery of a self-generating or spontaneous order

in social affairs..." (Hayek 1967: 162, cited in Kley 1994:1, [italics mine]). This is a scientific legitimation for a free market.

The digital discourse builds on the scientific argumentation of neoliberalism, but it also transforms the argument for individual liberty into a technologistic legitimation. Whereas individuals are reconceived as nodes within a technological network, and whereas these nodes must be atomized, flexible, and adaptable to network fluctuations, individuals must be free in order for spontaneous order to occur. Hence, the argument for the liberty of individuals in the context of free markets is asserted thrice: first, on moral grounds, then as a scientific discovery, and finally, as a technological reality.

Chaos and Adaptability

Let me now move to another parallel between the digital discourse and neoliberal theory concerning chaos. The notion of chaos is central to neoliberal understanding of markets. Here, again, we should note the transformation from the neoclassical to neoliberal, and finally digital discourse, in accounting for the realities of markets (that is, as ideologies of markets). A crucial distinction between Adam Smith's notion of the Invisible Hand and Hayek's notion of Spontaneous Order is their teleology. For Smith, the Invisible Hand brings harmony and homeostasis; markets incline towards equilibrium. For Hayek, the natural state of the economy is disharmony. Markets are "always in disequilibrium" (Ashford and Davies 1991:170-3) and in "flux" (Sally 1998:20), fostering "restless individuals" to engage in a perpetual "discovery procedure" (Ashford and Davies 1991:170-3).

In the digital discourse as well the network economy is inherently chaotic. According to Kelly, the "link[ing of] the distributed bottom" (Kelly 1998:14) in the economic sphere makes the network economy a system so complex that it yields nonlinear, unexpected, incalculable results. With the advent of information networks the economy becomes both less predictable and more volatile and chaotic. The new economic rationality, mechanically emerging from the nature of technological networks, is presented in the digital discourse as a mirror image of the instrumental rationality which was the backbone of the modern economy. Industrial economic rationality, most succinctly grasped by Weber at the beginning of the 20th century, entails calculability, control, and predictability. The new digital rationality shows precisely the counter symptoms: unpredictability and incalculability. Kelly explains the fluctuating, unstable, turbulent new economy as inherent to the nature of networks, by using insights from biological systems:

> As networks have permeated our world, the economy has come to resemble an ecology of organisms, interlinked and coevolving, constantly in flux, deeply tangled, ever expending at its edges. As we know from recent ecological studies, no balance exists in nature; rather, as evolution proceeds, there is perpetual disruption as new species displace old, as natural biomes shift in their markup, and as organisms and environments transform each other (Kelly 1998:108 [italics mine]).

Kelly maintains that with the emergence of technologically-enabled networks as the central axis of social activity, the economy has come to resemble nature: both are evolving progressively, and are in perpetual imbalance. In fact, Kelly ties together those two notions—chaos and progress—to account for the new economy. Using an evolutionary framework, Kelly proposes that economic progress comes about through constant flux and disruption. These are not byproducts, or side-effects of economic rationality and growth, but the motor thereof. "Harmony in nature", Kelly asserts, "is fleeting" (Kelly 1998:108), and so it is in the new network economy: "Companies come and go quickly, careers are patchworks of vocations, industries are indefinite groupings of fluctuating firms" (Kelly 1998:108). Kelly's critique is directed not at the new reality but at the outdated language used to describe and explain it. To treat careers and businesses as stable, according to Kelly's view, reflects an imposition of an anachronistic framework (linearity, stability, predictability, harmony) of a bygone industrial era on the new digital reality. The new economy is a network economy, and "Networks are immensely turbulent and uncertain" (Kelly 1998:111). Chaos, then, is not a disruption of an otherwise stable network; rather, it is its core characteristic. It becomes the sine qua non of the economic environment, to which economic actors need to adapt.

In the same vein Kelly addresses the increasingly chaotic and unstable working arrangements that characterize the network economy. For Kelly, the meaning of a trend whereby full-time, long-term careers within organizations are substituted by an increasingly unstable and chaotic employment environment (grasped by Castells' notion of 'flexitimers' [Castells 1996] and Senett's 'corrosion of character' [Senett 1998]) is interpreted through the notions of flexibility and adaptability. He illustrates this trend with the example of the entertainment industry, where these

arrangements have been commonplace for years. Part-timers, subcontractors, outsourced workers, freelancers, Kelly says—all "convene as one financial organization for the duration of the movie project, and then when the movie is done, the company disperses" (Kelly 1998:111). 'And the workers?' one might ask. According to Kelly "after the [movie] gets slotted to video, everybody just vanishes" (1998:111). In what sounds like a utopia of employers in the flexible economy, once workers do what needs to be done for the 'ad-hoc' project—they just vanish. Flexibility, in this case, entails workers as atomized, individualized nodes, who are required to adapt to the dictates of a network economy.

This economic instability and uncertainty, he says, is here to stay. In contrast to "change", "Flux" is not a road to stability but a permanent reality. It is a constant state of "destruction and genesis. Flux topples the incumbent and creates a platform for more innovation and birth. This dynamic state might be thought of as 'compounded rebirth'. And its genesis hovers on the edge of chaos" (Kelly 1998:109). But flux is not simply a new reality to be accustomed to, an inconvenient 'bad' we must now adapt to alongside the 'goods'; instead, it is something to be cheerful about. Flux should not be tempered with or mitigated. If anything, it should be encouraged. Thus, for example, instead of lamenting the loss of job security in the new economy, Kelly suggests we simply revoke our perception of what jobs are, "rather than considering jobs as a fixed sum to be protected and augmented [...] the state should focus on encouraging economic churning—on continually recreating the state's economy" (Kelly 1998:109). Taking its cue from nature again, Kelly reports what ecologists, familiar with the notion of constant flux, have learned: "The sustained vitality of a complex network requires that the net keeps provoking itself out of balance" (Kelly 1998:110). Rather than attempting to work towards harmony and balance, we should encourage and provoke conditions of flux and chaos in the economy. The network economy, he says, thrives on its own destruction, leading him to assert that the goal of networks is "to sustain a perpetual disequilibrium" (Kelly 1998:110) rather than fight it. He wraps up this point with the Stalinist-sounding slogan: "constant innovation is perpetual disruption" (Kelly 1998:110).

The digital discourse quite meticulously constructs a technologistic argument that explains why a network economy is inherently chaotic and in flux, and demands flexibility on the part of nodes. But even if one accepts this contention another question remains to be answered: Why should we accept and even encourage such flux if it leads to a constant state of uncertainty, and even "hovers on the edge of chaos" (Kelly 1998:109)? Why, in other words, shouldn't we want to control and mitigate it?

The answer, according to Kelly, is that this chaos is at the heart of the most important factor of economic growth in contemporary society: technological innovation. Chaos is both a breeding ground for technological innovation and the product of the acceleration of this process. It is a precondition for technological innovation; "Innovation", says Kelly, "is the productive and desirable moment between ordinary and insignificant change on the one hand, and a change too radical to be implemented on the other hand"; it is located on the borderline between "the rigid death of planned order and the degeneration of chaos" (Kelly 1998:113). To foster technological innovation, the motor of economic growth in the network society, we need to willingly occupy the space at the edge of planning and order, we need to embrace the network. As Kelly puts it, "The ideal environment for cultivating the unknown is to nurture the supreme agility and nimbleness of networks" (Kelly 1998). In order to foster innovation we need to have an environment favorable of change with as little paralyzing rules as possible. Rather than wanting to mitigate flux and chaos, we need to accept that "the price of progressive change in maximum doses is a dangerous (and thrilling) ride to the edge of disruption" (Kelly 1998: 114). Hence, technological innovation, the new dynamo of economic and indeed human progress, makes the network economy inherently chaotic. Chaos and progress are intricately tied.

As in Freud's joke of the borrowed kettle, Kelly too suggests flux, chaos, and churning, along with their corollary social effects of instability and unpredictability, should not be opposed or mitigated for three reasons: it cannot be done (flux in the network economy is inevitable; a transfer of a natural phenomenon into the social realm through information technology), it is better not to do it (flux is benevolent, yielding good results for everyone); and it is dangerous to do it (will result in knocking the system out of its self-regulated imbalance and creating devastating consequences). For these three, not necessarily compatible reasons, economic flux should be (respectively) dully accepted, enthusiastically celebrated and encouraged, and not tempered with.

Kelly expects (in the dual sense of 'prediction' and 'prescription') the network economy to be much more turbulent than what the industrial economy has been. But the stability and predictability of the latter was not simply (at least not only) the product of the different nature of these economies, as implied by Kelly, but precisely a product of the political and social barriers put forth by governments on markets. Stability, the curbing of flux and chaos, was exactly what governments tried to achieve through the construction of social democracies. The welfare state, the

New Deal, Keynesian policies, Corporatism, embedded liberalism—all were varied attempts to reduce the instability associated with laissez faire economics, and provide at least minimal protection to individuals against unpredictable markets. It is exactly in this context that Kelly makes a revealing statement regarding the underlying political project entailed in the construction of new economy, saying: "In a poetic sense, the prime goal of the new economy is to undo—company by company, industry by industry—the industrial economy" (Kelly 1998:112). With flux and chaos being naturalized and technologized in the digital discourse, and hence accepted and encouraged, it is exactly the (poetic) undoing of the political constraints put on markets and the layer of social arrangements, constructed throughout the 20th century in order to insulate individuals from an unforgiving, unpredictable, and irrational (in the broader sense of substantive rationality) market that Kelly is calling for and legitimizes.

Both the digital discourse and neoliberal theory expect spontaneous order to be in perpetual flux. And both recommend the same recipes to cope with that: for the individual—adaptation through flexibility; for states—acceptance through laissez faire policies. Both worldviews therefore share an avid advocacy for the insulation of markets from democratic political processes. As we have seen above, in the digital discourse it is information networks which render the operation of markets more rational. Or more precisely: the rationality predicated on the spontaneous order that emerges from the decentralized coordination of disparate nodes is finally materialized and reaches its full potential with the digitization of these procedures. This rationality is technological (i.e. universal and a-political). Not necessarily for the same underlying reasons, neoliberal theory too makes a case for the insulation of markets from political interference.

The insulation of markets from politics in neoliberal theory is premised on two arguments: that planned order is inferior to spontaneous order, and that political intervention hurts the mechanism of self-regulation. Hence, according to neoliberal theory, spontaneous order, specifically the market, is inherently a-political in two distinct meaning of the term. First, given the complexity of variables and knowledge entailed in the construction of markets, it cannot be subjected to political processes; its complexity is so immense as to make the realm of politics ill suited to handle it. And second, markets are a-political since it is assumed that their spontaneous emergence renders them cleansed of particularistic interests. They are seen as neutral tool which perform a disinterested function.

This is the crux of neoliberal conservatism. Rationality is already embedded in social institutions (of the 'spontaneous order' type). Institutions and morals, such as private property, private law, money, competition, are "the result of human action, but not the execution of any human design"; they are "unintended by-products ... of human action" (Sally 1998:22). If we try to introduce planned order we soon find out that compared to the merits of competitive markets,

> Central planning, and ... government intervention, are much inferior in allocating goods and services. Governments lack access to and control of requisite information in order to plan or guide markets, and what little information they marshal is coordinated in a centralised and cumbersome, not to say ham-fisted, manner (Sally 1998:19-20).

Hayek, therefore, advises us that "as individuals we should bow to forces and obey principles which we cannot hope fully to understand, yet on which the advance and even the preservation of civilization depend" (Hayek 1979, cited in Petsoulas, 2001:4). The social is not and should not be a product of conscious and purposeful construction. Society and culture do change, but by an evolutionary process, not by conscious, rational, and deliberate attempts. "We cannot redesign", Hayek says, "but only further evolve what we do not fully comprehend" (Hayek, 1982, cited in Petsoulas, 2001: 4-5). Hence, all that humans can do is act in the most immediate, bottom-up, unreflexive, untheoretical fashion as atomized nodes in the network. The resemblance of these neoliberal tenets to the digitalistic representation of the economy is again uncanny. The digital discourse too centers on the chaotic nature of network economy, and the delimitation of 'political' action mostly to adaptation and flexibility on the part of individuals, and laissez faire policies on the part of society as a whole.

To sum up, according to Kevin Kelly, the interweaving of network technology with the market transforms markets in two fundamental ways. At all levels, from organizations, through industries, to the global economy, markets have become decentralized, dehierarchized, and flexible. The reconstitution of markets in accordance with the architecture of networks has rendered them more conducive to spontaneous order. Market order no longer has to be planned a-priori by conscious decision, and implemented top-down; instead it is shown to increasingly emerge bottom-up, from the spontaneous actions of dumb nodes. In turn, spontaneous order does away with the need for most forms of regulation and planning. Moreover, while network markets require less planning, intervention, and governing coordination, they nevertheless yield more rational results. Spontaneous order, then, is predicated on, and

in turn furthers, a new balance of power between individuals and society: a network market empowers individuals at the expense of social regulation through the state.

But the top-down management—of the private company or the national economy—does not only become unnecessary, it also becomes virtually unfeasible because network markets are also more chaotic. This is the second fundamental transformation entailed by the rise of the network market. Market rationality does not simply increase quantitatively, but changes qualitatively, featuring more flux, unpredictability, acceleration, and perpetual change and instability. This new economic reality requires individual actors, or nodes in the network, to react to the ever-changing market environment with flexibility and adaptability.

Network Technology as Ideology

The rhetorical affinity of neoliberalism as a market ideology with contemporary discourse on technology has been well documented before (see, for example: Barbrook and Cameron 1996; Best and Kellner 2000; Borsook 2000; Frank 2000; Aune 2001; Dean 2002; Gere 2002; Mosco 2004; Wajcman, 2004; Harvey 2005; Turner 2006). In One Nation Under God, Thomas Frank (2000) identifies the discourse on information technology as one of the key factors in popularizing market ideology. Books, such as Walter Wriston's The Twilight of Sovereignty, and George Gilder's Microcosm made the argument that information technology made the restrained form of capitalism (i.e., Social Democracy) obsolete, and a return to 19th century-style laissez faire inevitable (Frank 2000:54-5). Information technology came to be "The most powerful symbolic weapon in the arsenal of market populism" (Frank 2000:57). Frank concludes: "... since the moment the Internet was noticed by the mainstream media in 1995, it has filled a single and exclusive position in political economy: a sort of cosmic affirmation of the principles of market populism" (2000:79). As another author puts it, the discourse on information technology played a decisive role in Selling the Free Market (Aune 2001, chap. 7). during the 1980s and 1990s. Moreover, Frank points out the transposition of market enthusiasm into a technological language. No longer was this enthusiasm bluntly 'ideological' but it became technical, "...now the ideology seemed to emerge as a natural consequence of the technology being discussed rather than from the random floating anger of betrayed patriots" (Frank 2000:79-80).

In the same vein, Barbrook and Cameron (1996) christen the conflation of information technology and market ideology the "Californians Ideology". In this techno-political vision, they say, the convergence of information and communication technologies is seen as leading to "the apotheosis of the market—an electronic exchange within which everybody can become a free trader" (Barbrook and Cameron 1996 [emphases in original]). According to this vision, network technology embodies an ideal of the free market (Robins and Webster 1999:67). The Californian ideology presents not only a new vision for society, but a new vision of what society is. Rather than seeing society in terms of structures and institutions it sees information society as a network of free-floating individuals, who meet in the market place in order to trade and exchange ideas. According to the Californian Ideology, information technologies inherently "empower the individual, enhance personal freedom and radically reduce the power of the nation-state" (Barbrook and Cameron 1996). The fact that these outcomes are inherent to the technology makes any intervention of regulatory bodies (most notability, governments) an anachronism, which is doomed to fail.

What these analyses share in common is a perception of the digital discourse as an ideology in the Marxist sense: an ideational construction that conceals material reality. Such approach is also articulated in the work of Best and Kellner (2000) who criticize Kelly's analysis of contemporary society for ignoring the realities of capitalism that still prevail. They limit their discussion largely to refuting Kelly's arguments about the network economy by upholding the centrality of capitalism in shaping contemporary society. The ideological thrust of Kelly's discourse, according to Best and Kellner, is anchored in the biological framework he is using in order to provide a social analysis. Kelly, they contend, collapses the dividing lines between biology and society, and transplant the new model of complexity theory from the natural world to the social world. They reject this unproblematic extrapolation of complexity theory from nature to society, and see this blurring between nature, technology, and society as mystifying and depoliticizing the restructuring of capitalism along neoliberal lines by resorting to a language of inevitability.

Such analysis, then, presents the digital discourse as a concealment of the new realities of capitalism. The thrust of the analysis offered in this paper is different inasmuch it situates the digital discourse on the network market in its historical context and interprets it within the analytical framework of legitimation discourse. According to this analysis it is not so much that the vector of capitalism is externalized from the digital discourse; instead, the realities

of the new capitalism are very much internalized within the discourse, but they are masked and given technological clothing. Put differently, the digital discourse both articulates and legitimizes the transformations of capitalism.

Somers and Block (2005) use the term "ideational embeddedness" to account for the relations between an ideology of market fundamentalism and policies that have direct economic and social effects; market practices are embedded within a broader set of ideas and ideologies, which, they say after Bourdieu, have the power to create what they purport to describe (Somers and Block 2005). In the same vein, I see the digital discourse as providing the ideational embeddedness for the new realities of capitalism, and its new spirit.

The Inversion of the Habermasian Framework

The welfare state of the post-World War II period, up until the 1970s, took the role of mitigating market failures and contradictions, as well as the possibly harmful personal effects of the market by intervening and managing the economy. This, in turn, insulated the market from any substantial political critique: social order was legitimized by a discourse which rendered economic problems technical, rather than substantial or political. The 'political' discussion that followed was therefore limited to technical questions. Now, in a historical turn of events the ideology of technology in contemporary times no longer serves as a legitimation for political power to technically manage the capitalist economy. Instead, technology now serves as a legitimation for political power to take a step back from the capitalist economy. With the rise of neoliberalism as the economic dogma of contemporary society, and as the state withdraws from the economy, market legitimation has now returned to what Habermas identifies as the old model of market legitimation: classical political economy, based on the internal workings of the market; but with a technologistic twist.

In this respect the digital discourse is crucial. It offers a renewed confidence in the market as a superior medium of economic and social life, based on its improvements by technological means. The reason for the state to recede, and for the market to dominate, this legitimation goes, is due to the materialization and perfection of the workings of the market by technological means. With the digital discourse market legitimation rests entirely on technology. Contemporary ideology of technology legitimizes not the intervention of the state in the economy but instead its withdrawal; not the external managing of the market, but the need of politics to let the market regulate itself. The goals have changed, but the depoliticizing ramifications of 'technology as ideology' that Habermas was concerned about still persist.

The weaving of the neoliberal notions of "spontaneous order" and "chaos" into information and communication technology, their complete integration into the medium where the 'social' now takes place, reasserts what for the good part of the 20th century has been rigorously criticized: the superiority of the market—frictionless, unhindered, and most importantly insulated from any political intervention—as a medium for social relations. In this respect, the digitalistic discourse has the same ideological thrust as the economistic discourse of neoliberalism, as succinctly identified by Duggen (2003):

> The most successful ruse of neoliberal dominance ... is the definition of economic policy as primarily a matter of neutral, technical expertise. This expertise is then presented as separate from politics and culture, and not properly subject to specifically politically accountability or cultural critique (Duggen 2003:xiv).

In the past, capitalism was more susceptible to critique. Such critique (most notably, that of Marx) was aimed at the political economy that underlies market legitimation, from neoclassical economics to neoliberal theory. Now, however, through recourse to a technologistic framework, the digital discourse offers the rhetorical means by which, at one and the same time, neoliberal tenets are upheld and its critique bypassed. As Habermas points out, the technologistic worldview might seem "less ideological" than previous ideologies, "For it does not have the opaque force of a delusion that only transfigures the implementation of interests" (Habermas 1970:111). But ideologies are not delusions. The strength of ideologies comes not from them being a veil on reality but a particular uncovering thereof. Vis-à-vis neoliberal theory, in the context of a technologically-saturated society, where more and more of social life is weaved into information technology, the digital discourse, as an ideology of technology, is all the more 'truer', making itself all the more ready for affirmation by technological reality; a 'self-evident truth', as Habermas would have it.

Habermas therefore concludes that the technologistic consciousness is also more ideological than previous ideologies inasmuch as it is more transparent and pervasive. Because this ideology is integrated to such extent in the operation of system, because it is materialized in praxis, it is that much more resistant to critique. It is no longer, as ideologies before it, "based in the same way on the causality of dissociated symbols and unconscious motives, which generates both false consciousness and the power of reflection to which the critique of ideology is indebted. It is less vulnerable to reflection, because it is no longer only ideology" (Habermas 1970:111). It is in light of this insight that this paper has tried to make the ideology of technology a little more vulnerable to reflection.

Kelly's discourse on the network market represents a fundamental shift in the political culture of contemporary capitalist societies, from social democracy to neoliberalism, or from embedded markets to market fundamentalism (Somers and Block 2005). It is part of the new spirit and discourse of capitalism that sees contemporary society as an overcoming (or transcendence) of the pitfall (or contradictions) of Fordist society (see Boltanski and Chiapello 2005). More specifically, in the digital discourse the network market is seen as a higher evolutionary stage compared with its industrial-age counterpart, and as a transcendence of the shortcomings of embedded capitalism.

The comparison of the digital discourse to the neoliberal discourse sought to go beyond the overt ideological affinity of these two discourses (pro-market, anti-government), and explore the rationalizations and theorizations which underlie these assertions. What we have seen is that the digital discourse not simply reiterates neoliberal tenets, but translates many of the neoliberal tropes into a digitalistic language, rendering the deeper theoretical claims of neoliberalism digital. In that sense, the distinctions between the two discourses are no less revealing than the similarities. This is perhaps epitomized in the notions of 'markets' and 'networks', as they are used in the digital and neoliberal theory, respectively. The market is an abstract construct, a scientific discovery, a 'social fact', in Durkheim's terminology. Networks (as they are construed by the digital discourse), on the other hand stem from, and are anchored in a material reality: the web of information and communication technology spanning virtually all geographical and social space. In that manner, a-priori intellectual assumptions put forth by neoliberal theory are rectified by posteriori technological evidence in the digital discourse.

The significance of the digital discourse lies not in its overt embrace of free market ideology (as Barbrook and Cameron [1996], for example, point out); but—to use a somewhat harsh rhetoric—precisely in its rejection of ideology tout court. The digital discourse strives to be precisely what a free market ideology, like neoliberalism, might have a hard time to be—not an ideology at all. Unlike neoliberalism, it is based not on intellectual ideas, cognitive constructs, and abstract metaphors and models, and it has no overt political trajectory. Instead, it builds its foundations on the seemingly technical, materialist, and instrumental reading of technology. And it is this 'technological hermeneutics' which gives it a gloss of an impartial, a-political rendering of reality.

As an analytical framework to explain and legitimize the realities of free market the digital discourse therefore seems superior to neoliberal theory, because it anchors much of the neoliberal arguments in material tools. If rationality is a product of the disparate and selfish wants of individuals; if it emerges spontaneously, and is self-regulated; if it requires a mechanism of communication—then the market, once being digitized, once being incorporated into cyberspace, promises to be the most sophisticated market in the history of humanity. In that sense, the digital discourse not simply reiterates but also supersedes the neoliberal arguments regarding the operation of markets, by embodying it within network technology. In the digital discourse, economic rationality is redefined as emanating solely from the operation of networks, and so it is inextricably bounded with network technology.

It is therefore no surprise that neoliberals are enthusiastic about network technology no less than technological enthusiasts seem excited about neoliberal ideas (Gere 2002:140-1; Harvey 2005:3-4, 157-9). In neoliberal theory the market is seen metaphorically as a 'machine' for the coordination of the interests and actions of free individuals in a rational benevolent fashion. In the digital discourse, and with the introduction of network technology, this machine is no longer merely a metaphor; it is a reality, assumed to reaffirm and fortify neoliberal claims. And so, Thomas Friedman—who perhaps more than anyone in the public sphere epitomizes the synergy of network technology and neoliberalism—can write "...The Internet offers the closest thing to a perfectly competitive market in the world today..." (Friedman 2000:81). And Milton Friedman, the most prominent figure in neoliberal thinking in America recently made similar assertions, noting that "The internet ... moves us closer to 'perfect information' on markets ... The internet is the most effective instrument we have for globalization" (Friedman 2006). By percolating through a technologistic framework, the postulates of neoliberalism are added a gloss of reality, by which they are vindicated and affirmed not only intellectually, but technologically as well.

Acknowledgments

For useful comments on earlier versions of this paper I would like to thank Ben Agger, Paolo Carpignano, Yoav Mehozay, and an anonymous reader. Special thanks to Uri Ram and Efrat Eizenberg.

Endnotes

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