Chapter Three
Babylon is Fallen

Introduction

If you watch the mainstream cable news networks and Sunday morning interview shows, you've no doubt seen, many times, talking head commentators rolling their eyes at any proposal for reform that's too radically different from the existing institutional structure of society. That much of a departure would be completely unrealistic, they imply, because it is an imposition on all of the common sense people who prefer things the way they are, and because “the way things are” is a natural state of affairs that came about by being recognized, through a sort of tacit referendum of society at large, as self-evidently the most efficient way of doing things.

But in fact the present system is, itself, radical. The corporate economy was created in a few short decades as a radical departure from what prevailed before. And it did not come about by natural evolutionary means, or "just happen"; it's not just "the way things are." It was imposed from above (as we saw in Chapter One) by a conscious, deliberate, *radical* social engineering effort, with virtually no meaningful democratic input from below. The state-imposed corporatization of the economy in the late nineteenth century could be compared in scope and severity, without much exaggeration, to Stalin's collectivization of agriculture and the first Five Year Plan. Although the Period is sometimes called the Gilded Age or the Great Barbecue, John Curl prefers to call it the Great Betrayal.[1] In the Tilden-Hayes dispute, Republicans ended military Reconstruction and handed the southern states back over to the planter class and segregation, in return for a free hand in imposing corporate rule at the national level.

All social systems include social reproduction apparatuses, whose purpose is to produce a populace schooled to accept "the way things are" as the only possible world, and the only natural and inevitable way of doing things. So the present system, once established, included a cultural, ideological and educational apparatus (lower and higher education, the media, etc.) run by people with exactly the same ideology and the same managerial class background as those running the large corporations and government agencies.

All proposals for “reform” within the present system are designed to be implemented within existing institutional structures, by the sorts of people currently running the dominant institutions. Anything that fundamentally weakened or altered the present pattern of corporate-state domination, or required eliminating the power of the elites running the dominant institutions, would be—by definition—“too radical.”

The system of power, consequently, can only be undermined by forces beyond its control. Fortunately, it faces a mutually reinforcing and snowballing series of terminal crises which render it unsustainable.

The present system's enculturation apparatus functions automatically to present it as inevitable, and to suppress any consciousness that “other worlds are possible.” But not only are other worlds possible; under the conditions of Sloanist mass production described in Chapter Two, the terminal crises of the present system mean that *this* world, increasingly, is becoming *impossible*.

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1 John Curl, *For All the People: Uncovering the Hidden History of Cooperation, Cooperative Movements, and Communalism in America* (Oakland, CA: PM Press, 2009).

A. Resumption of the Crisis of Overaccumulation

State capitalism, with industry organized along mass-production lines, has a chronic tendency to overaccumulation: in other words, its overbuilt plant and equipment are unable to dispose of their full output when running at capacity, and the system tends to generate a surplus that only worsens the crisis over time.

Paul Baran and Paul Sweezy, founders of the neo-Marxist *Monthly Review*, described the Great Depression as "the normal outcome of the workings of the American economic system." It was the culmination of the "stagnationist tendencies inherent in monopoly capitalism," and far from being a deviation from economic normality was "the realization in practice of the theoretical norm toward which the system is always tending."[1]

Fortunately for corporate capitalism, World War Two postponed the crises for a generation or so, by blowing up most of the plant and equipment in the world outside the United States. William Waddell and Norman Bodek, in *The Rebirth of American Industry*, describe the wide-open field left for the American mass-production model:

> General Motors, Ford, General Electric and the rest converted to war production and were kept busy, if not prosperous, for the next four years. When the war ended, they had vast, fully functional factories filled with machine tools. They also had plenty of cash, or at least a pocket full of government IOUs. More important, they also had the entire world market to themselves. The other emerging automobile makers, electric product innovators, consumer product companies, and machine tool builders of Europe and Asia were in ruins.[2]

Harry Magdoff and Paul Sweezy of the *Monthly Review* group described it, in similar terms, as a virtual rebirth of American capitalism.

> The Great Depression was ended, not by a spontaneous resurgence of the accumulation process but by the Second World War. And... the war itself brought about vast changes in almost every aspect of the world capitalist system. Much capital was destroyed; the diversion of production to wartime needs left a huge backlog of unfilled consumer demand; both producers and consumers were able to pay off debts and build up unprecedented reserves of cash and borrowing power; important new industries (e.g., jet planes) grew from military technologies; drastically changed power relations between and among victorious and defeated nations gave rise to new patterns of trade and capital flows. In a real sense, world capitalism was reborn on new foundations and entered a period in important respects similar to that of its early childhood.[3]

Even so, the normal tendency was toward stagnation even during the early postwar "Golden Age." In the period after WWII, "actual GNP has equaled or exceeded potential" in only ten years. And eight of those were during the Korean and Vietnam conflicts. The only two peacetime years in which the economy reached its potential, 1956 and 1973, had notably worse levels of employment than 1929.[4]

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1 Paul Baran and Paul Sweezy, *Monopoly Capital: An Essay in the American Economic and Social Order* (New York: Monthly Review Press, 1966) p. 240.
2 William Waddell and Norman Bodek, *Rebirth of American Industry: A Study of Lean Management* (Vancouver, WA: PCS Press, 2005) p. 94.
3 Harry Magdoff and Paul M. Sweezy, "Capitalism and the Distribution of Income and Wealth," Magdoff and Sweezy, *The Irreversible Crisis: Five Essays by Harry Magdoff and Paul M. Sweezy* (New York: Monthly Review Press, 1988), p. 38
4 John F. Walker and Harold G. Vattner, "Stagnation—Performance and Policy: A Comparison of the Depression Decade with 1973-1974," *Journal of Post Keynesian Economics*, Summer 1986, in Magdoff and Sweezy, "Stagnation and the Financial Explosion," Magdoff and Sweezy, *The Irreversible Crisis*, pp. 12-13.

The tendency postwar, as before it, was for the productive capacity of the economy to far outstrip the ability of normal consumption to absorb. The difference:

> Whereas in the earlier period this tendency worked itself out in a catastrophic collapse of production—during the 1930s as a whole, unemployment and utilization of productive capacity averaged 18 percent and 63 percent respectively—in the postwar period economic energies, instead of lying dormant, have increasingly been channelled into a variety of wasteful, parasitic, and generally unproductive uses.... [T]he point to be emphasized here is that far from having eliminated the stagnationist tendencies inherent in today's mature monopoly capitalist economy, this process has forced these tendencies to take on new forms and disguises.[1]

The destruction of capital in World War II postponed the crisis of overaccumulation until around 1970, when the industrial capacity of Europe and Japan had been rebuilt. By that time, according to Piore and Sabel, American domestic markets for industrial goods had become saturated.[2]

This saturation was simply a resumption of the normal process described by Marx in the third volume of *Capital*, which World War II had only temporarily set back.

Leaving aside more recent issues of technological development tunneling through the cost floor and reducing the capital outlays needed for manufacturing by one or more orders of magnitude (about which more below), it is still natural for investment opportunities to decline in mature capitalism. According to Magdoff and Sweezy, domestic opportunities for the extensive expansion of capitalist investment were increasingly scarce as the domestic noncapitalist environment shrunk in relative size and the service sectors were increasingly industrialized. And quantitative needs for investment in producer goods decline steadily as industrialization proceeds:

> ...[T]he demand for investment capital to build up Department I, a factor that bulked large in the later nineteenth and early twentieth centuries, is of relatively minor importance today in the advanced capitalist countries. They all have highly developed capital-goods industries which, even in prosperous times, normally operate with a comfortable margin of excess capacity. The upkeep and modernization of these industries—and also of course of existing industries in Department II (consumer goods)—is provided for by depreciation reserves and generates no new net demand for investment capital.[3]

> ...[T]he need for new investment, relative to the size of the system as a whole, had steadily declined and has now reached an historic low. The reproduction of the system is largely self-financing (through depreciation reserves), and existing industries are for the most part operating at low levels of capacity utilization. New industries, on the other hand, are not of the heavy capital-using type and generate a relatively minor demand for additional capital investment.[4]

"Upkeep and modernization" of existing industry is funded almost entirely by retained earnings, and those retained earnings are in fact often far in excess of investment needs. Corporate management generally finances capital expansion as much as possible through retained earnings, and resorts to bond issues or new stock only as a last resort. And as Martin Hellwig points out, this does not by any means necessarily operate as a constraint on management resources, or force management to ration investment. If anything, the glut of retained earnings is more likely to leave management at a loss as to

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1 Magdoff and Sweezy, "Stagnation and the Financial Explosion," p. 13.
2 Piore and Sabel, *The Second Industrial Divide*, p. 184.
3 Magdoff and Sweezy, "Capitalism and the Distribution of Income and Wealth," p. 31.
4 Ibid., p. 39.

what to spend it all on.[1]

And as we saw in Chapter Two, the traditional investment model, in oligopoly industry, is tacit collusion between cartelized firms in spooning out investment in new capital assets only as fast as the old ones wear out . Schumpeter's "creative destruction," in a free market, would lead to the constant scrapping and replacement of functional capital assets. But cartelized firms are freed from competitive pressure to scrap obsolete machinery and replace it before it wears out. What's more, as we shall see in the next chapter, in the economically uncertain conditions of the past thirty years, established industry has increasingly shifted new investment from expensive product-specific machinery in the mass-production core to far less expensive general-purpose craft machinery in flexible manufacturing supplier networks.

If anything, Magdoff's and Sweezy's remarks on the reduced capital outlays required by new industries were radically understated, given developments of the subsequent twenty years. Newly emerging forms of manufacturing, as we shall see in Chapter Five, require *far* less capital to undertake production. The desktop revolution has reduced the capital outlays required for music, publishing and software by two orders of magnitude; and the newest open-source designs for computerized machine tools are being produced by hardware hackers for a few hundred dollars.

The result, according to Magdoff and Sweezy, is that "a developed capitalist system such as that of the United States today has the capacity to meet the needs of reproduction and consumption with little or no net investment."[2] From the early days of the industrial revolution, when "the demand for investment capital seemed virtually unlimited, [and] the supply was narrowly restricted," mature capitalism has evolved to the point where the opposite is true: the overabundant supply of investment capital is confronted by a dearth of investment opportunities.[3]

Marx, in the third volume of *Capital*, outlined a series of tendencies that might absorb surplus investment capital and thereby offset the general trend toward a falling direct rate of profit in mature capitalism. And these offsetting tendencies theorized by Marx coincide to a large extent with the expedients actually adopted under developed capitalism. According to Walden Bello the capitalist state, after the resumed crisis of the 1970s, attempted to address the resumed crisis of overproduction with a long series of expedients—including a combination of neoliberal restructuring, globalization, the creation of the tech sector, the housing bubble and intensified suburbanization, and the expansion of the FIRE economy (finance, insurance and real estate)—as successive attempts to soak up surplus capital.[4]

Unfortunately for the state capitalists, the neoliberal model based on offshoring capital has reached its limit; China itself has become saturated with industrial capital.[5] The export-oriented industrialization model in Asia is hitting the walls of both Peak Oil and capital saturation.

The choice of export-oriented industrialization reflected a deliberate calculation by Asian governments, based on the realization that

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1 Martin Hellwig, "On the Economics and Politics of Corporate Finance and Corporate Control," in Xavier Vives, ed., *Corporate Governance: Theoretical and Empirical Perspectives* (Cambridge: Cambridge University Press, 2000), pp. 114-115.
2 Magdoff and Sweezy, "Capitalism and the Distribution of Income and Wealth," p. 32.
3 Ibid., p. 33.
4 Walden Bello, "A Primer on Wall Street Meltdown," *MR Zine*, October 3, 2008 <http://mrzine.monthlyreview.org/bello031008.html>.
5 Ibid.

> import substitution industrialization could continue only if domestic purchasing power were increased via significant redistribution of income and wealth, and this was simply out of the question for the region's elites. Export markets, especially the relatively open US market, appeared to be a painless substitute.

Today, however, as "goods pile up in wharves from Bangkok to Shanghai, and workers are laid off in record numbers, people in East Asia are beginning to realize they aren't only experiencing an economic downturn but living through the end of an era." The clear lesson is that the export-oriented industrial model is extremely vulnerable to both increased shipping costs and decreases in Western purchasing power—a lesson that has "banished all talk of decoupling" a growing Asian economy from the stagnating West. Asia's manufacturing sector is "linked to debt-financed, middle-class spending in the United States, which has collapsed."[1] The Asian export economy, as a result, has fallen through the floor.

> Worldwide, industrial production has ground to a halt. Goods are stacking up, but nobody's buying; the *Washington Post* reports that "the world is suddenly awash in almost everything: flat-panel televisions, bulldozers, Barbie dolls, strip malls, Burberry stores." A Hong Kong-based shipping broker told T*he Telegraph* that his firm had "seen trade activity fall off a cliff. Asia-Europe is an unmitigated disaster." *The Economist* noted that one can now ship a container from China to Europe for free—you only need to pick up the fuel and handling costs—but half-empty freighters are the norm along the world's busiest shipping routes. Global airfreight dropped by almost a quarter in December alone; Giovanni Bisignani, who heads a shipping industry trade group, called the "free fall" in global cargo "unprecedented and shocking."[2]

If genuine decoupling is to take place, it will require a reversal of the strategic assessments and policy decisions which led to the choice of export-oriented industrialization over import substitution in the first place. It will require, in particular, rethinking the unthinkable: putting the issues of local income distribution and purchasing power back on the table. That means, in concrete terms, that Asian manufacturers currently engaged in the Nike ("outsource everything") model of distributed manufacturing must treat the Western corporate headquarters as nodes to be bypassed, repudiate their branding and other "intellectual property," and reorient production to the domestic market with prices that reflect something like the actual cost of production without brand-name markup. It also requires that Asian governments cease their modern-day reenactment of the "primitive accumulation" of eighteenth century Britain, restore genuine village control of communal lands, and otherwise end their obsessive focus on attracting foreign investment through policies that suppress the bargaining power of labor and drive people into the factories like wild beasts. In other words, those Nike sneakers piling up on the wharves need to be marketed to the local population minus the swoosh, at an 80% markdown. At the same time, agriculture needs to shift from cash crop production for the urban and export market to a primary focus on subsistence production and production for the domestic market.

Bello points out that 75% of China's manufacturers were already complaining of excess capacity and demand stagnation, even before the bubble of debt-fueled demand collapsed. Interestingly, he also notes that the Chinese government is trying to bolster rural demand as an alternative to collapsing demand in the export market, although he's quite skeptical of the policy's prospects for success. The efforts to promote rural purchasing power, he argues, are too little and too late—merely chipping at the edges of a 25-year policy of promoting export-oriented industrialization "on the back of the peasant." China's initial steps toward market liberalization in the 1970s were centered on the prosperity of peasant smallholders. In the '80s, the policy shifted toward subsidizing industry for the export market,

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1 Walden Bello, "Asia: The Coming Fury," *Asia Times Online*, February 11, 2009 <http://www.atimes.com/atimes/Asian_Economy/KB11Dk01.html>.

2 Joshua Holland, "The Spectacular, Sudden Crash of the Global Economy," *Alternet*, February 24, 2009 <http://www.alternet.org/module/printversion/128412/the_spectacular%2C_sudden_crash_of_the_global_economy/>.

with a large increase in the rural tax burden and as many as three hundred million peasants evicted from their land in favor of industrial use. But any hope at all for China's industrial economy depends on restoring the prosperity of the agricultural sector as a domestic source of demand.[1]

Suburbanization, thanks to Peak Oil and the collapse of the housing bubble, has also ceased to be a viable outlet for surplus capital.

The stagnation of the economy from the 1970s on—every decade since the postwar peak of economic growth in the 1960s has seen lower average rates of annual growth in real GDP compared to the previous decade, right up to the flat growth of the present decade—was associated with a long-term trend in which demand was stimulated mainly by asset bubbles.[2] In 1988, a year after the 1987 stock market crash and on the eve of the penultimate asset bubble (the dotcom bubble of the '90s), Sweezy and Magdoff summed up the previous course of financialization in language that actually seems understated in light of subsequent asset bubbles.

> Among the forces counteracting the tendency to stagnation, none has been more important or less understood by economic analysts than the growth, beginning in the 1960s and rapidly gaining momentum after the severe recession of the mid-1970s, of the country's debt structure... at a pace far exceeding the sluggish expansion of the underlying "real" economy. The result has been the emergence of an unprecedentedly huge and fragile financial superstructure subject to stresses and strains that increasingly threaten the stability of the economy as a whole.

Between the 1960s and 1987, the debt-to-GNP ratio rose from 1.5 to 2.25.[3]

But it was only after the collapse of the tech bubble that financialization—the use of derivatives and securitization of debt as surplus capital sponges to soak up investment capital for which no outlet existed in productive industry—really came into its own. As Joshua Holland noted, in most recessions the financial sector contracted along with the rest of the economy; but after the 2000 tech bust it just kept growing, ballooning up to ten percent of the economy.[4] We're seeing now how that worked out.

Financialization was a way of dealing with a surplus of productive capacity, whose output the population lacked sufficient purchasing power to absorb—a problem exacerbated by the fact that almost all increases in productivity had gone to increasing the wealth of the upper class. Financialization enabled the upper class to lend its increased wealth to the rest of the population, at interest, so they could buy the surplus output.

Conventional analysts and editorialists frequently suggest, to the point of cliche, that the shift from productive investment to speculation in the finance sector is the main cause of our economic ills. But as Magdoff and Sweezy point out, it's the other way around. The expansion of investment capital against the backdrop of a sluggish economy led to a shift in investment to financial assets, given the lack of demand for further investment in productive capital assets.

It should be obvious that capitalists will not invest in additional capacity when their factories and mines are

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1 Walden Bello, "Can China Save the World from Depression?" *Counterpunch*, May 27, 2009 <http://www.counterpunch.org/bello05272009.html>.

2 John Bellamy Foster and Fred Magdoff, "Financial Implosion and Stagnation: Back to the Real Economy," *Monthly Review*, December 2008 <http://www.monthlyreview.org/081201foster-magdoff.php>.

3 Magdoff and Sweezy, "Stagnation and the Financial Explosion," pp. 13-14.

4 Joshua Holland, "Let the Banks Fail: Why a Few of the Financial Giants Should Crash," *Alternet*, December 15, 2008 <http://www.alternet.org/workplace/112166/let_the_banks_fail%3A_why_a_few_of_the_financial_giants_should_crash_/>.

already able to produce more than the market can absorb. Excess capacity emerged in one industry after another long before the extraordinary surge of speculation and finance in the 1970s, and this was true not only in the United States but throughout the advanced capitalist world. The shift in emphasis from industrial to pecuniary pursuits is equally international in scope.[1]

In any case the housing bubble collapsed, government is unable to reinflate housing and other asset values even with trillion-dollar taxpayer bailouts, and an alarming portion of the population is no longer able to service the debts accumulated in "good times." Not only are there no inflated asset values to borrow against to fuel demand, but many former participants in the Ditech spending spree are now becoming unemployed or homeless in the Great Deleveraging.[2]

Besides, the problem with debt-inflated consumer demand was that there was barely enough demand to keep the wheels running and absorb the full product of overbuilt industry even when everyone maxed out their credit cards and tapped into their home equity to replace everything they owned every five years. And we'll never see that kind of demand again. So there's no getting around the fact that a major portion of existing plant and equipment will be rust in a few years.

State capitalism seems to be running out of safety valves. Barry Eichengreen and Kevin O'Rourke suggest that, given the scale of the decline in industrial output and global trade, the term "Great Recession" may well be over-optimistic. Graphing the rate of collapse in global industrial output and trade from spring 2008 to spring 2009, they found the current rate of decline has actually been steeper than that of 1929-1930. From appearances in early 2009, it was "a Depression-sized event," with the world "currently undergoing an economic shock every bit as big as the Great Depression shock of 1929-30."[3]

Left-Keynesian Paul Krugman speculated that the economy narrowly escaped another Great Depression in early 2009.

> A few months ago the possibility of falling into the abyss seemed all too real. The financial panic of late 2008 was as severe, in some ways, as the banking panic of the early 1930s, and for a while key economic indicators — world trade, world industrial production, even stock prices — were falling as fast as or faster than they did in 1929-30.
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> But in the 1930s the trend lines just kept heading down. This time, the plunge appears to be ending after just one terrible year.
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> So what saved us from a full replay of the Great Depression? The answer, almost surely, lies in the very different role played by government.
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> Probably the most important aspect of the government's role in this crisis isn't what it has done, but what it hasn't done: unlike the private sector, the federal government hasn't slashed spending as its income has fallen.[4]

This is not to suggest that the Keynesian state is a desirable model. Rather, it is made necessary by

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1 Magdoff and Sweezy, "Stagnation and the Financial Explosion," p. 23.
2 Charles Hugh Smith, "Globalization and China: Neoliberal Capitalism's Last 'Fix'," *Of Two Minds*, June 29, 2009 <http://www.oftwominds.com/blogjune09/globalization06-09.html>.
3 Barry Eichengreen and Kevin H. O'Rourke, "A Tale of Two Depressions," *VoxEU.Org*, June 4, 2009 <http://www.voxeu.org/index.php?q=node/3421>.
4 Paul Krugman, "Averting the Worst," *New York Times*, August 9, 2009 <http://www.nytimes.com/2009/08/10/opinion/10krugman.html>.

state capitalism. But make no mistake: so long as we have state capitalism, with state promotion of overaccumulation and the maldistribution of purchasing power that results from privilege, state intervention to manage aggregate demand is necessary to avert depression. Given state capitalism, we have only two alternatives: 1) eliminate the privileges and subsidies to overaccumulation that result in chronic crisis tendencies; or 2) resort to Keynesian stabilizing measures. Frankly, I can't work up much enthusiasm for the mobs of teabaggers demanding an end to the Keynesian stabilizing measures, when those mobs reflect an astroturf organizing effort funded by the very people who benefit from the privileges and subsidies that contribute to chronic crisis tendencies.

And we should bear in mind that it's far from clear the worst has, in fact, been averted. Karl Denninger argues that the main reason GDP fell only 1% in the second quarter of 2009, as opposed to 6% in the first, was increased government spending. As he points out, the fall of investment slowed in the second quarter; but given that it was already cut almost in half, there wasn't much further it *could* fall. Exports fell "only" 7% and imports 15.1%; but considering they had already fallen 29.9% and 36.4%, respectively, in the first quarter, this simply means that exports and imports have "collapsed." Consumer spending fell in the second quarter more than in the first, with a second quarter increase in the rate of "savings" (or rather, of paying down debt). If the rate of collapse is slowing, it's because there's so much less distance to fall. Denninger's take: "The recession is not 'easing', it is DEEPENING."[1]

The reduction in global trade is especially severe, considering that the very modest uptick in summer 2009 still left the shortfall from baseline levels far lower in the Great Recession than it was at a comparable point in the Great Depression. As of late summer 2009, world trade was some 20% below the pre-recession baseline, compared to only 8% the same number of months into the Depression. Bear in mind that the collapse of world trade in the Depression is widely regarded as the catastrophic result of the Smoot-Hawley tariff, and to have been a major exacerbating factor in the continuing progression of the economic decline in the early '30s. The current reduction in volume of world trade, far greater than that of the Great Depression, has occurred *without* Smoot-Hawley![2]

Stoneleigh, a former writer for *The Oil Drum Canada*, argues that the asset deflation has barely begun:

> Banks hold extremely large amounts of illiquid 'assets' which are currently marked-to-make-believe. So long as large-scale price discovery events can be avoided, this fiction can continue. Unfortunately, a large-scale loss of confidence is exactly the kind of circumstance that is likely to result in a fire-sale of distressed assets....
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> A large-scale mark-to-market event of banks illiquid 'assets' would reprice entire asset classes across the board, probably at pennies on the dollar. This would amount to a very rapid destruction of staggering amounts of putative value. This is the essence of deflation....

The currently celebrated "green shoots," which she calls "gangrenous," are comparable to the suckers' stock market rally of 1930.[3]

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1 Karl Denninger, "GDP: Uuuuggghhhh – UPDATED," *The Market Ticker*, July 31, 2009 <http://market-ticker.denninger.net/archives/1276-GDP-Uuuuggghhhh.html>.
2 Cassander, "It's Hard Being a Bear (Part Three): Good Economic History," *Steve Keen's Debtwatch*, September 5, 2009 <http://www.debtdeflation.com/blogs/2009/09/05/it%E2%80%99s-hard-being-a-bear-part-three-good-economic-history/>.
3 "October 30 2009: An interview with Stoneleigh - The case for deflation," *The Automatic Earth* <http://theautomaticearth.blogspot.com/2009/10/october-30-2009-interview-with.html>.

In any case, if Keynesianism is *necessary* for the survival of state capitalism, we're reaching a point at which it is no longer *sufficient*. If pessimists like Denninger are wrong, and Keynesian policies have indeed turned the free fall into a slow motion collapse, the fact remains that they are insufficient to restore "normalcy"—because normalcy is no longer an option. Keynesianism was sufficient during the postwar "Consensus Capitalism" period only because of the worldwide destruction of plant and equipment in WWII, which postponed the crisis of overaccumulation for a generation or so.

Bello makes the very good point that Keynesianism is not a long-term solution to the present economic difficulties because it ceased to be a solution the *first* time around.

> The Keynesian-inspired activist capitalist state that emerged in the post-World War II period seemed, for a time, to surmount the crisis of overproduction with its regime of relatively high wages and technocratic management of capital-labor relations. However, with the addition of massive new capacity from Japan, Germany, and the newly industrializing countries in the 1960s and 1970s, its ability to do this began to falter. The resulting stagflation — the coincidence of stagnation and inflation — swept throughout the industrialized world in the late 1970s.[1]

Conventional left-Keynesian economists are at a loss to imagine some basis on which a post-bubble economy can ever be reestablished with anything like current levels of output and employment. This is especially unfortunate, given the focus of both the Bush and Obama administrations' banking policies on restoring asset prices to something approaching their pre-collapse value, and the focus of their economic policies on at least partially reinflating the bubble economy as a source of purchasing power, so that—as James Kunstler so eloquently puts it—

> the US public could resume a revolving credit way-of-life within an economy dedicated to building more suburban houses and selling all the needed accessories from supersized "family" cars to cappuccino machines. This would keep everyone employed at the jobs they were qualified for—finish carpenters, realtors, pool installers, mortgage brokers, advertising account executives, Williams-Sonoma product demonstrators, showroom sales agents, doctors of liposuction, and so on.[2]

Both the Paulson and Geithner TARP plans involve the same kind of Hamiltonian skullduggery: borrowing money, to be repaid by taxpayers with interest, to purchase bad assets from banks at something much closer to face value than current market value in order to increase the liquidity of banks to the point that they might lend money back to the public—should they deign to do so—at interest. Or as Michael Hudson put it, TARP "aims at putting in place enough new bank-lending capacity to start inflating prices on credit all over again."[3]

Charles Hugh Smith describes the parallel between Japan's "Lost Decade" and the current economic crisis:

> Ushinawareta junen is the Japanese phrase for "Lost Decade." The term describes the 1991-2000 no-growth decade in which Japan attempted to defeat debt-liquidation deflationary forces with massive government borrowing and spending, and a concurrent bailout of "zombie" (insolvent) banks with government funds.

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1 Walden Bello, "Keynes: A Man for This Season?" *Share the World's Resources*, July 9, 2009 <http://www.stwr.org/globalization/keynes-a-man-for-this-season.html>.

2 James Kunstler, "Note: Hope = Truth," *Clusterfuck Nation*, April 20, 2009 <http://jameshowardkunstler.typepad.com/clusterfuck_nation/2009/04/note-hope-truth.html>.

3 Michael Hudson, "What Wall Street Wants," *Counterpunch*, February 11, 2009 <http://www.counterpunch.org/hudson02112009.html> (see also expanded version, "Obama's Awful Financial Recovery Plan," *Counterpunch*, February 12, 2009 <http://www.counterpunch.org/hudson02122009.html>).

> The central bank's reflation failed. By any measure, the Lost Decade is now the Lost Decades. Japan's economy enjoyed a brief spurt from America's real estate bubble and China's need for Japanese factory equipment and machine tools. But now that those two sources of demand have ebbed, Japan is returning to its deflationary malaise....
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> ...It seems the key parallel is this: an asset bubble inflated with highly leveraged debt pops and the value of real estate and stocks declines. But the high levels of debt taken on to speculate in stocks and housing remain.
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> Rather than let the private-sector which accepted the high risks and took the enormous profits take staggering losses and writedowns, the government and central bank shift the losses from the private sector to the public balance sheet via bailouts and outright purchases of toxic/impaired private debt.[1]

The problem is that pre-collapse levels of output can only be absorbed by debt-financed and bubble-inflated purchasing power, and that another bubble on the scale of the tech and real estate booms just ain't happening.

Keynesianism might be viable as a long-term strategy if deficit stimulus spending were merely a way of bridging the demand shortfall until consumer spending could be restored to normal levels, after which it would use tax revenues in good times to pay down the public debt. But if normal levels of consumer spending *won't* come back, it amounts to the U.S. government borrowing $2 trillion this year to shore up consumer spending *for this year*—with consumer spending falling back to Depression levels next year if *another* $2 trillion isn't spent. So capitalism might be sustainable, in terms of the demand shortfall taken in insolation—if the state is prepared to run a deficit of $2 trillion a year indefinitely. But there will never again be a tax base capable of paying for these outlays, because the implosion of production costs from digital production and small-scale manufacturing technology is destroying the tax base. What we call "normal" levels of demand are a thing of the past. As Paul Krugman points out, as of late fall 2009 stimulus spending is starting to run its course, with no sign of sufficient self-sustaining demand to support increased industrial production; the increasingly likely result is a double dip recession with Part Two in late 2010 or 2011.[2]

So the crisis of overaccumulation exacerbates the fiscal crisis of the state (about which more below).

It might be possible to sustain such spending on a permanent basis via something like the "Social Credit" proposals of Major Douglas some eighty years ago (simply creating the money out of thin air instead of borrowing it or funding it with taxes, and depositing so much additional purchasing power in every citizen's checking account each month). But that would undermine the basic logic of capitalism, removing the incentive to accept wage labor on the terms offered, and freeing millions of people to retire on a subsistence income from the state while participating in the non-monetized gift or peer economy. Even worse, it would create the economic basis for continuing subsidized waste and planned obsolescence until the ecosystem reached a breaking point—a state of affairs analogous to the possibility, contemplated with horror by theologians, that Adam and Eve in their fallen state might have attained immortality from the Tree of Life.

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1 Charles Hugh Smith, "Welcome to America's Lost Decade(s)," *Of Two Minds*, September 18, 2009 <http://charleshughsmith.blogspot.com/2009/09/welcome-to-americas-lost-decades.html>.
2 Paul Krugman, "Double dip warning," Paul Krugman Blog, *New York Times*, Dec. 1, 2009 <http://krugman.blogs.nytimes.com/2009/12/01/double-dip-warning/>.

Those who combine some degree of "green" sympathy with their Keynesianism have a hard time reconciling the fundamental contradiction involved in the two sides of modern "Progressivism." You can't have all the good Michael Moore stuff about full employment and lifetime job security, without the bad stuff about planned obsolescence and vulgar consumerism. Krugman is a good case in point:

> I'm fairly optimistic about 2010.
>
> But what comes after that? Right now everyone is talking about, say, two years of economic stimulus — which makes sense as a planning horizon. Too much of the economic commentary I've been reading seems to assume, however, that that's really all we'll need — that once a burst of deficit spending turns the economy around we can quickly go back to business as usual.
>
> In fact, however, things can't just go back to the way they were before the current crisis. And I hope the Obama people understand that.
>
> The prosperity of a few years ago, such as it was — profits were terrific, wages not so much — depended on a huge bubble in housing, which replaced an earlier huge bubble in stocks. And since the housing bubble isn't coming back, the spending that sustained the economy in the pre-crisis years isn't coming back either.
>
> To be more specific: the severe housing slump we're experiencing now will end eventually, but the immense Bush-era housing boom won't be repeated. Consumers will eventually regain some of their confidence, but they won't spend the way they did in 2005-2007, when many people were using their houses as ATMs, and the savings rate dropped nearly to zero.
>
> So what will support the economy if cautious consumers and humbled homebuilders aren't up to the job?[1]

(I would add that, whatever new standard of post-bubble "normalcy" prevails, in the age of Peak Oil and absent previous pathological levels of consumer credit, it's unlikely the U.S. will ever see a return to automobile sales of 18 million a year. If anything, the current output of ca. ten million cars is probably enormously inflated.)[2]

And Krugman himself, it seems, is not entirely immune to the delusion that a sufficient Keynesian stimulus will restore the levels of consumer demand associated with something like "normalcy."

Krugman first compares the longer duration and greater severity of depressions without countercyclical government policy to those with, and then cites Keynes as an authority in estimating the length of the current Great Recession without countercyclical stimulus spending: "a recession would have to go on until 'the shortage of capital through use, decay and obsolescence causes a sufficiently obvious scarcity to increase the marginal efficiency.'"[3]

But as he himself suggested in his earlier column, the post-stimulus economy may have much lower "normal" levels of demand than the pre-recession economy, in which case the only effect of the

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1 Paul Krugman, "Life Without Bubbles," *New York Times*, January 6, 2009 <http://www.nytimes.com/2008/12/22/opinion/22krugman.html?ref=opinion>.

2 Despite exuberance in the press over Cash for Clunkers, auto sales went flat—in fact reaching a low for the year—as soon as the program ended. Associated Press, "Retail sales fall after Cash for Clunkers ends," MSNBC, October 14, 2009 <http://www.msnbc.msn.com/id/33306465/ns/business-retail/>.

3 Paul Krugman, "Use, Delay, and Obsolescence," *The Conscience of a Liberal*, February 13, 2009 <http://krugman.blogs.nytimes.com/2009/02/13/use-delay-and-obsolescence/>.

stimulus will be to pump up artificial levels of demand so long as the money is still being spent. In that case, as John Robb argues, the economy will eventually have to settle into a new equilibrium with levels of demand set at much lower levels.

> The assumption is that new homes will eventually need to be built to accommodate population growth and new cars will be sold to replace old stock. However, what if there is a surge in multi-generational housing (there is) or people start to drive much less (they are) or keep their cars until they drop (most people I know are planning this). If that occurs, you have to revise the replacement level assumption to a far lower level than before the start of the downturn. What's that level? I suspect it is well below current sales levels, which means that there is much more downside movement possible.[1]

The truth of the matter is, the present economic crisis is not cyclical, but structural. There is excess industrial capacity that will be rust in a few years because we are entering a period of *permanently* low consumer demand and frugality. As Peter Kirwan at *Wired* puts it, the mainstream talking heads are mistaking for a cyclical downturn what is really "permanent structural change" and "industrial collapse."[2]

Both the bailout and stimulus policies, under the late Bush and Obama administrations, have amounted to standing in the path of these permanent structural changes and yelling "Stop!" The goal of U.S. economic policy is to prevent the deflation of asset bubbles, and restore sufficient demand to utilize the idle capacity of mass-production industry. But this only delays the inevitable structural changes that must take place, as Richard Florida points out:

> The bailouts and stimulus, while they may help at the margins, also pose an enormous opportunity costs [sic]. On the one hand, they impede necessary and long-deferred economic adjustments. The auto and auto-related industries suffer from massive over-capacity and must shrink. The housing bubble not only helped spur the financial crisis, it also produced an enormous mis-allocation of resources. Housing prices must come a lot further down before we can reset the economy—and consumer demand—for a new round of growth. The financial and banking sector grew massively bloated—in terms of employment, share of GDP and wages, as the detailed research of NYU's Thomas Phillipon has shown—and likewise have to come back to earth.[3]

The new frugality, to the extent that it entails more common-sense consumer behavior, threatens the prevailing Nike model of outsourcing production and charging a price consisting almost entirely of brand-name markup. A *Wall Street Journal* article cites a Ms. Ball: "After years of spending $17 on bottles of Matrix shampoo and conditioner, 28-year-old Ms. Ball recently bought $5 Pantene instead.... 'I don't know that you can even tell the difference.'" Procter & Gamble has been forced to scale back its prices considerably, and offer cheaper and less elaborate versions of many of its products. William Waddell comments:

> Guess what P&G—Ms. Ball and millions like her will not come back to your hollow brands once the economy comes back now that she knows the $5 stuff is exactly the same as the $17 stuff.[4]

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1 John Robb, "Below Replacement Level," *Global Guerrillas*, February 20, 2009 <http://globalguerrillas.typepad.com/johnrobb/2009/02/below-replacement-level.html>.
2 Peter Kirwan, "Bad News: What if the money's not coming back?" *Wired.Co.Uk*, August 7, 2009 <http://www.wired.co.uk/news/archive/2009-08/07/bad-news-what-if-the-money%27s-not-coming-back.aspx>.
3 Richard Florida, "Are Bailouts Saving the U.S. from a New Great Depression," *Creative Class*, March 18, 2009 <http://www.creativeclass.com/creative_class/2009/03/18/are-the-bailouts-saving-us-from-a-new-great-depression/>.
4 Ellen Byron, "Tide Turns 'Basic' for P&G in Slump," *WSJ* online, August 6, 2009 <http://online.wsj.com/article/SB124946926161107433.html>; in William Waddell, "But You Can't Fool All the People All the Time," *Evolving Excellence*, August 25, 2009 <http://www.evolvingexcellence.com/blog/2009/08/but-you-cant-foool-

A permanent, mass shift from brand-name goods to almost identical generic and store brand goods would destroy the basis of push-distribution capitalism. We already saw, in the previous chapter, quotes from advertising industry representatives stating in the most alarmist terms what would happen if their name brand goods had to engage in direct price competition like commodities. The min-revolt against brand-name goods during the downturn of the early '90s—the so-called "Marlboro Friday"—was a dress rehearsal for just such an eventuality.

> On April 2, 1993, advertising itself was called into question by the very brands the industry had been building, in some cases, for over two centuries. That day is known in marketing circles as "Marlboro Friday," and it refers to a sudden announcement from Philip Morris that it would slash the price of Marlboro cigarettes by 20 percent in an attempt to compete with bargain brands that were eating into its market. The pundits went nuts, announcing in frenzied unison that not only was Marlboro dead, all brand names were dead. The reasoning was that if a "prestige" brand like Marlboro, whose image had been carefully groomed, preened and enhanced with more than a billion advertising dollars, was desperate enough to compete with no-names, then clearly the whole concept of branding had lost its currency. The public had seen the advertising, and the public didn't care.... The implication that Americans were suddenly thinking for themselves en masse reverberated through Wall Street. The same day Philip Morris announced its price cut, stock prices nose-dived for all the household brands: Heinz, Quaker Oats, Coca-Cola, PepsiCo, Procter and Gamble and RJR Nabisco. Philip Morris's own stock took the worst beating.
>
> Bob Stanojev, national director of consumer products marketing for Ernst and Young, explained the logic behind Wall Street's panic: "If one or two powerhouse consumer products companies start to cut prices for good, there's going to be an avalanche. Welcome to the value generation.

As Klein went on to write, the Marlboro Man eventually recovered from his setback, and brand names didn't exactly become obsolete in the ensuing age of Nike and The Gap. But even if the panic was an "overstated instant consensus," it was nevertheless "not entirely without cause."

> The panic of Marlboro Friday was not a reaction to a single incident. Rather, it was the culmination of years of escalating anxiety in the face of some rather dramatic shifts in consumer habits that were seen to be eroding the market share of household-name brands, from Tide to Kraft. Bargain-conscious shoppers, hit hard by the recession, were starting to pay more attention to price than to the prestige bestowed on their products by the yuppie ad campaigns of the 1980s. The public was suffering from a bad case of what is known in the industry as "brand blindness."
>
> Study after study showed that baby boomers, blind to the alluring images of advertising and deaf to the empty promises of celebrity spokespersons, were breaking their lifelong brand loyalties and choosing to feed their families with private-label brands from the supermarket—claiming, heretically, that they couldn't tell the difference... It appeared to be a return to the proverbial shopkeeper dishing out generic goods from the barrel in a prebranded era.
>
> The bargain craze of the early nineties shook the name brands to their core. Suddenly it seemed smarter to put resources into price reductions and other incentives than into fabulously expensive ad campaigns. This ambivalence began to be reflected in the amounts companies were willing to pay for so-called brand-enhanced advertising. Then, in 1991, it happened: overall advertising spending actually went down by 5.5 percent for the top 100 brands. It was the first interruption in the steady increase of U.S. ad expenditures since a tiny dip of 0.6 percent in 1970, and the largest drop in four decades.
>
> It's not that top corporations weren't flogging their products, it's just that to attract those suddenly fickle customers, many decided to put their money into promotions such as giveaways, contests, in-store displays

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all-the-people-all-the-time.html>.

> and (like Marlboro) price reductions. In 1983, American brands spent 70 percent of their total marketing budgets on advertising, and 30 percent on these other forms of promotion. By 1993, the ratio had flipped: only 25 percent went to ads, with the remaining 75 percent going to promotions.[1]

And Ms. Ball, mentioned above, may prefigure a more permanent shift to the same sort of behavior in the longer and deeper Great Recession of the 21st century.

While Krugman lamely fiddles around with things like a reduction of the U.S. trade deficit as a possible solution to the demand shortfall, liberal blogger Matthew Yglesias has a more realistic idea of what a sustainable post-bubble economy might actually entail.

> I would say that part of the answer may well involve taking a larger share of our productivity gains as increased leisure rather than increased production and incomes.... A structural shift to less-work, less-output dynamic could be catastrophic if that means a structural shift to a very high rate of unemployment. But if it means a structural shift toward six-week vacations and fewer 60 hour weeks then that could be a good thing.[2]

Exactly. But a better way of stating it would be "a structural shift toward a less-work, less-output, less-planned-obsolescence, and less-embedded-rents-on-IP-and-ephemera dynamic, with no reduction in material standard of living. A structural dynamic toward working fewer hours to produce less stuff because it lasts longer instead of going to the landfill after a brief detour in our living rooms, would indeed be a good thing.

Michel Bauwens ventures a somewhat parallel analysis from a different perspective, that of Kondratiev's long-wave theory and neo-Marxist theories of the social structure of accumulation (particularly the idea of a new social structure of accumulation as necessary to resolve the crises of the previous structure[3]). According to Bauwens, 1929 was the sudden systemic shock of the last system, and from it emerged the present system, based on Fordist mass-production and the New Deal/organized labor social contract, the automobile, cheap fossil fuels—you know the drill. The system's golden age lasted from WWII to the early 1970s, when its own series of systemic shocks began: the oil embargo, the saturation of world industrial capital, and all the other systemic crises we're considering in this chapter. According to Bauwens, each long wave is characterized by a new energy source, a handful of technological innovations (what the neo-Marxists would call "epoch-making industries"), a new mode of financial system, and a new social contract. Especially interesting, each long wave presents "a new 'hyperproductive' way to 'exploit the territory,'" which parallels his analysis (which we will examine in later chapters) of the manorial economy as a path of intensive development when the slave economy reached its limits of expansion, and of netarchical capitalism as a way to extract value intensively when extensive addition of capital inputs is no longer feasible.

According to Bauwens, the emerging long wave will be characterized by renewable energy and green technology, crowdsourced credit and microlending, relocalized networked manufacturing, a version of small-scale organic agriculture that applies the latest findings of biological science, and a mode of economic organization centered on civil society and peer networks.[4]

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1 Naomi Klein, *No Logo* (New York: Picador, 2000, 2002), pp. 12-14.
2 Matthew Yglesias, "The Elusive Post-Bubble Economy," *Yglesias/ThinkProgress.Org*, December 22, 2008 <http://yglesias.thinkprogress.org/archives/2008/12/the_elusive_post_bubble_economy.php>.
3 David Gordon, "Stages of Accumulation and Long Economic Cycles," in Terence K. Hopkins and Immanuel Wallerstein, eds., *Processes of the World-System* (Beverly Hills, Calif.: Sage, 1980), pp. 9-45.
4 Michel Bauwens, "Conditions for the Next Long Wave," *P2P Foundation Blog*, May 28, 2009 <http://blog.p2pfoundation.net/conditions-for-the-next-long-wave/2009/05/28>.

However, to the extent that the capture of value through “intellectual property” is no longer feasible (see below), it seems unlikely that any such new paradigm can function on anything resembling the current corporate capitalist model.

It's a fairly safe bet we're in for a period of prolonged economic stagnation and decline, measured in conventional terms. The imploding capital outlays required for manufacturing, thanks to current technological developments, mean that the need for investment capital falls short of available investment funds by at least an order of magnitude. The increasing unenforcability of “intellectual property” means that attempts to put a floor under either mandated capital outlays, overhead, or commodity price, as solutions to the crisis, will fail. Established industry will essentially cut off all net new investment in capital equipment and begin a prolonged process of decay, with employment levels suffering accordingly.

Those who see this as leading to a sudden, catastrophic increase in technological unemployment are probably exaggerating the rate of progression of the crisis. What we're more likely to see is what Alan Greenspan called a Great Malaise, gradually intensifying over the next couple of decades. Given the toolkit of anti-deflationary measures available to the central bankers, he argued in 1980, the collapse of asset bubbles would never again be allowed to follow its natural course—a “cascading set of bankruptcies” leading to a chain reaction of debt deflation. The central banks, he continued, would “flood the world's economies with paper claims at the first sign of a problem,” so that a “full-fledged credit deflation” on the pattern of the early 1930s could not happen. And indeed, Sweezy and Magdoff argue, had the government not intervened following the stock market crash of 1987, it's quite likely the aftermath would have been a deflationary collapse like that of the Depression.

Greenspan's successor Ben “Helicopter” Bernanke, whose nickname comes from his stated willingness to airdrop cash to maintain liquidity, made good on such guarantees in the financial crisis of Fall 2008. The federal government also moved far more quickly than in the 1930s, as we saw above, to use deficit spending to make up a significant part of the demand shortfall.

The upshot of this is that the crisis of overaccumulation and underconsumption is likely to be reflected, not in a sudden deflationary catastrophe, but—in Greenspan's words—a Great Malaise.

> Thus in today's political and institutional environment, a replay of the Great Depression is the Great Malaise. It would not be a period of falling prices and double-digit unemployment, but rather an economy racked with inflation, excessive unemployment (8 to 9 percent), falling productivity, and little hope for a more benevolent future.[1]

That kind of stagnation is essentially what happened in the late '30s, after FDR succeeded in pulling the economy back from the cliff of full-scale Depression, but failed to restore anywhere near normal levels of output. From 1936 or so until the beginning of WWII, the economy seemed destined for long-term stagnation with unemployment fluctuating around 15%. In today's Great Malaise, likewise, we can expect long-term unemployment from 10% to 15%, and utilization of industrial capacity in the 60% range, with a simultaneous upward creeping of part-time work and underemployment, and the concealment of real unemployment levels as more people stop looking for work and drop from the unemployment rolls.

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1 Greenspan remarks from 1980, quoted by Magdoff and Sweezy, “The Great Malaise,” in Magdoff and Sweezy, *The Irreversible Crisis*, pp. 58-60.

Joshua Cooper Ramo notes that employment has fallen much more rapidly in the Great Recession than Okun's Law (which states the normal ratio of GDP decline to job losses) would have predicted. Instead of the 8.5% unemployment predicted by Okun's Law, we're at almost 10%.

> Something new and possibly strange seems to be happening in this recession. Something unpredicted by the experts. "I don't think," Summers told the Peterson Institute crowd — deviating again from his text — "that anyone fully understands this phenomenon." And that raises some worrying questions. Will creating jobs be that much slower too? Will double-digit unemployment persist even after we emerge from this recession? Has the idea of full employment rather suddenly become antiquated?...
>
> When compiling the "worst case" for stress-testing American banks last winter, policymakers figured the most chilling scenario for unemployment in 2009 was 8.9%—a figure we breezed past in May. From December 2007 to August 2009, the economy jettisoned nearly 7 million jobs, according to the Bureau of Labor Statistics. That's a 5% decrease in the total number of jobs, a drop that hasn't occurred since the end of World War II. The number of long-term unemployed, people who have been out of work for more than 27 weeks, was the highest since the BLS began recording the number in 1948....
>
> America now faces the direst employment landscape since the Depression. It's troubling not simply for its sheer scale but also because the labor market, shaped by globalization and technology and financial meltdown, may be fundamentally different from anything we've seen before. And if the result is that we're stuck with persistent 9%-to-11% unemployment for a while... we may be looking at a problem that will define the first term of Barack Obama's presidency.... The total number of nonfarm jobs in the U.S. economy is about the same now—roughly 131 million—as it was in 1999. And the Federal Reserve is predicting moderate growth at best. That means more than a decade without real employment expansion.[1]

To put things in perspective, the employment-to-population ratio—since its peak of 64.7% in 2000—has fallen to 58.8%.[2] That means the total share of the population which is employed has fallen by about a tenth over the past nine years. And the employment-to-population ratio is a statistic that's a lot harder to bullshit than the commonly used official unemployment figures. The severity of the latter is generally concealed by discouraged job-seekers dropping off the unemployment rolls; the official unemployment figure is consistently understated because of shrinkage of the job market, and counts only those who are still bothering to look for work. The reason unemployment only rose rose to 9.8% in September 2009, instead of 10%, is that 571,000 discouraged workers dropped out of the job market that month. Another statistic, the hours-worked index, has also displayed a record decline (8.6% from the prerecession peak, compared to only 5.8% in the 1980-82 recession).[3]

A much larger portion of total unemployed in this recession are long-term unemployed. 53% (or eight million) of the unemployed in August were not on temporary layoff, and of those five million had sought work unsuccessfully for six months or more—both record highs.[4] Although total unemployment levels as of November 2009 have yet to equal their previous postwar peak in 1983, the percentage of the population who have been seeking jobs for six months or more is now 2.3%—compared to only 1.6% in 1983.[5] The Bureau of Labor Statistics announced in January 2010 that the

1 Joshua Cooper Ramo, "Jobless in America: Is Double-Digit Unemployment Here to Stay?" *Time*, September 11, 2009 <http://www.time.com/time/printout/0,8816,1921439,00.html>.
2 Brad DeLong, "Another Bad Employment Report (I-Wish-We-Had-a-Ripcord-to-Pull Department)," *Grasping Reality with All Eight Tentacles*, October 2, 2009 <http://delong.typepad.com/sdj/2009/10/another-bad-employment-report-i-wish-we-had-a-ripcord-to-pull-department.html>.
3 Ibid.
4 "U.S. Suffering Permanent Destruction of Jobs," *Washington's Blog*, October 5, 2009 <http://www.washingtonsblog.com/2009/10/us-suffering-permanent-destruction-of.html>
5 "Long-Term Unemployment," *Economist's View*, November 9, 2009 <http://economistsview.typepad.com/economistsview/2009/10/longterm-unemployment.html>.

rate of long-term unemployment was the highest since 1948, when it began measuring it; those who had been out of work for six months or longer comprised 40% of all unemployed.[1]

And we face the likely prospect that the economy will continue to shed jobs even after the resumption of growth in GDP; in other words not just a "jobless recovery," but a recovery with job losses.[2] As J. Bradford DeLong points out, the economy is shedding jobs *despite* an increase in demand for domestically manufactured goods.

> Real spending on American-made products is rising at a rate of about 3.5% per year right now and has been since May.
>
> The point is that even though spending on American products is rising, employment in America is still falling.[3]

In such a period of stagnation, capital goods investment is likely to lag far behind even the demand for consumer goods; investment in plant and equipment, generally, tends to fall much lower than capacity utilization of consumer goods industry in economic downturns, and to be much slower rebounding in the recovery. In the 1930s, investment in plant and equipment was cut by 70% to 80%. Machine tool builders shut down production for prolonged periods, and depreciated industrial capital stock was not replaced for years. In 1939, despite consumer demand 12% over its peak in the 1920s, investment in plant and equipment was at less than 60% of the 1929 level.[4] Investment in plant and equipment only began to come back with heavy government Lend-Lease spending (the machinery industry expanded output 30% in 1940).[5] In the coming period, as we shall see below, we can expect a virtual freeze of investment in the old mass-production industrial core.

Charles Hugh Smith expects "a decades-long period of structural unemployment in which there will not be enough jobs for tens of millions of citizens": the employment rolls will gradually shrink from their present level of 137 million to 100 million or so, and then stagnate at that level indefinitely.[6] Economist Mark Zandi of Moody's Economy.com predicts "the unemployment rate will be permanently higher, or at least for the foreseeable future."[7] Of course, it's quite plausible that the harm will be mitigated to some extent by a greater shift to job-sharing, part-time work by all but one member of a household, or even a reduction of the standard work week to 32 hours.

The hope—*my* hope—is that these increasing levels of underemployment and unemployment will be offset by increased ease of meeting subsistence needs outside the official economy, by the imploding cost of goods manufactured in the informal sector, and by the rise of barter networks as the means of providing an increasing share of consumption needs by direct production for exchange between

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1 Ron Scherer, "Number of long-term unemployed hits highest rate since 1948," *Christian Science Monitor*, January 8, 2010 <http://www.csmonitor.com/USA/2010/0108/Number-of-long-term-unemployed-hits-highest-rate-since-1948>.
2 Quiddity, "Job-loss recovery," *uggabugga*, October 25, 2009 <http://uggabugga.blogspot.com/2009/10/job-loss-recovery-experts-see.html#comments>.
3 DeLong, "Jobless Recovery: Quiddity Misses the Point," *J. Bradford DeLong's Grasping Reality with All Eight Tentacles*, October 25, 2009 <http://delong.typepad.com/sdj/2009/10/jobless-recovery-quiddity-misses-the-point.html>.
4 Harry Magdoff and Paul Sweezy, *The End of Prosperity: The American Economy in the 1970s* (New York and London: Monthly Review Press, 1977), pp. 95, 120-121.
5 Ibid., p. 96.
6 Smith, "Unemployment: The Gathering Storm," *Of Two Minds*, September 26, 2009 <http://charleshughsmith.blogspot.com/2009/09/unemployment-gathering-storm.html>.
7 "Uh, oh, higher jobless rates could be the new normal," *New York Daily News*, October 23, 2009 <http://www.nydailynews.com/money/work_career/2009/10/19/2009-10-19_uh_oh_higher_jobless_rates_could_be_the_new_normal.html>.

producers in the informal sector. As larger and larger shares of total production disappear as sources of conventional wage employment, and cease to show up in the GDP figures, the number of hours it's necessary to work to meet needs outside the informal sector will also steadily decline, and the remaining levels of part-time employment for a majority of the population will be sufficient to maintain a positive real material standard of living.

B. Resource crises (Peak Oil)

In recent decades, the centerpiece of both the energy policy and a major part of the national security policy of the U.S. government has been to guarantee "cheap, safe and abundant energy" to the corporate economy. It was perhaps exemplified most forcefully in the Carter Doctrine of 1980: "An attempt by any outside force to gain control of the Persian Gulf region will be regarded as an assault on the vital interests of the United States of America, and such an assault will be repelled by any means necessary, including military force."[1]

This is no longer possible: the basic idea of Peak Oil is that the rate of extraction of petroleum has peaked, or is about to peak. On the downside of the peak, the supply of oil will gradually contract year by year. Although the total amount of oil reserves in the ground may be roughly comparable to those extracted to date, they will be poorer in quality, and more expensive in both dollar terms and energy to extract.

All the panaceas commonly put forth for Peak Oil—oil shale, tar sands, offshore drilling, algae—turn out to be pipe dreams. The issue isn't the absolute amount of oil in offshore reserves or tar sands, but the *cost* of extracting them and the maximum feasible *rate* of extraction. In terms of the net energy surplus left over after the energy cost of extraction (Energy Return on Energy Investment, or EROEI), all the "drill baby drill" gimmicks are far more costly—cost far more BTUs per net BTU of energy produced—than did petroleum in the "good old days." The maximum rate of extraction from all the newly discovered offshore oil bonanzas the press reports, and from unconventional sources like tar sands, doesn't begin to compensate for the daily output of old wells in places like the Persian Gulf that will go offline in the next few years. And the oil from such sources is far more costly to extract, with much less net energy surplus.[2]

The list of false panaceas includes coal, by the way. It's sometimes argued that Peak Coal is some time away, and that increased coal output (e.g. China's much-vaunted policy of building another coal-fired generator every week) will compensate for decreased oil output in the intermediate term. But estimates of coal reserves have been revised radically downward in the last two decades—by some 55%, as a matter of fact. In virtually every country where coal reserves have been reestimated since the 1990s, such a downward revision has recurred. Poland, the largest coal producer in the EU, had its reserve estimates downgraded by 50%, and Germany by 90%. UK reserve estimates were revised from 45 billion tons to 0.22 billion tons. And interestingly, the countries with some of the highest estimated coal reserves (e.g. China) are also the countries whose estimates are the oldest and most out of date. The most recent figures for China, for an estimated 55 years' reserves, date back all the way to 1992—and Chinese production since then has amounted to some 20% of those total reserves.

> The Energy Watch Group report gives projected production profiles showing that China is likely to experience peak coal production in the next 10-15 years, followed by a steep decline. It should also be noted

1 "Carter Doctrine," Wikipedia, accessed December 23, 2009 <http://en.wikipedia.org/wiki/Carter_Doctrine>.
2 Rob Hopkins, *The Transition Handbook: From Oil Dependency to Local Resilience* (Totnes: Green Books, 2008), p. 23.

> that these production profiles do not take into account uncontrolled coal fires which – according to satellite based estimates – add around 5-10% to regular consumption. Since China's production dwarfs that of any other country (being almost double that of the second largest producer, the USA) the global coal production peak will be heavily influenced by China's production profile.[1]

The Energy Watch Group's estimate for peak coal energy is 2025.[2] And even assuming increased coal output for another decade or more, Richard Heinberg forecasts total fossil fuel energy production peaking around 2010 or so.[3]

Peak Oil skeptics frequently argue that a price spike like the one in 2008 is caused, not by Peak Oil, but "instead" by some special circumstance like a specific supply disruption or speculative bubble. But that misses the point.

The very fact that supply has reached its peak, and that price is entirely determined by the amount of demand bidding for a fixed supply, means that the price of oil is governed by the same speculative boom-bust cycle Henry George observed in land. Given the prospect of a fixed supply of land or oil, the rational interest of the oil industry, like that of real estate speculators, will lead them to hold greater or lesser quantities off the market, or dump them on the market, based on their estimate of the future movement of price. Hence the inconvenient fact, during the "drill here drill now" fever of the McCain-Palin campaign, that the oil companies were already sitting on large offshore oil reserves that they were failing to develop in anticipation of higher prices.

> The oil companies already have access to some 34 billion barrels of offshore oil they haven't even developed yet, but ending the federal moratorium on offshore drilling would probably add only another 8 billion barrels (assuming California still blocks drilling off its coast). Who thinks adding under 100,000 barrels a day in supply sometime after 2020 -- some one-thousandth of total supply -- would be more than the proverbial drop in the ocean? Remember the Saudis couldn't stop prices from rising now by announcing that they will add 500,000 barrels of oil a day by the end of this year!
>
> Here is the key data from EIA:
>
> Look closely. As of 2003, oil companies had available for leasing and development 40.92 billion barrels of offshore oil in the Gulf of Mexico. I asked the EIA analyst how much of that (estimated) available oil had been discovered in the last five years. She went to her computer and said "about 7 billion barrels have been found." That leaves about 34 billion still to find and develop.
>
> The federal moratorium only blocks another 18 billion barrels of oil from being developed.[4]

And given the prospect of fixed supplies of oil, the greater the anticipated future scarcity value of oil, the greater will be the rational incentive for terrorists to leverage their power by disrupting supply. The infrastructure for extracting and distributing oil is unprecedentedly fragile, precisely because of a decline in productive capacity. Between 1985 and 2001, OPEC's excess production capacity fell from 25% of global demand to 2%. In 2003, the International Energy Agency estimated available excess

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1 Chris Vernon, "Peak Coal—Coming Soon?" *The Oil Drum: Europe*, April 5, 2007 <http://europe.theoildrum.com/node/2396>.
2 Ibid.
3 Richard Heinberg, *Peak Everything: Waking Up to the Century of Declines* (Gabriola Island, B.C.: New Society Publishers, 2007), p. 12.
4 Joseph Romm, "McCain's Cruel Offshore Drilling Hoax," *CommonDreams.Org*, July 11, 2008 <http://www.commondreams.org/archive/2008/07/11/10301>.

capacity was at its lowest level in thirty years.[1]

According to Jeff Vail, speculative hoarding of petroleum and terrorist actions against oil pipelines are not *alternative* explanations *in place of* Peak Oil, but the results of a positive feedback process created by Peak Oil itself.

> It is quite common to hear "experts" explain that the current tight oil markets are due to "above-ground factors," and not a result of a global peaking in oil production. It seems more likely that it is geological peaking that is driving the geopolitical events that constitute the most significant "above-ground factors" such as the chaos in Iraq and Nigeria, the nationalization in Venezuela and Bolivia, etc. Geological peaking spawns positive feedback loops within the geopolitical system. Critically, these loops are not separable from the geological events—they are part of the broader "system" of Peak Oil.
>
> Existing peaking models are based on the logistics curves demonstrated by past peaking in individual fields or oil producing regions. Global peaking is an entirely different phenomenon—the geology behind the logistics curves is the same, but global peaking will create far greater geopolitical side-effects, even in regions with stable or rising oil production. As a result, these geopolitical side-effects of peaking global production will accelerate the rate of production decline, as well as increase the impact of that production decline by simultaneously increasing marginal demand pressures. The result: the right side of the global oil production curve will not look like the left…whatever logistics curve is fit to the left side of the curve (where historical production increased), actual declines in the future will be sharper than that curve would predict.
>
> Here are five geopolitical processes, each a positive-feedback loop, and each an accelerant of declining oil production:
>
> 1. Return on Investment: Increased scarcity of energy, as well as increased prices, increase the return on investment for attacks that target energy infrastructure....
>
> 2. Mercantilism: To avoid the dawning "bidding cycles" between crude oil price increases and demand destruction, Nation-States are increasingly returning to a mercantilist paradigm on energy. This is the attitude of "there isn't enough of it to go around, and we can't afford to pay the market price, so we need to lock up our own supply....
>
> 3. "Export-Land" Model: Jeffrey Brown, a commentator at The Oil Drum, has proposed a geopolitical feedback loop that he calls the "export-land" model. In a regime of high or rising prices, a state's existing oil exports brings in great revenues, which trickles into the state's economy, and leads to increasing domestic oil consumption. This is exactly what is happening in most oil exporting states. The result, however, is that growth in domestic consumption reduces oil available for export....
>
> 4. Nationalism: Because our Westphalian system is fundamentally broken, the territories of nations and states are rarely contiguous. As a result, it is often the case that a nation is cut out of the benefits from its host state's oil exports.... As a result, nations or sectarian groups within states will increasingly agitate for a larger share of the pie.... This process will develop local variants on the tactics of infrastructure disruption, as well as desensitize energy firms to ever greater rents for the security of their facilities and personnel—both of which will drive the next loop….
>
> 5. Privateering: Nationalist insurgencies and economies ruined by the downslide of the "export-land" effect will leave huge populations with no conventional economic prospects. High oil prices, and the willingness to make high protection payments, will drive those people to become energy privateers. We are seeing exactly this effect in Nigeria, where a substantial portion of the infrastructure disruption is no longer

1 Richard Heinberg, *Powerdown* (Gabriola Island, British Columbia: New Society Publishers, 2004), pp. 27-28.

carried out by politically-motivated insurgents, but by profit-motivated gangs....[1]

Mercantilism, in particular, probably goes a long way toward explaining America's invasion of Iraq and the Russian-American "Great Game" in Central Asia in recent years. The United States' post-9/11 drive for basing rights in the former Central Asian republics of the old USSR, and the rise of the Shanghai Cooperation Organization as a counterweight to American power, are clearly more meaningful in the light of the Caspian Sea basin oil reserves.

And the evidence is clear that price really is governed entirely by the fluctuation of demand, and that supply—at least on the upward side—is extremely inelastic. Just consider the movement of oil supplies after the price shock of the late '70s and early eighties to that of the past few years. As "transition town" movement founder Rob Hopkins points out, the supply of oil has increased little if any since 2005—fluctuating between 84 and 87 mbd—despite record price levels.[2]

Peak Oil is likely to throw a monkey-wrench into the gears of the Chinese model of state-sponsored capitalism. China heavily subsidizes energy and transportation inputs, pricing them at artificially low levels to domestic industrial consumers, just as did the USSR. This accounting gimmick won't work externally—the Saudis want cash on the barrel head, at the price they set for crude petroleum—and the increased demand for subsidized energy inputs by wasteful domestic Chinese producers will just cause China to bankrupt itself buying oil abroad.

Overall, the effect of Peak Oil is likely to be a radical shortening of corporate supply and distribution chains, a resurrection of small-scale local manufacturing in the United States, and a reorientation of existing manufacturing facilities in China and other offshore havens toward production for their own domestic markets.

The same is true of relocalized agriculture. The lion's share of in-season produce is apt to shift back to local sourcing, and out of season produce to become an expensive luxury. As Jeff Rubin describes it,

> As soaring transport costs take New Zealand lamb and California blueberries off Toronto menus and grocery-store shelves, the price of locally grown lamb and blueberries will rise. The higher they rise, the more they will encourage people to raise sheep and grow blueberries. Ultimately, the price will rise so high that now unsaleable real estate in the outer suburbs will be converted back into farmland. That new farmland will then help stock the grocery shelves in my supermarket, just like it did thirty or forty years ago.[3]

This was a common theme during the oil shocks of the 1970s, and has been revived in the past few years. In the late '70s Warren Johnson, in *Muddling Toward Frugality*, predicted that rising energy prices would lead to a radical shortening of industrial supply chains, and the relocalization of manufacturing and agriculture.[4] Although he jumped the gun by thirty years, his analysis is essentially sound in the context of today's Peak Oil concerns. The most pessimistic (not to say catastrophic) Peak Oil scenario is that of James Kunstler, outlined not only in *The Long Emergency* but fictionally in

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1 Jeff Vail, "Five Geopolitical Feedback-Loops in Peak Oil," *JeffVail.Net*, April 23, 2007 <http://www.jeffvail.net/2007/04/five-geopolitical-feedback-loops-in.html>.
2 Hopkins, *The Transition Handbook*, p. 22.
3 Jeff Rubin, *Why Your World is About to Get a Whole Lot Smaller: Oil and the End of Globalization* (Random House, 2009), p. 220.
4 Warren Johnson, *Muddling Toward Frugality* (San Francisco: Sierra Club Books, 1978).

World Made by Hand.[1] Kunstler's depiction of a world of candles and horse-drawn wagons, in my opinion, greatly underestimates the resilience of market economies in adjusting to energy shocks. Brian Kaller's "return to Mayberry scenario" is much less alarmist.

> In fact, peak oil will probably not be a crash, a moment when everything falls apart, but a series of small breakdowns, price hikes, and local crises....
>
> Take one of the more pessimistic projections of the future, from the Association for the Study of Peak Oil, and assume that by 2030 the world will have only two-thirds as much energy per person. Little breakdowns can feed on each other, so crudely double that estimate. Say that, for some reason, solar power, wind turbines, nuclear plants, tidal power, hydroelectric dams, bio-fuels, and new technologies never take off. Say that Americans make only a third as much money, or their money is worth only a third as much, and there is only a third as much driving. Assume that extended families have to move in together to conserve resources and that we must cut our flying by 98 percent.
>
> Many would consider that a fairly clear picture of collapse. But we have been there before, and recently. Those are the statistics of the 1950s -- not remembered as a big time for cannibalism.[2]

Like Kaller, Jeff Rubin presents the world after Peak Oil as largely "a return to the past ... in terms of the re-emergence of local economies."[3]

But despite the differences in relative optimism or pessimism among these various Peak Oil thinkers, their analyses all have a common thread running through them: the radical shortening of industrial supply and distribution chains, and an end to globalization based on the export of industry to low-wage sweatshop havens like China.

To quote a Rubin article from May 2008, two months before oil prices peaked, rising transportation costs had more than offset the Chinese wage differential. The cost of shipping a standard 40-ft container, he wrote, had tripled since 2000, and could be expected to double again as oil prices approached $200/barrel.[4] What's more, "the explosion in global transport costs has effectively offset all the trade liberalization efforts of the last three decades." A rise in oil prices from $20 to $150/barrel has the same effect on international trade as an increase in tariffs from 3% to 11%—i.e., to their average level in the 1970s.[5] According to Richard Milne,

> Manufacturers are abandoning global supply chains for regional ones in a big shift brought about by the financial crisis and climate change concerns, according to executives and analysts.
>
> Companies are increasingly looking closer to home for their components, meaning that for their US or European operations they are more likely to use Mexico and eastern Europe than China, as previously.[6]

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1 James Howard Kunstler, *The Long Emergency: Surviving the End of Oil, Climate Change, and Other Converging Catastrophes of the Twenty-First Century* (Grove Press, 2006); Kunstler, *World Made by Hand* (Grove Press, 2009).
2 Brian Kaller, "Future Perfect: the future is Mayberry, not Mad Max," *Energy Bulletin*, February 27, 2009 (from *The American Conservative*, August 2008) <http://www.energybulletin.net/node/48209>.
3 David Parkinson, "A coming world that's 'a whole lot smaller,'" *The Globe and Mail*, May 19, 2009 <http://docs.google.com/Doc?id=dg5dgmrv_79hjb66vc3>.
4 Jeffrey Rubin, "The New Inflation," *StrategEcon* (CIBC World Markets), May 27, 2008 <http://research.cibcwm.com/economic_public/download/smay08pdf>.
5 Jeffrey Rubin and Benjamin Tal, "Will Soaring Transport Costs Reverse Globalization?" *StrategEcon*, May 27, 2008, p. 4.
6 Richard Milne, "Crisis and climate force supply chain shift," *Financial Times*, August 9, 2009 <http://www.ft.com/cms/s/0/65a709ec-850b-11de-9a64-00144feabdc0.html>. See also Fred Curtis, "Peak Globalization: Climate change, oil depletion and global trade," *Ecological Economics* Volume 69, Issue 2 (December 15, 2009).

C. Fiscal Crisis of the State

The origins of corporate capitalism and the mass-production economy are associated with massive government subsidies; since then the tendency of corporate capital to socialize its operating costs has never abated. As a matter of basic economics, whenever you subsidize something and make it available to the user for less than its real cost, demand for it will increase. American capitalism, as a result, has followed a pattern of expansion skewed toward extensive additions of subsidized inputs, rather than more intensive use of existing ones. As James O'Connor describes the process,

> Transportation costs and hence the fiscal burden on the state are not only high but also continuously rising. It has become a standard complaint that the expansion of road transport facilities intensifies traffic congestion. The basic reason is that motor vehicle use is subsidized and thus the growth of the freeway and highway systems leads to an increase in the demand for their use.[1]

> There is another reason to expect transportation needs (and budgets) to expand. The development of rapid transport and the modernization of the railroads, together with the extension of the railroad systems, will push the suburbs out even further from urban centers, putting still more distance between places of work, residence, and recreation. Far from contributing to an environment that will free suburbanites from congestion and pollution, rapid transit will, no doubt, extend the traffic jams and air pollution to the present perimeters of the suburbs, thus requiring still more freeway construction, which will boost automobile sales.[2]

And the tendency of monopoly capitalism to generate surplus capital and output also increases the amount of money that the state must spend to absorb the surplus.

Monopoly capitalism, according to O'Connor, is therefore plagued by a “fiscal crisis of the state.” “...[T]he socialization of the costs of social investment and social consumption capital increases over time and increasingly is needed for profitable accumulation by monopoly capital.”[3]

> ...[A]lthough the state has socialized more and more capital costs, the social surplus (including profits) continues to be appropriated privately.... The socialization of costs and the private appropriation of profits creates a fiscal crisis, or “structural gap,” between state expenditures and state revenues. The result is a tendency for state expenditures to increase more rapidly than the means of financing them.[4]

In short, the state is bankrupting itself providing subsidized inputs to big business, while big business's demand for those subsidized inputs increases faster than the state can provide them. As Ivan Illich put it,

> queues will sooner or later stop the operation of any system that produces needs faster than the corresponding commodity....[5]

> ...[I]nstitutions create needs faster than they can create satisfaction, and in the process of trying to meet the needs they generate, they consume the Earth.[6]

The distortion of the price system, which in a free market would tie quantity demanded to quantity

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1 James O'Connor, *The Fiscal Crisis of the State* (New York: St. Martin's Press, 1973), p. 106.
2 Ibid., pp. 109-110.
3 Ibid., p. 8.
4 Ibid., p. 9.
5 Illich, *Disabling Professions* (New York and London: Marion Boyars, 1977), p. 30.
6 Illich, *Deschooling Society* (New York, Evanston, San Francisco, London: Harper & Row, 1973).

supplied, leads to ever-increasing demands on state services. Normally price functions as a form of feedback, a homeostatic mechanism much like a thermostat. Putting a candle under a thermostat will result in an ice-cold house When certain hormonal feedback loops are distorted in an organism, you get gigantism; the victim dies crushed by his own weight. Likewise, when the consumption of some factor is subsidized by the state, the consumer is protected from the real cost of providing it, and unable to make a rational decision about how much to use. So the state capitalist sector tends to add factor inputs extensively, rather than intensively; that is, it uses the factors in larger amounts, rather than using existing amounts more efficiently. The state capitalist system generates demands for new inputs from the state geometrically, while the state's ability to provide new inputs increases only arithmetically. The result is a process of snowballing irrationality, in which the state's interventions further destabilize the system, requiring yet further state intervention, until the system's requirements for stabilizing inputs finally exceed the state's resources. At that point, the state capitalist system reaches a breaking point.

Eventually, therefore, state capitalism hits a wall at which the state is no longer able to increase the supply of subsidized inputs. States approach the condition described by John Robb's term “hollow state”:

> The hollow state has the trappings of a modern nation-state (”leaders”, membership in international organizations, regulations, laws, and a bureaucracy) but it lacks any of the legitimacy, services, and control of its historical counter-part. It is merely a shell that has some influence over the spoils of the economy.[1]
>
> ...A hollow state is different from a failed state in that it continues to exist on the international stage. It has all the standard edifices of governance although most are heavily corrupted and in thrall to global corporate/monied elites. It continues to deliver political goods (albeit to a vastly diminished group, usually around the capital) and maintains a military. Further, in sections of the country, there is an appearance of normal life.
>
> However, despite this facade, the hollow state has abdicated (either explicitly as in Lebanon's case or de facto as in Mexico's) vast sections of its territory to networked tribes (global guerrillas). Often, these groups maintain a semblance of order, as in rules of Sao Paulo's militias or the Taliban's application of sharia. Despite the fact that these group [sic] control/manipulate explicit economic activity and dominate the use/application of violence at the local level, these groups often grow the local economy. How? By directly connecting it to global supply chains of illegal goods -- from people smuggling to drugs to arms to copytheft to money laundering.
>
> The longer this state of affairs persists, the more difficult it is to eradicate. The slate of alternative political goods delivered by these non-state groups, in contrast to the ineffectiveness of the central government, sets the stage for a shift in legitimacy. Loyalties shift. Either explicitly through membership in tribal networks, or acknowledgement of the primacy of these networks over daily life.[2]

The entente between American and Iraqi government military forces, on the one hand, and the Sunni militias in Al Anbar province, on the other, is a recent example of a hollowed state coming to terms with “Fourth Generation Warfare” networks as de facto local governments. An early example was the Roman imperial state of the fifth century, delegating de facto territorial control to German tribal entities in return for de jure fealty to Rome.

And of course, in Robb's preferred scenario—as we will see in Chapter Six—loyalties shift from

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1 John Robb, “Onward to a Hollow State,” *Global Guerrillas*, September 22, 2009 <http://globalguerrillas.typepad.com/globalguerrillas/2008/09/onward-to-a-hol.html>.
2 Robb, “HOLLOW STATES vs. FAILED STATES,” *Global Guerrillas*, March 24, 2009 <http://globalguerrillas.typepad.com/globalguerrillas/2009/03/hollow-states-vs-failed-states.html>.

the state to resilient communities.

If the state does not become completely hollowed out by Robb's criteria, it nevertheless is forced to retreat from an ever increasing share of its former functions owing to its shrinking resources: a collapse of the value of official currency, combined with a catastrophic decline in tax revenues. The state delegates more and more functions to private entities nominally operating pursuant to state policy but primarily in the interest of self-aggrandizement, becomes prey to kleptocrats, leaves unenforced more and more laws that are technically on the books, and abandons ever increasing portions of its territory to the black market and organized criminal gangs.

In many ways, this is a positive development. Local sheriffs may decide that evicting mortgage defaulters and squatters, enforcing regulatory codes against household microenterprises, and busting drug users fall very low on their list of priorities, compared to dealing with murder and robbery. Governments may find themselves without the means of financing corporate welfare.

Something like this happened in Poland in the 1980s, with Gen. Jaruzelski—in a classic example of joining 'em when you can't beat 'em—finally deciding to legalize banned groups and hold open elections because Poland had become "ungovernable." Solidarity activist Wiktor Kulerski, in what should be an extremely suggestive passage for those of us who dream of an unenforceable regime of patent and copyright, zoning and licensing laws, wrote of his vision for a hollow state in Poland:

> This movement should create a situation in which authorities will control empty stores, but not the market; the employment of workers, but not their livelihood; the official media, but not the circulation of information; printing plants, but not the publishing movement; the mail and telephones, but not communications; and the school system, but not education.[1]

But to the extent that the current economic structure is heavily dependent on government activity, and adjustment to the withdrawal of subsidized infrastructure and services may take time, an abrupt retreat of state activity may result in a catastrophic period of adjustment.

The fiscal crisis dovetails with Peak Oil and other resource crises, in a mutually reinforcing manner. The imperative of securing strategic access to foreign oil reserves, and keeping the sea lanes open, results in costly wars. The increased cost of asphalt intensifies the already existing tendency, of demand for subsidized transportation infrastructure to outstrip the state's ability to supply it. As the gap expands, the period between deterioration of roads and the appropriation of money to repair them lengthens. The number of miles of high-volume highway the state is able to keep in a reasonable state of repair falls from one year to the next, and the state is continually forced to retreat and regroup and relegate an ever-larger share of highways to second-tier status. As James Kunstler points out, a highway is either kept in repair, or it quickly deteriorates.

> Another consequence of the debt problem is that we won't be able to maintain the network of gold-plated highways and lesser roads that was as necessary as the cars themselves to make the motoring system work. The trouble is you have to keep gold-plating it, year after year. Traffic engineers refer to this as "level-of-service." They've learned that if the level-of-service is less than immaculate, the highways quickly enter a spiral of disintegration. In fact, the American Society of Civil Engineers reported several years ago that the condition of many highway bridges and tunnels was at the "D-minus" level, so we had already fallen far behind on a highway system that had simply grown too large to fix even when we thought we were wealthy

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1 Lawrence W. Reed, "A Tribute to the Polish People," *The Freeman: Ideas on Liberty*, October 2009 <http://www.thefreemanonline.org/columns/ideas-and-consequences/a-tribute-to-the-polish-people/>.

enough to keep up.[1]

It doesn't take many years of neglect before deterioration and axle-breaking potholes render a highway unusable to heavy trucks, so that a growing share of the highway network will for all intents and purposes be abandoned.[2]

So each input crisis feeds the other, and we have a perfect storm of terminal crises. As described by Illich,

> The total collapse of the industrial monopoly on production will be the result of synergy in the failure of multiple systems that fed its expansion. This expansion is maintained by the illusion that careful systems engineering can stabilize and harmonize present growth, while in fact it pushes all institutions simultaneously toward their second watershed.[3]

D. Decay of the Cultural Pseudomorph

What Mumford called the "cultural pseudomorph," as we saw it described in Chapter One, was actually only the first stage. It has since decayed into a second, much weaker stage, unforeseen by Mumford, and shows signs of its final downfall. In the first stage, as Mumford observed, neotechnic methods (i.e., electrically powered machinery) were integrated into a mass-production framework fundamentally opposed to the technology's real potential. But this stage reached its limit by the 1970s.

In the second stage, mass production on the Sloan model is being replaced by flexible, networked production with general-purpose machinery, with the production process organized along lines much closer to the original neotechnic ideal.

Piore and Sabel describe the "lean" revolution of recent decades as the discovery, after a long interlude of mass production, of the proper way of organizing an industrial economy. "[T]he mass-production paradigm had unforeseen consequences: it took almost a century (from about 1870 to 1960) to discover how to organize an economy to reap the benefits of the new technology."[4]

According to those authors, the shift to lean production in America from the 1980s on was in large part a response to the increasing environment of macroeconomic uncertainty that prevailed after the resumption of the crisis of overaccumulation, and the oil shocks of the '70s. Mass-production industry is extremely brittle—i.e., it "does not adjust easily to major changes in its environment." The question is not just how industry will react to resource depletion, but how it will react to wildly fluctuating prices and erratic supplies.[5] Economic volatility and uncertainty means mass production industry will be hesitant to invest in specialized production machinery that may be unpredictably rendered superfluous by "changes in raw materials prices, interest rates, and so on."[6] As we saw in Chapter Two,

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1 James Howard Kunstler, "Lagging Recognition," *Clusterfuck Nation*, June 8, 2009 <http://kunstler.com/blog/2009/06/lagging-recognition.html>
2 Kunstler, *The Long Emergency*, pp. 264-265.
3 Illich, *Tools for Conviviality* (New York, Evanston, San Francisco, London: Harper & Row, 1973), p. 103.
4 Piore and Sabel, *Second Industrial Divide*, p. 48.
5 Ibid., p. 192.
6 Piore and Sabel, "Italian Small Business Development: Lessons for U.S. Industrial Policy," in John Zysman and Laura Tyson, eds., *American Industry in International Competition: Government Policies and Corporate Strategies* (Ithaca and

long-term capital investment in costly technologies requires predictability; and the environment associated with Peak Oil and other input and cyclical crises is just about the opposite of what conduces to the stability of mass-production industry.

Conversely, though, the system prevailing in industrial districts like Emilia-Romagna is called "flexible manufacturing" for a reason. It is able to reallocate dedicated capital goods and shift contractual relationships, and do so quite rapidly, in response to sudden changes in the environment.

Although craft production has always tended to expand relative to mass-production industry during economic downturns, it was only in the prolonged stagnation of the 1970s and '80s that it began permanently to break out of its peripheral status.

> From the second industrial revolution at the end of the nineteenth century to the present, economic downturns have periodically enlarged the craft periphery with respect to the mass-production core—but without altering their relationship. Slowdowns in growth cast doubt on subsequent expansion; in an uncertain environment, firms either defer mass-production investments or else switch to craft-production techniques, which allow rapid entry into whatever markets open up. The most straightforward example is the drift toward an industrial-subsistence, or -repair, economy: as markets stagnate, the interval between replacements of sold goods lengthens. This lengthened interval increases the demand for spare parts and maintenance services, which are supplied only by flexibly organized firms, using general-purpose equipment. The 1930s craftsman with a tool kit going door to door in search of odd jobs symbolizes the decreased division of labor that accompanies economic retrocession: the return to craft methods.
>
> But what is distinctive about the current crisis is that the shift toward greater flexibility is provoking technological sophistication—rather than regression to simple techniques. As firms have faced the need to redesign products and methods to address rising costs and growing competition, they have found new ways to cut the costs of customized production.... In short, craft has challenged mass production as the paradigm.[1]

In the case of small Japanese metalworking firms, American minimills and the Pratese textile industry, the same pattern prevailed. Small subcontractors of larger manufacturing firms "felt the increasing volatility of their clients' markets; in response, they adopted techniques that reduced the time and money involved in shifting from product to product, and that also increased the sophistication and quality of the output."[2]

In the Third Italy in particular, large mass-production firms outsourced an increasing share of components to networks of small, flexible manufacturers. The small firms, initially, were heavily dependent on the large ones as outlets. But new techniques and machine designs made production increasingly efficient in the small firms.

> In some cases... the larger equipment is miniaturized. In other cases, however, artisan-like techniques of smelting, enameling, weaving, cutting, or casting metal are designed into new machines, some of which are controlled by sophisticated microprocessors.

At the same time, small firms which previously limited themselves to supplying components to a large manufacturer's blueprints instead began marketing products of their own.[3]

London: Cornell University Press, 1983), p. 397.
1 Piore and Sabel, *Second Industrial Divide*, p. 207.
2 Ibid., p. 218.
3 Piore and Sabel, "Italian Small Business Development," pp. 397-398.

While small manufacturers in the late 1960s were still dependent on a few or even one large client, there was a wholesale shift in the 1970s.

> To understand how this dependence was broken in the course of the 1970s, and a new system of production created, imagine a small factory producing transmissions for a large manufacturer of tractors. Ambition, the joy of invention, or fear that he and his clients will be devastated by an economic downturn lead the artisan who owns the shop to modify the design of the tractor transmission to suit the need of a small manufacturer of high-quality seeders.... But once the new transmission is designed, he discovers that to make it he needs precision parts not easily available on the market. If he cannot modify his own machines to make these parts, he turns to a friend with a special lathe, who like himself fears being too closely tied to a few large manufacturers of a single product. Soon more and more artisans with different machines and skills are collaborating to make more and more diverse products.[1]

So a shift has taken place, with the work formerly done by vertically integrated firms being outsourced to flexible manufacturing networks, and with a smaller and smaller share of essential functions that can only be performed by the core mass-production firm. As Eric Hunting observed:

> In the year 2000 our civilization reached an important but largely unnoticed milestone. For the first time the volume of consumer goods produced in 'job shop' facilities—mostly in Asia—exceeded the volume produce in traditional Industrial Age factories. This marks a long emerging trend of demassification of production capability driven by the trends in machine-tool evolution (smaller, smarter, cheaper) that is producing a corresponding demassification of capital and a homogenization of labor values around the globe. Globalization has generally sought profit through geographical spot-market value differences in resources and labor. But now those differences are disappearing faster the more they're exploited and capital has to travel ever faster and farther in search of shrinking margins.[2]

The organization of physical production, in both the Toyota Production System and in the Emilia-Romagna model of local manufacturing networks, is beginning—after a long mass-production interlude—to resemble the original neotechnic promise of integrating power machinery into craft production.

But the neotechnic, even though it has finally begun to emerge as the basis of a new, coherent production model governed by its own laws, is still distorted by the pseudomorph in a weaker form: the new form of production still takes place within a persistent corporate framework of marketing, finance and "intellectual property."

Andy Robinson, a member of the P2P Research email list, argued that “given recent studies showing equal productivity in factories in North and South,”

> the central mechanism of core-periphery exploitation has moved from technological inequality (high vs low value added) to rent extraction on IP. Since the loss of IP would make large companies irrelevant, they fight tooth and nail to preserve it, even beyond strict competitiveness, and behave in otherwise quite "irrational" ways to prevent their own irrelevance (e.g. the MPAA and RIAA's alienating of customers).[3]

And despite the admitted control of distributed manufacturing within a corporate framework, based on corporate ownership of “intellectual property,” Robinson suggests that the growing difficulty of enforcing IP will cause that framework to erode in the near future:

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1 Piore and Sabel, “Italy's High-Technology Cottage Industry,” *Transatlantic Perspectives* 7 (December 1982), p. 7.
2 Eric Hunting, private email, August 4, 2008.
3 Andy Robinson, “[p2p research] CAD files at the Pirate Bay? (Follow up,” October 28, 2009 <http://listcultures.org/pipermail/p2presearch_listcultures.org/2009-October/005403.html>.

> ...[I]t may be more productive to look at the continuing applicability or enforceability of IP, rather than whether businesses will continue to use it. While this is very visible in the virtual and informational sphere ("pirating" and free duplication of games, software, console systems, music, film, TV, news, books, etc), it is also increasingly the case in terms of technological hardware. Growing Southern economies—China being especially notorious—tend to have either limited IP regimes or lax enforcement, meaning that everything that a MNC produces there, will also be copied or counterfeited at the same quality for the local market, and in some cases traded internationally. I have my suspicions that Southern regimes are very aware of the centrality of IP to core-periphery exploitation and their laxity is quite deliberate. But, in part it also reflects the limits of the Southern state in terms of capacity to dominate society, and the growing sophistication of transnational networks (e.g. organised crime networks), which can evade, penetrate and fight the state very effectively.[1]

Elsewhere, Robinson brilliantly drew the parallels between the decay of the pseudomorph in the industrial and political realms:

> I think part of the crisis of the 70s has to do with networks and hierarchies. The "old" system was highly hierarchical, but was suffering problems from certain kinds of structural weaknesses in relation to networks —the American defeat in Vietnam being especially important.... And ever since the 70s the system has been trying to find hybrids of network and hierarchy which will harness and capture the power of networks without leading to "chaos" or system-breakdown. We see this across a range of fields: just-in-time production, outsourcing and downsizing, use of local subsidiaries, contracting-out, Revolution in Military Affairs, full spectrum dominance, indirect rule through multinational agencies, the Nixon Doctrine, joined-up governance, the growing importance of groups such as the G8 and G20, business networks, lifelong learning, global cities, and of course the development of new technologies such as the Internet....
>
> In the medium term, the loss of power to networks is probably irreversible, and capital and the state will either go down fighting or create more-or-less stable intermediary forms which allow them to persist for a time. We are already seeing the beginnings of the latter, but the former is more predominant. The way I see the crisis deepening is that large areas will drift outside state and capitalist control, integrated marginally or not at all (this is already happening at sites such as Afghanistan, NWFP, the Andes, Somalia, etc., and in a local way in shanty-towns and autonomous centres). I also expect the deterritorialised areas to spread, as a result of the concentration of resources in global cities, the ecological effects of extraction, the neoliberal closing of mediations which formerly integrated, and the growing stratum of people excluded either because of the small number of jobs available or the growing set of requirements for conformity. Eventually these marginal spaces will become sites of a proliferation of new forms of living, and a pole of attraction compared to the homogeneous, commandist, coercive core.[2]

So long as the state successfully manages to prop up the centralized corporate economic order, libertarian and decentralist technologies and organizational forms will be incorporated into the old centralized, hierarchical framework. As the system approaches its limits of sustainability, those elements become increasingly destabilizing forces within the present system, and prefigure the successor system. When the system finally reaches those limits, those elements will (to paraphrase Marx) break out of their state capitalist integument and become the building blocks of a fundamentally different society. We are, in short, building the foundations of the new society within the shell of the old.

And the second stage of the pseudomorph is weakening. For example, although the Nike model of "outsourcing everything" and retaining corporate control of an archipelago of small manufacturing

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1 Ibid.

2 Andy Robinson, "[p2p research] Berardi essay," P2P Research email list, May 25, 2009 <http://listcultures.org/pipermail/p2presearch_listcultures.org/2009-May/003079.html>.

shops still prevails to a considerable extent among U.S.-based firms, small subcontractors elsewhere have increasingly rebelled against the hegemony of their large corporate clients. In Italy and Japan the subcontractors have federated among themselves to create flexible manufacturing networks and reduce their dependence on any one outlet for their products.[1] The result is that the corporate headquarters, increasingly, is becoming a redundant node in a network—a redundant node that can be bypassed.

Indeed, the Nike model is itself extremely vulnerable to such bypassing. As David Pollard observes:

> In their famous treatise explaining the Internet phenomenon, Doc Searls, Dave Weinberger et al said that what made the Internet so powerful and so resilient was that it had no control 'centre' and no hierarchy: All the value was added, by millions of people, at the 'ends'. And if someone tried to disrupt it, these millions of users would simply work around the disruption. There is growing evidence that the same phenomenon is happening in businesses, which have long suffered from diseconomies of scale and bureaucracy that stifle innovation and responsiveness. Think of this as a kind of 'outsourcing of everything'.... Already companies like Levi Strauss make nothing at all—they simply add their label to stuff made by other companies, and distribute it (largely through independent companies they don't own either).[2]

If the people actually producing and distributing the stuff ever decide they have the right to market an identical product, Levi Strauss's ownership of the label notwithstanding, Levi's is screwed.

As a general phenomenon, the shift from physical to human capital as the primary source of productive capacity in so many industries, along with the imploding price and widespread dispersion of ownership of capital equipment in so many industries, means that corporate employers are increasingly hollowed out and only maintain control over the physical production process through legal fictions. When so much of actual physical production is outsourced to the small sweatshop or the home shop, the corporation becomes a redundant "node" that can be bypassed; the worker can simply switch to independent production, cut out the middleman, and deal directly with suppliers and outlets.

A good example of the weakness of the second stage of the pseudomorph is the relationship of the big automakers with parts suppliers today, compared to when Galbraith wrote forty years ago. As portrayed in *The New Industrial State*, the relationship between large manufacturers and their suppliers was one of unilateral market control. Today, Toyota's American factories share about two-thirds of their auto parts suppliers with the Detroit Three.[3] According to Don Tapscott and Anthony Williams, more than half of a vehicle's value already consists of electrical systems, electronics and software rather than the products of mechanical engineering, and by 2015 suppliers will conduct most R&D and production.[4]

Taking into account only the technical capabilities of the suppliers, it's quite feasible for parts suppliers to produce generic replacement parts in competition with the auto giants, to produce competing modular components designed for a GM or Toyota platform, or even to network to produce entirely new car designs piggybacked on a GM or Toyota chassis and engine block. The only thing stopping them is trademark and patent law.

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1 Piore and Sabel, *Second Industrial Divide*, pp. 226-227.

2 David Pollard, "Ten Important Business Trends," *How to Save the World*, May 12, 2009 <http://blogs.salon.com/0002007/2009/05/12.html#a2377>.

3 Dan Strumpf, "Exec Says Toyota Prepared for GM Bankruptcy," Associated Press, April 8, 2009 <http://abcnews.go.com/Business/wireStory?id=7288650>.

4 Don Tapscott and Anthony D. Williams, *Wikinomics: How Mass Collaboration Changes Everything* (New York: Portfolio, 2006), p. 231.

And in fact supplier networks are beginning to carry out design functions among themselves, albeit on contract to large corporate patrons. For example, Boeing's designers used to do all the work of developing detailed specs for each separate part, with suppliers just filling the order to the letter; Boeing then assembled the parts in its own plant. But now, according to Don Tapscott and Anthony Williams, "suppliers codesign airplanes from scratch and deliver complete subassemblies to Boeing's factories...." Rather than retaining control of all R&D in-house, Boeing is now "handing significant responsibility for innovation over to suppliers...."[1]

An early indication that things may be reaching a tipping point is China's quasi-underground "shanzhai" enterprises which, despite being commonly dismissed as mere producers of knockoffs, are in fact extremely innovative not only in technical design but in supply chain efficiency and the speed of their reactions to change. The shanzhai economy resembles the flexible manufacturing networks of the Third Italy. Significantly, supplier networks for transnational corporations have begun to operate underground to supply components for shanzhai enterprises.

> Tapping into the supply chains of big brands is easy, producers say. "It's really common for factories to do a night shift for other companies," says Zhang Haizhen, who recently ran a shanzhai company here. "No one will refuse an order if it is over 5,000 mobile phones."[2]

The Chinese motorcycle industry is a good illustration of these trends. Many of its major designs are reverse-engineered from Japanese products, and the industry's R&D model is based on networked collaborative design efforts between many small, independent actors. And the reverse-engineered bikes are not simple copies of the original Japanese designs in all their major details; they build on the original designs that are in many ways superior to it. "Rather than copy Japanese models precisely, suppliers take advantage of the loosely defined specifications to amend and improve the performance of their components, often in collaboration with other suppliers."[3]

And recently, according to Bunnie Huang, there have been indications that native Chinese auto firms have been producing an unauthorized version of the Corolla. Huang spotted what appeared to be a Toyota Corolla bearing the logo of the Chinese BYD auto company.

> So when I saw this, I wasn't sure if it was a stock Corolla to which a local enthusiast attached a BYD badge, or if it was a BYD copycat of our familiar brand-name Toyota car. Or, by some bizarre twist, perhaps Toyota is now using BYD to OEM their cars in China through a legitimized business relationship. I don't know which is true, but according to the rumors I heard from people who saw this photo, this is actually a copycat Toyota made using plans purchased on the black market that were stolen from Toyota. Allegedly, someone in China who studies the automobile industry has taken one of these apart and noted that the welds are done by hand. In the original design, the welds were intended to be done by machine. Since the hand-welds are less consistent and of lower quality than the robotic welds, the car no longer has adequate crash safety. There are also other deviations, such as the use of cheap plastic lenses for the headlights. But, I could see that making a copycat Corolla is probably an effective exercise for giving local engineers a crash-course in world-class car manufacture.[4]

Generally speaking, the corporate headquarters' control over the supplier is growing increasingly

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1 Tapscott and Williams, pp. 217-218.
2 David Barboza, "In China, Knockoff Cellphones are a Hit," *New York Times*, April 27, 2009 <http://www.nytimes.com/2009/04/28/technology/28cell.html>.
3 Tapscott and Williams, pp. 221-222.
4 Bunnie Huang, "Copycat Corolla?" *bunnie's blog*, December 13, 2009 <http://www.bunniestudios.com/blog/?p=749>.

tenuous. As long ago as a decade ago, Naomi Klein pointed out that the “competing labels... are often produced side by side in the same factories, glued by the very same workers, stitched and soldered on the very same machines.”[1]

E. Failure to Counteract Limits to Capture of Value by Enclosure of the Digital Commons

As Michel Bauwens describes it, it is becoming increasingly impossible to capture value from the ownership of ideas, designs, and technique—all the "ephemera" and "intellect" that Tom Peters writes about as a component of the price of manufactured goods—leading to a crisis of sustainability for capitalism. “Cognitive capitalism” is capital's attempt to adjust to the shift from physical to human capital, and to capture value from the immaterial realm. Bauwens cites McKenzie Wark's theory that a new “vectoralist” class “has arisen which controls the vectors of information, i.e. the means through which information and creative products have to pass, for them to realize their exchange value.” This describes “the processes of the last 40 years, say the post-1968 period, which saw a furious competition through knowledge-based competition and for the acquisition of knowledge assets, which led to the extraordinary weakening of the scientific and technical commons.”[2]

Cognitive capitalism arose as a solution to the unsustainability of the older pattern of capitalist growth, based on extensive addition of physical inputs and expansion into new geographical areas. Bauwens uses the analogy of the ancient slave economy, which became untenable when avenues of extensive development (i.e. expansion into new territory, and acquisition of new slaves) were closed off. When the slave system reached its limits of external expansion, it turned to intensive development via the feudal manor system, transforming the slave into a peasant who had an incentive to work the land more efficiently.

> The alternative to extensive development is intensive development, as happened in the transition from slavery to feudalism. But notice that to do this, the system had to change, the core logic was no longer the same. The dream of our current economy is therefore one of intensive development, to grow in the immaterial field, and this is basically what the experience economy means. The hope that it expresses is that business can simply continue to grow in the immaterial field of experience.[3]

And the state, as enforcer of the total surveillance society and copyright lockdown, is central to this business model. Johann Soderberg relates the crisis of realization under state capitalism to capital's growing dependence on the state to capture value from social production and redistribute it to private corporate owners. This takes the form both of "intellectual property" law, as well as direct subsidies from the taxpayer to the corporate economy. He compares, specifically, the way photocopiers were monitored in the old USSR to protect the power of elites in that country, to the way the means of digital

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1 Klein, *No Logo*, p. 203.

2 Michel Bauwens, *P2P and Human Evolution.* Draft 1.994 (Foundation for P2P Alternatives, June 15, 2005) <http://integralvisioning.org/article.php?story=p2ptheory1>; Although I've read Wark, his abstruse postmodern style generally obfuscates what Bauwens summarizes with great clarity clarifty.

3 Michel Bauwens, "Can the experience economy be capitalist?" *P2P Foundation Blog*, September 27, 2007 <http://blog.p2pfoundation.net/can-the-experience-economy-be-capitalist/2007/09/27>. Joseph Tainter's thesis, that the collapse of complex societies results from the declining marginal productivity of increases in complexity or expansion, is relevant here; *The Collapse of Complex Societies* (Cambridge, New York, New Rochelle, Melbourne, Sydney: Cambridge University Press, 1988). In particular, he echoes Bauwens' thesis that classical civilization failed as a result of the inability to continue extensive addition of inputs through territorial expansion. As we will see shortly below, it is the inability to capture sufficient marginal returns on new increments of capital investment and innovation, in an era of “Free,” that is destroying the existing economic system.

reproduction are monitored in this country to protect corporate power.[1] The situation is especially ironic, Cory Doctorow notes, when you consider the pressure the U.S. has put on the post-Soviet regime to enforce the global digital copyright regime: "post-Soviet Russia forgoes its hard-won freedom of the press to protect Disney and Universal!"[2] That's doubly ironic, considering the use of the term "Samizdat pirate" under the Soviet regime.

James O'Connor's theme, of the ever-expanding portion of the operating expenses of capital which come from the state, is also relevant here, considering the extent to which the technical prerequisites of the digital revolution were developed with state financing.

The ability to capture value from efficiency increases, through artificial scarcity and artificial property rights, is central to the New Growth Theory of Paul Romer. Consider his remarks in an interview with *Reason*'s Ron Bailey:

> **reason:** Yet there is a mechanism in the market called patents and copyright, for quasi-property rights in ideas.
>
> **Romer:** That's central to the theory. To the extent that you're using the market system to refine and bring ideas into practical application, we have to create some kind of control over the idea. That could be through patents. It could be through copyright. It might even be through secrecy. A firm can keep secret a lot of what it knows how to do.... So for relying on the market—and we do have to rely on the market to develop a lot of ideas—you have to have some mechanisms of control and some opportunities for people to make a profit developing those ideas.
>
> * * *
>
> **Romer:** There was an old, simplistic notion that monopoly was always bad. It was based on the realm of objects—if you only have objects and you see somebody whose cost is significantly lower than their price, it would be a good idea to break up the monopoly and get competition to reign freely. So in the realm of things, of physical objects, there is a theoretical justification for why you should never tolerate monopoly. But in the realm of ideas, you have to have some degree of monopoly power. There are some very important benefits from monopoly, and there are some potential costs as well. What you have to do is weigh the costs against the benefits.
>
> Unfortunately, that kind of balancing test is sensitive to the specifics, so we don't have general rules. Compare the costs and benefits of copyrighting books versus the costs and benefits of patenting the human genome. They're just very different, so we have to create institutions that can respond differentially in those cases.

Although Romer contrasts the realm of "science" with the realm of "the market," and argues that there should be some happy medium between their respective open and proprietary cultures, it's interesting that he identifies "intellectual property" as an institution of "the market."

And Romer makes it clear that what he means by "growth" is economic growth, in the sense of monetized exchange value:

> **Romer:** ....Now, what do I mean when I say growth can continue? I don't mean growth in the number of

1 Soderberg, *Hacking Capitalism*, pp. 144-145.

2 Cory Doctorow, "Happy Meal Toys versus Copyright: How America Chose Hollywood and Wal-Mart, and Why It's Doomed Us, and How We Might Survive Anyway," in Doctorow, *Content: Selected Essays on Technology, Creativity, Copyright, and the Future of the Future* (San Francisco: Tachyon Publications, 2008), p. 39.

> people. I don't even mean growth in the number of physical objects, because you clearly can't get exponential growth in the amount of mass that each person controls. We've got the same mass here on Earth that we had 100,000 years ago and we're never going to get any more of it. What I mean is growth in value, and the way you create value is by taking that fixed quantity of mass and rearranging it from a form that isn't worth very much into a form that's worth much more.[1]

Romer's thought is another version of Daniel Bell's post-industrialism thesis. As summarized by Manuel Castells, that thesis held that:

> (1) The source of productivity and growth lies in the generation of knowledge, extended to all realms of economic activity through information processing.
>
> (2) Economic activity would shift from goods production to services delivery....
>
> (3) The new economy would increase the importance of occupations with a high informational and knowledge content in their activity. Managerial, professional, and technical occupations would grow faster than any other occupational position and would constitute the core of the new social structure.[2]

The problem is that post-industrialism is self-liquidating: technological progress destroys the conditions necessary for capturing value from technological progress.

By their nature technological innovation and increased efficiency *destroy* growth. Anything that lowers the cost of inputs to produce a given output, in a free market with competition unfettered by entry barriers, will result in the reduction of exchange value (i.e. price). And since GDP is an accounting mechanism that measures the total value of inputs consumed, increased efficiency will *reduce* the size of "the economy."

Romer's model is essentially Schumpeterian. Recouping outlays for innovation requires prices that reflect average cost rather than marginal cost. Hence Romer's Schumpeterian schema precludes price-taking behavior in a competitive market; rather, it presupposes some form of market power ("monopolistic competition") by which firms can set prices to cover costs. Romer argues that his model of economic growth based on innovation is incompatible with price-taking behavior. A firm that invested significant sums in innovation, but sold only at marginal cost, could not survive as a price-taker. It is necessary, therefore, that the benefits of innovation—even though non-rival by their nature—be at least partially excludable through "intellectual property" law.[3]

Some right-wing libertarians mock big government liberals for a focus on "jobs" as an end in themselves, rather than as a means to an end. But Romer's focus on "growth" and "increased income," rather than on the amount of labor required to obtain a consumption good, is an example of the very same fallacy (and Bailey cheers him on, of course).

Jeff Jarvis sparked a long chain of discussions by arguing that innovation, by increasing efficiency, results in "shrinkage" rather than growth. The money left in customers' pockets, to the extent that it is reinvested in more productive venues, may affect the small business sector and not even show up in econometric statistics.[4]

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1 Ronald Bailey, "Post-Scarcity Prophet: Economist Paul Romer on growth, technological change, and an unlimited human future," *Reason*, December 2001 <http://reason.com/archives/2001/12/01/post-scarcity-prophet/>.
2 Manuel Castells, *The Rise of the Network Society* (Blackwell Publishers, 1996), pp. 203-204
3 Paul M. Romer, "Endogenous Technological Change" (December 1989). NBER Working Paper No. W3210.
4 Jeff Jarvis, "When innovation yields efficiency," BuzzMachine, June 12, 2009 <http://www.buzzmachine.com/ 2009/06/

Anton Steinpilz, riffing off Jarvis, suggested that the reduced capital expenditures might not reappear as increased spending *anywhere*, but might (essentially a two-sided coin) be pocketed by the consumer in the form of increased leisure and/or forced on the worker in the form of technological unemployment.[1] And Eric Reasons, writing about the same time, argued that innovation was being passed on to consumers, resulting in "massive deflation" and "less money involved" overall.[2]

Reasons built on this idea, massive deflation resulting from increased efficiency, in a subsequent blog post. The problem, Reasons argued, was that while the deflation of prices in the old proprietary content industries benefited consumers by leaving dollars in their pockets, many of those consumers were employees of industries made obsolete by the new business models.

> Effectively, the restrictions that held supply in check for IP are slowly falling away. As effective supply rises, price plummets. Don't believe me? You probably spend less money now on music than you did 15 years ago, and your collection is larger and more varied than ever. You probably spend less time watching TV news, and less money on newspapers than you did 10 years ago, and are better informed.
>
> I won't go so far as to say that the knowledge economy is going to be no economy at all, but it is a shrinking one in terms of money, both in terms of cost to the consumer, and in terms of the jobs produced in it.[3]

And the issue is clearly shrinkage, not just a shift of superfluous capital and purchasing power to new objects. Craigslist employs fewer people than the industries it destroyed, for example. The ideal, Reasons argued, is for unproductive activity to be eliminated, but for falling work hours to be offset by lower prices, so that workers experience the deflation as a reduction in the ratio of effort to consumption:

> Given the amount of current consumption of intellectual property (copyrighted material like music, software, and newsprint; patented goods like just about everything else), couldn't we take advantage of this deflation to help cushion the blow of falling wages? How much of our income is dedicated to intellectual property, and its derived products? If wages decrease at the same time as cost-of-living decreases, are we really that bad off? Deflation moves in both directions, as it were....
>
> Every bit of economic policy coming out of Washington is based on trying to maintain a status quo that can not be maintained in a global marketplace. This can temporarily inflate some sectors of our economy, but ultimately will leave us with nothing but companies that make the wrong things, and people who perform the wrong jobs. You know what they say: "As GM goes, so goes the country."[4]

Contrary to "Free" optimists like Chris Anderson and Kevin Kelley, Reasons suspects that reduced rents on proprietary content cannot be replaced by monetization in other areas. The shrinkage of proprietary content industries will not be replaced by growth elsewhere, or the reduced prices offset by

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12/when-innovation-yields-efficiency/>.

1 Anton Steinpilz, "Destructive Creation: BuzzMachine's Jeff Jarvis on Internet Disintermediation and the Rise of Efficiency," *Generation Bubble*, June 12, 2009 <http://generationbubble.com/2009/06/12/destructive-creation-buzzmachines-jeff-jarvis-on-internet-disintermediation-and-the-rise-of-efficiency/>.

2 Eric Reasons, "Does Intellectual Property Law Foster Innovation?" *The Tinker's Mind*, June 14, 2009 <http://blog.ericreasons.com/2009/06/does-intellectual-property-law-foster.html>.

3 Reasons, "Intellectual Property and Deflation of the Knowledge Economy," *The Tinker's Mind*, June 21, 2009 <http://blog.ericreasons.com/2009/06/intellectual-property-and-deflation-of.html>.

4 Reasons, "The Economic Reset Button," *The Tinker's Mind*, July 2, 2009 <http://blog.ericreasons.com/2009/07/economic-reset-button.html>.

a shift of demand elsewhere, on a one-to-one basis.[1]

Mike Masnick, of *Techdirt*, praised Reasons' analysis, but suggested—from a fairly conventional standpoint—that it was incomplete:

> So this is a great way to think about the *threat* side of things. Unfortunately, I don't think Eric takes it all the way to the next side (the opportunity side), which we tried to highlight in that first link up top, here. Eric claims that this "deflation" makes the sector shrink, but I don't believe that's right. It makes companies who rely on business models of artificial scarcity to shrink, but it doesn't make the overall sector shrink if you define the market properly. Economic efficiency may make certain segments of the market shrink (or disappear), but it expands the overall market.
>
> Why? Because efficiency gives you more output for the same input (bigger market!). The tricky part is that it may move around where that output occurs. And, when you're dealing with what I've been calling "infinite goods" you can have a multiplicative impact on the market. That's because a large part of the "output" is now infinitely reproduceable at no cost. For those who stop thinking of these as "goods that are being copied against our will" and start realizing that they're "*inputs* into a wider market where we don't have to pay for any of the distribution or promotion!" there are much greater opportunities. It's just that they don't come from artificial scarcity any more. They come from abundance.[2]

Reasons responded, in a comment below Masnick's post (aptly titled "The glass is twice the size it needs to be..."), that "this efficiency will make the economic markets they affect "shrink" in terms of economy and capital. It doesn't mean that the number of variation of the products available will shrink, just the capital involved."[3]

He stated this assessment in even sharper terms in a comment under Michel Bauwens's blog post on the exchange:

> While I certainly wouldn't want to go toe-to-toe with Mike Masnick on the subject, I did try to clarify in comments that it isn't that I don't see the opportunity in the "knowledge economy", but simply that value can be created where capital can't be captured from it. The trick is to reap that value, and distinguish where capital can and where it cannot add value. Of course there's money to be made in the knowledge economy—ask Google or Craigslist—but by introducing such profound efficiencies, they deflate the markets they touch at a rate far faster than the human capital can redeploy itself in other markets. Since so much capital is dependent upon consumerism generated by that idled human capital, deflation follows.[4]

Neoclassical economists would no doubt dismiss Reasons' argument, and other theories of technological unemployment, as variations on the "lump of labor fallacy." But their dismissal of it, under that trite label, itself makes an implicit assumption that's hardly self-evident: that demand is infinitely, upwardly elastic.

That assumption is stated, in the most vulgar of terms, from an Austrian standpoint by a writer at LewRockwell.com:

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1 Reasons, "Innovative Deflation," *The Tinker's Mind*, July 5, 2009 <http://blog.ericreasons.com/2009/07/innovative-deflation.html>.

2 Mike Masnick, "Artificial Scarcity is Subject to Massive Deflation," *Techdirt*, <http://techdirt.com/articles/ 20090624/ 0253385345.shtml>.

3 Reasons comment under Ibid., "The glass is twice the size it needs to be" <http://techdirt.com/article.php?sid=20090624/0253385345#c257>.

4 Comment under Michel Bauwens, "The great internet/p2p deflation," *P2P Foundation Blog*, November 11, 2009 <http://blog.p2pfoundation.net/the-great-internetp2p-deflation/2009/11/11>.

> You know, properly speaking, the "correct" level of unemployment is zero. Theoretically, the demand for goods and services is infinite. My own desire for goods and services has no limit, and neither does anyone else's. So even if everyone worked 24/7, they could never satisfy all the potential demand. It's just a matter of allowing people to work at wages that others are willing and able to pay.[1]

Aside from the fact that this implicitly contradicts Austrian arguments that increased labor productivity from capital investment are responsible for reduced working hours (see, e.g., George Reisman, quoted elsewhere in this chapter), this is almost cartoonish nonsense. If the demand for goods and services is unconstrained by the disutility of labor, then it follows that absent a minimum wage people would be working at least every possible waking hour—even if not "24/7." On the other hand if there *is* a tradeoff between infinite demand and the disutility of labor, then demand is *not* infinitely upwardly elastic. Some productivity increases will be lost through "leakages" in the form of increased leisure, rather than consumption of increased output of goods. That means that the demand for labor, even if somewhat elastic, will not grow as quickly as labor productivity.

Tom Walker (aka Sandwichman), an economist who has devoted most of his career to unmasking the "lump of labor" caricature as a crude strawman, confesses a degree of puzzlement as to why orthodox economists are so strident on the issue. After all, what they denounce as the "lump of labor fallacy" is based on what, "[w]hen economists do it, ...is arcane and learned *ceteris paribus* hokus pokus."[2] *Given* existing levels of demand for consumer goods, any increase in labor productivity will result in a reduction in total work hours available.

Of course the orthodox economist will argue that *ceteris* is never *paribus*. But that demand freed up by reduced wage expenditures in one sector will automatically translate, on a one-to-one basis, into increased demand (and hence employment) in another sector is itself by no means self-evident. And an assumption that such will occur, so strong that one feels sufficiently confident to invent a new "fallacy" for those who argue otherwise, strikes me as a belief that belongs more in the realm of theology than of economics.

P. M. Lawrence, in a discussion sparked by Casey's argument, expressed similar views in a private email:

> I always thought that "lump" reasoning was perfectly sound in any area in analysing instantaneous responses, as there's a lag before it changes while supply and demand respond - which means, it's important for matters of survival until those longer runs, and also you can use it in mathematically or verbally modelling how the lump does in fact change over time....[3]

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1 "Doug Casey on Unemployment," *LewRockwell.Com*, January 22, 2010. Interviewed by Louis James, editor, *International Speculator* <http://www.lewrockwell.com/casey/casey38.1.html>.

2 Tom Walker, "The Doppelganger Effect," *EconoSpeak*, January 2, 2010 <http://econospeak.blogspot.com/ 2010/01/ doppelg-effect.html>.

3 P. M. Lawrence, private email, January 25, 2010. Lawrence subsequently requested I add the following explanatory material:

> ...people might not understand just how you can use the idea of a "fixed" value in intermediate calculations on the way to getting a better description of how it really does vary.
>
> So you should probably refer people to more detail in the footnote, particularly on these areas:-
>
> - Successive relaxation; see http://en.wikipedia.org/wiki/Gauss%E2%80%93Seidel_method. Related topics include "accelerated convergence" (see http://en.wikipedia.org/wiki/Series_acceleration), which can be combined directly with

These shortcomings of Romer's New Growth apply, more particularly, to the “progressive” and “green” strands of cognitive capitalism. Bill Gates and Richard Florida are typical of this tendency. Florida specifically refers to Romer's New Growth Theory, “which assigns a central role to creativity or idea generation.” But he never directly addresses the question of just how such “idea generation” can be the source of economic growth, unless it is capitalized as the source of rents through artificial property rights. He quotes, without seeming to grasp its real significance, this remark of Romer's: “We are not used to thinking of ideas as economic goods, but they are surely the most significant ones that we produce.” “Economic goods” are goods with exchange value; and ideas can only have exchange value when they are subject to monopoly. Florida continues to elaborate on Romer's theory, arguing that an idea can be used over and over again, “an in fact grows in value the more it is used. It offers not diminishing returns, but *increasing returns*.” This displays a failure to grasp the distinction between use-value and exchange value. An idea can, indeed, result in exponential increases in our standard of living the more they are used, by reducing the labor and material inputs required to produce a unit of consumption. But in so doing, it *reduces* exchange value and causes marginal returns to fall to zero. Innovation causes economic value to implode.[1]

Florida himself, for all his celebration of networks and free agency, assumes a great deal of continuity with the existing corporate economy.

> In tracing economic shifts, I often say that our economy is moving from an older corporate-centered system defined by large companies to a more people-driven one. This view should not be confused with the unfounded and silly notion that big companies are dying off. Nor do I buy the fantasy of an economy organized around small enterprises and independent “free agents.” Companies, including very big ones, obviously still exist, are still influential and probably always will be.[2]

> A related myth is that the age of large corporations is over—that they have outlived their usefulness, their power has been broken, and they will eventually fade away along with other big organizational forms. The classic metaphor is the lumbering dinosaur made obsolete and susurped by small, nimble mammals—the usurpers in this case being small, nimble startup companies....

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that in successive over-relaxation (see http://en.wikipedia.org/wiki/Successive_over-relaxation).

- The method of perturbations; see http://en.wikipedia.org/wiki/Perturbation_theory, which states "This general procedure is a widely used mathematical tool in advanced sciences and engineering: start with a simplified problem and gradually add corrections that make the formula that the corrected problem matches closer and closer to the formula that represents reality". (Successive relaxation is applying that general approach in one particular area.) The part of my email you cut read "oversimplifying the technique just a little, as an engineering approximation you assume it's fixed, then you run it through the figures in a circular way to get a new contradictory value – and that's the value it changes to, after a corresponding time step; repeat indefinitely for a numerical model, or work out the time dependent equations that match that and solve them analytically". Your footnote should edit this and connect it to the same general approach, bringing out the idea that the first simplification is to pretend that the value is constant (as in a "lump of labour", say), and saying that since the whole point is to use an incorrect description to get to a better description, "incorrect" doesn't mean "invalid" - and, over a short enough term, even that first simplification of being fixed can be useful and meaningful as people really do have to get through those very short terms.

- Simultaneous differential equations, rigidly coupled and otherwise....

I brought some of these issues out in an unpublished letter to the Australian Financial Review, written 6.7.98, available at http://users.beagle.com.au/peterl/publicns.html#AFRLET3.

1 Richard Florida, *The Rise of the Creative Class* (New York: Basic Books, 2002), p.36.
2 Ibid. p. 6.

> But big companies are by no means going away. Microsoft and Intel continue to control much of the so-called information economy, along with Oracle, Cisco, IBM and AOL Time Warner. Big industrial concerns, from General Motors to General Electric, General Dynamics and General Foods, still turn out most of the nation's goods. Our money is managed not by upstarts but by large financial institutions. The resources that power our economy are similarly managed and controlled by giant corporations....
>
> The economy, like nature, is a dynamic system. New companies form and help us to propel it forward, with some dying out while others carry on to grow quite large themselves, like Microsoft and Intel. An economy composed only of small, short-lived entities would be no more sustainable than an ecosystem composed only of insects.[1]

Florida fails to explain just *why* large organizations are necessary. Large, hierarchical organizations originally came into existence as a result of the enormous capital outlays required for production, and the need to manage and control those capital assets. When physical capital outlays collapse by one or two orders of magnitude for most kinds of production, what further need is there for the large organizations? The large size of Microsoft and Intel results, in most cases (aside from the enormous capital outlay required for a microchip foundry, of course), from patents on hardware, software copyrights, and the like, that artificially increase required capital outlays, otherwise raise entry barriers, and thereby lock them into an artificial position of control.

And the purported instabilities of an economy of small firms, over which Florida raises so much alarm, are a strawman. Networked industrial ecologies of small firms achieve stability and permanence, as we shall see in Chapter Six, from modular design for common platforms. The individual producers may come and go, but the common specifications and protocols live on.

Florida's focus on individual career paths based on free agency, and on internal corporate cultures of "creativity," at the expense of genuine changes in institutional structure and size, remind me of Charles Reich's approach in *The Greening of America*. The great transformation Reich envisioned amounted to little more than leaving the giant corporations and central government agencies in place, but staffing them entirely with people in beads and bell-bottoms who, you know, had their heads in the right place, man.

But this approach is now failing in the face of the increasing inability to capture value from the immaterial realm. The strategy of shifting the burden of realization onto the state is untenable. Strong encryption, coupled with the proliferation of bittorrent and episodes like the DeCSS uprising (see later in this chapter), have shown that "intellectual property" is ultimately unenforceable. J. A. Pouwelse and his coauthors estimate that the continuing exponential advance of file-sharing technology will make copyright "impossible to enforce by 2010."[2] In particular, they mention

> anonymous downloading, uploading, and injection of content using a darknet. A darknet inhibits both Internet censorship and enforcement of copyright law. The freenetproject.org has in 2000 already produced a darknet, but it was slow, difficult to use, and offered little content. Darknets struggle with the second cardinal feature of P2P platforms. Full anonymity costs both extra bandwidth and is difficult to combine with enforcement of resource contributions. By 2010 darknets should be able to offer the same performance as traditional P2P software by exploiting social networking. No effective legal or technological method currently exits [sic] to stop darknets, with the exception of banning general-purpose computing.

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1 Ibid., pp. 26-27.

2 J.A. Pouwelse, P. Garbacki, D.H.J. Epema, and H.J. Sips, "Pirates and Samaritans: a Decade of Measurements on Peer Production and their Implications for Net Neutrality and Copyright" (The Netherlands: Delft University of Technology, 2008) <http://www.tribler.org/trac/wiki/PiratesSamaritans>., p. 20.

Technologies such as secure computing and DRM are convincingly argued to be unable to stop darknets.[1]

And in fact, as reported by *Ars Technica* back in 2007, attempts by university administrators to ban P2P at the RIAA's behest have caused students to migrate to darknets in droves.[2]

The rapid development of circumvention technology intersects—powerfully so—with the cultural attitudes of a generation for which industry "anti-songlifting" propaganda is as gut-bustingly hilariously as *Reefer Madness*. Girlintraining, commenting under a Slashdot post, had this to say of such propaganda:

> I used to read stuff like this and get upset. But then I realized that my entire generation knows it's baloney. They can't explain it intellectually. They have no real understanding of the subtleties of the law, or arguments about artists' rights or any of that. All they really understand is there is are large corporations charging private citizens tens, if not hundreds of thousands of dollars, for downloading a few songs here and there. And it's intuitively obvious that it can't possibly be worth that.
>
> An entire generation has disregarded copyright law. It doesn't matter whether copyright is useful or not anymore. They could release attack dogs and black helicopters and it wouldn't really change people's attitudes. It won't matter how many websites they shut down or how many lives they ruin, they've already lost the culture war because they pushed too hard and alienated people wholesale. The only thing these corporations can do now is shift the costs to the government and other corporations under color of law in a desperate bid for relevance. And that's exactly what they're doing.
>
> What does this mean for the average person? It means that we google and float around to an ever-changing landscape of sites. We communicate by word of mouth via e-mail, instant messaging, and social networking sites where the latest fix of free movies, music, and games are. If you don't make enough money to participate in the artificial marketplace of entertainment goods—you don't exclude yourself from it, you go to the grey market instead. All the technological, legal, and philosophical barriers in the world amount to nothing. There is a small core of people that understand the implications of what these interests are doing and continually search for ways to liberate their goods and services for "sale" on the grey market. It is (economically and politically) identical to the Prohibition except that instead of smuggling liquor we are smuggling digital files.
>
> Billions have been spent combating a singularily simple idea that was spawned thirty years ago by a bunch of socially-inept disaffected teenagers working out of their garages: Information wants to be free. Except information has no wants—it's the people who want to be free. And while we can change attitudes about smoking with aggressive media campaigns, or convince them to cast their votes for a certain candidate, selling people on goods and services they don't really need, what we cannot change is the foundations upon which a generation has built a new society out of.[3]

Cory Doctorow, not overly fond of the more ideologically driven wing of the open-source movement (or as he calls them, "patchouli-scented info-hippies"), says it isn't about whether "information wants to be free." Rather, the simple fact of the matter is "that computers are machines for copying bits and that once you... turn something into bits, they will get copied.... [I]f your business model is based on bits not getting copied you are screwed."[4]

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1 Ibid., p. 15.
2 Ken Fisher, "Darknets live on after P2P ban at Ohio U," *Ars Technica*, Mqy 9, 2007 <http://arstechnica.com/tech-policy/news/2007/05/darknets-live-on-after-p2p-ban-at-ohio-u.ars>.
3 Girlintraining comment under Soulskill, "Your Rights Online," *Slashdot*, January 9, 2010 <http://yro.slashdot.org/story/10/01/09/0341208/Politicians-Worldwide-Asking-Questions-About-ACTA>.
4 Bascha Harris, "A very long talk with Cory Doctorow, part 1," redhat.com, January 2006 <http://www.redhat.com/magazine/015jan06/features/doctorow/>.

> Raise your hand if you're thinking something like, "But DRM doesn't have to be proof against smart attackers, only average individuals!..."
>
> ...I don't have to be a cracker to break your DRM. I only need to know how to search Google, or Kazaa, or any of the other general-purpose search tools for the cleartext that someone smarter than me has extracted.[1]
>
> It used to be that copy-prevention companies' strategies went like this: "We'll make it easier to buy a copy of this data than to make an unauthorized copy of it. That way, only the *uber*-nerds and the cash-poor/time rich classes will bother to copy instead of buy." But every time a PC is connected to the Internet and its owner is taught to use search tools like Google (or The Pirate Bay), a third option appears: you can just download a copy from the Internet....
>
> As I write this, I am sitting in a hotel room in Shanghai, behind the Great Firewall of China. Theoretically, I can't access blogging services that carry negative accounts of Beijing's doings, like WordPress, Blogger, and LiveJournal, nor the image-sharing site Flickr, nor Wikipedia. The (theoretically) omnipotent bureaucrats at the local Minitrue have deployed their finest engineering talent to stop me. Well, these cats may be able to order political prisoners executed and their organs harvested for Party members, but they've totally failed to keep Chinese people... off the world's Internet. The WTO is rattling its sabers at China today, demanding that they figure out how to stop Chinese people from looking at Bruce Willis movies without permission—but the Chinese government can't even figure out how to stop Chinese people from looking at seditious revolutionary tracts online.[2]

File-sharing networks spring up faster than they can be shut down. As soon as Napster was shut down, the public migrated to Kazaa and Gnutella. When Kazaa was shut down, its founders went on to create Skype and Joost. Other file-sharing services also sprang up in Kazaa's niche, like the Russian AllofMP3, which reappeared under a new name as soon as the WTO killed it.[3]

The proliferation of peer production and the open-source model, and the growing unenforceability of the "intellectual property" rules on which the capture of value depends, is creating "a vast new information commons..., which is increasingly out of the control of cognitive capitalism."[4] Capital, as a result, is incapable of realizing returns on ownership in the cognitive realm. As Bauwens explains it:

> 1) The creation of non-monetary value is exponential
>
> 2) The monetization of such value is linear
>
> In other words, we have a growing discrepancy between the direct creation of use value through social relationships and collective intelligence..., [and the fact that] only a fraction of that value can actually be captured by business and money. Innovation is becoming... an emergent property of the networks rather than an internal R & D affair within corporations; capital is becoming an a posteriori intervention in the realization of innovation, rather than a condition for its occurrence....
>
> What this announces is a crisis of value..., but also essentially a crisis of accumulation of capital. Furthermore, we lack a mechanism for the existing institutional world to re-fund what it receives from the social world. So on top of all of that, we have a crisis of social reproduction....

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1 Doctorow, "Microsoft DRM Research Talk," in *Content*, pp. 7-8.
2 Doctorow, "It's the Information Economy, Stupid," Ibid., p. 60.
3 Doctorow, "Why is Hollywood Making a Sequel to the Napster Wars?" in *Content*, p. 47.
4 Bauwens, *P2P and Human Evolution*.

Thus, while markets and private ownership of physical capital will persist, "the core logic of the emerging experience economy, operating as it does in the world of non-rival exchange, is unlikely to have capitalism as its core logic."[1]

A good example is the way in which digital culture, according to Douglas Rushkoff, destroyed California's economy:

> The fact is, most Internet businesses don't require venture capital. The beauty of these technologies is that they decentralize value creation. Anyone with a PC and bandwidth can program the next Twitter or Facebook plug-in, the next iPhone app, or even the next social network. While a few thousand dollars might be nice, the hundreds of millions that venture capitalists want to—need to—invest, simply aren't required....
>
> The banking crisis began with the dot.com industry, because here was a business sector that did not require massive investments of capital in order to grow. (I spent an entire night on the phone with one young entrepreneur who secured $20 million of capital from a venture firm, trying to figure out how to possibly spend it. We could only come up with $2 million of possible expenditures.) What's a bank to do when its money is no longer needed?...
>
> So they fail, the tax base decreases, companies based more on their debt structures than their production fail along with them, and we get an economic crisis. Yes, the Internet did all this.
>
> But that's also why the current crisis should be seen as a cause for celebration as well: the Internet actually did what it was supposed to by decentralizing our ability to create and exchange value.
>
> This was the real dream, after all. Not simply to pass messages back and forth, but to dis-intermediate our exchanges. To cut out the middleman, and let people engage and transact directly.
>
> This is, quite simply, cheaper to do. There's less money in it. Not necessarily less money for us, the people doing the exchanging, but less money for the institutions that have traditionally extracted value from our activity. If I can create an application or even a Web site like this one without borrowing a ton of cash from the bank, then I am also undermining America's biggest industry—finance.
>
> While we rightly mourn the collapse of a state's economy, as well as the many that are to follow, we must—at the very least—acknowledge the real culprit. For digital technology not only killed the speculative economy, but stands ready to build us a real one.[2]

The actual physical capital outlays required for digital creation are simply unable to absorb anything like the amounts of surplus capital in search of a profitable investment outlet—unless artificial property rights and artificial scarcity can be used to exclude independent production by all but the corporate owners of “intellectual property,” and mandate outlays totally unrelated to the actual physical capital requirements for production. Since such artificial property rights are, in fact, becoming increasingly unenforceable, corporate capital is unable either to combat the growing superfluity of its investment capital in the face of low-overhead production, or to capture value through artificial scarcity by suppressing low-cost competition.

If we view the transition from the perspective of innovators rather than venture capitalists, of course, it's a much more positive development. Michel Bauwens described the collapse of the dot-com bubble and the rise of Web 2.0 as the decoupling of innovation and entrepreneurship from capital, and

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1 Bauwens, “Can the experience economy be capitalist?”

2 Douglas Rushkoff, “How the Tech Boom Terminated California's Economy,” *Fast Company*, July 10, 2009 <http://www.fastcompany.com/article/how-tech-boom-terminated-californias-economy?page=0%2C1>.

the shift of innovation to networked communities.

> As an internet entrepreneur, I personally experienced both the manic phase, and the downturn, and the experience was life changing because of the important discovery I and others made at that time. All the pundits where predicting, then as now, that without capital, innovation would stop, and that the era of high internet growth was over for a foreseeable time. In actual fact, the reality was the very opposite, and something apparently very strange happened. In fact, almost everything we know, the Web 2.0, the emergence of social and participatory media, was born in the crucible of that downturn. In other words, innovation did not slow down, but actually increased during the downturn in investment. This showed the following new tendency at work: capitalism is increasingly being divorced from entrepreneurship, and entrepreneurship becomes a networked activity taking place through open platforms of collaboration.
>
> The reason is that internet technology fundamentally changes the relationship between innovation and capital. Before the internet, in the Schumpeterian world, innovators need capital for their research, that research is then protected through copyright and patents, and further funds create the necessary factories. In the post-schumpeterian world, creative souls congregate through the internet, create new software, or any kind of knowledge, create collaboration platforms on the cheap, and paradoxically, only need capital when they are successful, and the servers risk crashing from overload. As an example, think about Bittorrent, the most important software for exchanging multimedia content over the internet, which was created by a single programmer, surviving through a creative use of some credit cards, with zero funding. But the internet is not just for creative individual souls, but enables large communities to cooperate over platforms. Very importantly, it is not limited to knowledge and software, but to everything that knowledge and software enables, which includes manufacturing. Anything that needs to be physically produced, needs to be 'virtually designed' in the first place.
>
> This phenomena is called social innovation or social production, and is increasingly responsible for most innovation.[1]

As we will see in Chapter Five, initial capital outlay requirements for physical production are imploding in exactly the same way, which means that venture capital will lose most of its outlets in manufacturing as well.

For this reason the Austrian dogma of von Mises, that the only way to raise real wages is to increase the amount of capital invested, is shown to rely on a false assumption: the assumption that there is some necessary link between productivity and the sheer quantity of capital invested. George Reisman displays this tendency at its crudest.

> The truth, which real economists, from Adam Smith to Mises, have elaborated, is that in a market economy, the wealth of the rich—of the capitalists—is overwhelmingly invested in means of production, that is, in factories, machinery and equipment, farms, mines, stores, and the like. This wealth, this capital, produces the goods which the average person buys, and as more of it is accumulated and raises the productivity of labor higher and higher, brings about a progressively larger and ever more improved supply of goods for the average person to buy.[2]

But it has been at the heart of most twentieth century assumptions about economy of scale, and an unquestioned assumption behind the work of liberal managerialists like Chandler and Galbraith.

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1 Michel Bauwens, "Asia needs a Social Innovation Stimulus plan," *P2P Foundation Blog*, March 23, 2009 <http://blog.p2pfoundation.net/asia-needs-a-social-innovation-stimulus-plan/2009/03/23>.
2 George Reisman, "Answer to Paul Krugman on Economic Inequality," *The Webzine*, March 3, 2006 <http://thewebzine.com/articles/030306ReismanAnswer.html>.

For the same reason that the Austrian fixation on the quantity of capital investment as a source of productivity is obsolete, Marxist theories of the "social structure of accumulation" as an engine of growth are likewise obsolete. Technical innovation, in such theories, provides the basis for a new long-wave of investment to soak up surplus capital. The creation of some sort of new infrastructure is both a long-term sink for capital, and the foundation for new levels of productivity.

Gopal Balakrishnan, in *New Left Review*, correctly observes capitalism's inability, this time around, to gain a new lease on life through a new Kondratieff long-wave cycle: i.e., "a new socio-technical infrastructure, to supersede the existing fixed-capital grid." But he mistakenly sees it as the result either of an inability to bear the expense (as if productivity growth required an enormous capital outlay), or of technological stagnation. His claim of "technological stagnation," frankly, is utterly astonishing. He equates the outsourced production in job-shops, on the flexible manufacturing model that prevails in various forms in Shenzhen, Emilia-Romagna, and assorted corporate supplier networks, with a lower level of technological advancement.[1] But the shift of production from the old expensive, capital-intensive, product-specific infrastructure of mass-production industry to job-shops is in fact the result of an amazing level of technological advance: namely, the rise of cheap CNC machine tools scaled to small shops that are more productive than the old mass-production machinery. By technological stagnation, apparently, Balakrishnan simply means that less money is being invested in new generations of capital; but the crisis of capitalism results precisely from the fact that new forms of technology permit unprecedented levels of productivity with physical capital costs an order of magnitude lower. Both the Austrians and the neo-Marxists, in their equation of progress and productivity with the mass of capital invested, are stuck in the paleotechnic age.

This shows why the "cognitive capitalism" model of Gates, Romer, etc. is untenable. The natural tendency of technical innovation is not to add to GDP, but to destroy it. GDP measures, not the utility of production outputs to the consumer, but the value of inputs consumed in production.[2] So anything that reduces the total labor and material inputs required to produce a given unit of output should reduce GDP, unless artificial scarcity puts a floor under commodity price and prevents prices from falling to the new cost of production.

This is essentially what we saw Eric Reasons point out above. As Chris Anderson argues in *Free*, Microsoft's launch of Encarta on CD-Rom in the 1990s resulted in $100 billion in sales for Encarta—while destroying some $600 billion in sales for the traditional encyclopedia industry. And Wikipedia, in turn, destroyed still more sales for both traditional encyclopedias and Encarta.[3]

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1 Gopal Balakrishnan, "Speculations on the Stationary State," *New Left Review*, September-October 2009 <http://www.newleftreview.org/A2799>.

2 Balakrishnan, in Ibid., points to an interesting parallel between national accounting in the Soviet bloc and the neoliberal West:

> ...During the heyday of Reaganism, official Western opinion had rallied to the view that the bureaucratic administration of things was doomed to stagnation and decline because it lacked the ratio of market forces, coordinating transactions through the discipline of competition. Yet it was not too long after the final years of what was once called socialism that an increasingly debt- and speculation-driven capitalism began to go down the path of accounting and allocating wealth in reckless disregard of any notionally objective measure of value. The balance sheets of the world's greatest banks are an imposing testimony to the breakdown of standards by which the wealth of nations was once judged.
>
> In their own ways, both bureaucratic socialism and its vastly more affluent neo-liberal conqueror concealed their failures with increasingly arbitrary tableaux économiques. By the 80s the gdr's reported national income was revealed to be a statistical artifact that grossly inflated its cramped standards of living. But in the same decade, an emerging circuit of global imbalances was beginning to generate considerable problems for the measurement of capitalist wealth. The coming depression may reveal that the national economic statistics of the period of bubble economics were fictions, not wholly unlike those operative in the old Soviet system.

3 Chris Anderson, *Free: The Future of a Radical Price* (New York: Hyperion, 2009), pp. 129-130.

As Niall Cook describes it, enterprise software vendors are experiencing similar deflationary pressure.

> 'The design of business applications is more important than ever, says Joe Kraus, CEO of JobSpot. 'If I'm a buyer at a manufacturing company and I'm using Google Earth to look at the plants of my competition, and the Siebel sales rep asks me to spend $2 million on glorified database software, that causes a real disconnect.'
>
> In the 1990s some enterprise software vendors were busy telling customers that even the simplest problems needed large, complex systems to solve them. Following the dot-com crash at the start of the millennium few of these vendors survived, usurped by cheap—if not free—alternatives. This trend continues unabated in the form of social software. As Peter Merholz..., president and founder of user expereince firm Adaptive Path, put it, 'enterprise software is being eaten away from below'.[1]

The usual suspects proclaim that demand is upwardly elastic, and endlessly so, so that a reduction of costs in one industry will simply free up demand for increased output elsewhere. But it's unlikely, as Reasons pointed out, that there will be a one-to-one transfer of the demand freed up by lower prices from falling production costs to new forms of consumer goods, for the same reason that there's a backward-bending supply curve for labor. What economists mean by this latter wonkish-sounding term is that labor doesn't follow the upward sloping supply curve as most normal commodities, with higher wages resulting in willingness to work longer hours. Rather, part of the increase in income from higher wages is likely to be used to reduce work hours; rather than workers increasing demand for new products to absorb the total increase, it's more likely that total demand will grow less than the wage increase, and it will take fewer hours to earn the desired level of consumption. The reason is that the expenditure of labor carries disutility. For the same reason, rather than reduced production costs and prices in one industry simply freeing up demand for an equal value in new products elsewhere, it's likely that total GDP, i.e. total expenditure of labor and material inputs, will decline.

Rushkoff's reference to the collapsing tax base is especially interesting. As we have already seen, in an economy of subsidized inputs, the demand for such inputs grows exponentially, faster than the state can meet them. The state capitalist system will soon reach a point at which, thanks to the collapse of the portion of value comprised of rents on artificial property, the base of taxable value is imploding at the very time big business most needs subsidies to stay afloat. In the words of Charles Hughes Smith,

> what if the "end of paying work" will bring down the entire credit/consumption-dependent economy and the Federal government which depends on tax revenues from all that financial churn?...
>
> What if the Web, which is busily (creatively) destroying print media, the music industry, the movie business, Microsoft and many other rentier-type enterprises, ends up destroying income and profit-based tax revenues? How can the government support a status quo which requires $2 trillion in new borrowing every year just to keep from collapsing? What if that debt load is unsustainable?[2]

So the fiscal crisis of the state is accelerated not only by Peak Oil, but by the collapse of proprietary information as a source of value.

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1 Niall Cook, *Enterprise 2.0: How Social Software Will Change the Future of Work* (Burlington, Vt.: Gower, 2008), p. 24.
2 Charles Hugh Smith, "What if the (Debt Based) Economy Never Comes Back?" *Of Two Minds*, July 2, 2009 <http://www.oftwominds.com/blogjuly09/what-if07-09.html>.

The growing importance of human capital relative to physical capital, another effect of the implosion of material outlays and overhead for production, is also creating governability problems for the standard absentee-owned, hierarchical corporate enterprise. At the same time, there is a growing inability to enforce corporate boundaries on human capital because of the unenforceability of "intellectual property." Fifty years ago, enormous outlays on physical capital were the main structural basis for the corporation as a locus of control over physical assets. Today, for a growing number of industries, the physical capital requirements for entering the market have imploded, and "intellectual property" is the main structural support to corporate boundaries.

In this environment, the only thing standing between the old information and media dinosaurs and their total collapse is their so-called "intellectual property" rights—at least to the extent they're still enforceable. Ownership of "intellectual property" becomes the new basis for the power of institutional hierarchies, and the primary structural bulwark for corporate boundaries. Without them, in any industry where the basic production equipment is affordable to all, and bottom-up networking renders management obsolete, it is likely that self-managed, cooperative production will replace the old managerial hierarchies. The network revolution, if its full potential is realized,

> will lead to substantial redistribution of power and money from the twentieth century industrial producers of information, culture, and communications—like Hollywood, the recording industry, and perhaps the broadcasters and some of the telecommunications giants—to a combination of widely diffuse populations around the globe, and the market actors that will build the tools that make this population better able to produce its own information environment rather than buying it ready-made."[1]

The same thing is true in the physical realm, of course. As we shall see in Chapter Five, the revolution in cheap CNC machine tools (including homebrew 3-D printers, cutting/routing tables, etc., that cost a few hundred dollars in parts) is having almost as radical an effect on the capital outlays required for physical production as the desktop revolution had on the immaterial production. And the approach of the old corporate dinosaurs—trying to maintain artificial scarcity and avoid having to compete with falling production costs—is exactly the same in the physical as in the immaterial realm.

F. Networked Resistance, Netwar, and Asymmetric Warfare Against Corporate Management

We already mentioned the corporate governance issues caused by the growing importance of human relative to physical capital, and the untenability of "intellectual property" as a legal support for corporate boundaries. Closely related is the vulnerability of corporate hierarchies to asymmetric warfare by networked communities of consumers and their own employees. Centralized, hierarchical institutions are increasingly vulnerable to open-source warfare.

In the early 1970s, in the aftermath of a vast upheaval in American political culture, Samuel Huntington wrote of a "crisis of democracy"; the American people, he feared, were becoming ungovernable. In *The Crisis of Democracy*, he argued that the system was collapsing from demand overload, because of an excess of democracy. Huntington's analysis is illustrative of elite thinking behind the neoliberal policy agenda of the past thirty years.

For Huntington, America's role as "hegemonic power in a system of world order" depended on a domestic system of power; this system of power, variously referred to in this work as corporate

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1 James C. Bennett, "The End of Capitalism and the Triumph of the Market Economy," from *Network Commonwealth: The Future of Nations in the Internet Era* (1998, 1999) <http://www.pattern.com/bennettj-endcap.html>.

liberalism, Cold War liberalism, and the welfare-warfare state, assumed a general public willingness to stay out of government affairs.[1] And this was only possible because of a domestic structure of political authority in which the country "was governed by the president acting with the support and cooperation of key individuals and groups in the Executive office, the federal bureaucracy, Congress, and the more important businesses, banks, law firms, foundations, and media, which constitute the private establishment."[2]

America's position as defender of global capitalism required that its government have the ability "to mobilize its citizens for the achievement of social and political goals and to impose discipline and sacrifice upon its citizens in order to achieve these goals."[3] Most importantly, this ability required that democracy be largely nominal, and that citizens be willing to leave major substantive decisions about the nature of American society to qualified authorities. It required, in other words, "some measure of apathy and non-involvement on the part of some individuals and groups."[4]

Unfortunately, these requirements were being gravely undermined by "a breakdown of traditional means of social control, a delegitimation of political and other means of authority, and an overload of demands on government, exceeding its capacity to respond."[5]

The overload of demands that caused Huntington to recoil in horror in the early 1970s must have seemed positively tame by the late 1990s. As remarked on in a wide body of literature, the potential for networked resistance created by the Internet exacerbated Huntington's crisis of democracy beyond his wildest imagining.

Most notable in this literature are the Rand studies on netwar, from the late 1990s on, by David Ronfeldt, John Arquilla and other writers. In their 1996 paper "The Advent of Netwar," Arquilla and Ronfeldt wrote that technological evolution was working to the advantage of networks and the detriment of hierarchies. Although their focus was on the military aspect (what has since been called "Fourth Generation Warfare"), they also mentioned governability concerns in civil society much like those Huntington raised earlier. "Intellectual property pirates," "militant single-issue groups" and "transnational social activists," in particular, were "developing netwar-like attributes."

> Now... the new information technologies and related organizational innovations increasingly enable civil-society actors to reduce their isolation, build far-flung networks within and across national boundaries, and connect and coordinate for collective action as never before. As this trend deepens and spreads, it will strengthen the power of civil-society actors relative to state and market actors around the globe....
>
> For years, a cutting edge of this trend could be found among left-leaning activist NGOs concerned with human-rights, environmental, peace, and other social issues at local, national, and global levels. Many of these rely on APC affiliates for communications and aim to construct a "global civil society" strong enough to counter the roles of state and market actors. In addition, the trend is spreading across the political spectrum. Activists on the right—from moderately conservative religious groups, to militant antiabortion groups—are also building national and transnational networks based in part on the use of new communications systems.[6]

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1 Samuel P. Huntington, Michael J. Crozier, Joji Watanuki, *The Crisis of Democracy*. Report on the Governability of Democracies to the Trilateral Commission: Triangle Paper 8 (New York: New York University Press, 1975), pp. 105-6.
2 Ibid., p. 92.
3 Ibid., pp. 7-8.
4 Ibid., pp. 113-5.
5 Ibid., pp. 7-8.
6 John Arquilla and David Ronfeldt, *The Advent of Netwar* MR-789 (Santa Monica, CA: RAND, 1996)

In “Tribes, Institutions, Markets, Networks” (1996) Ronfeldt focused on the special significance of the network for networked global civil society.

> ...[A]ctors in the realm of civil society are likely to be the main beneficiaries. The trend is increasingly significant in this realm, where issue–oriented multiorganizational networks of NGOs—or, as some are called, nonprofit organizations (NPOs), private voluntary organizations (PVOs), and grassroots organizations (GROs)—continue to multiply among activists and interest groups who identify with civil society. Over the long run, this realm seems likely to be strengthened more than any other realm, in relative if not also absolute terms. While examples exist across the political spectrum, the most evolved are found among progressive political advocacy and social activist NGOs—e.g., in regard to environmental, human-rights, and other prominent issues—that depend on using new information technologies like faxes, electronic mail (e-mail), and on-line conferencing systems to consult and coordinate. This nascent, yet rapidly growing phenomenon is spreading across the political spectrum into new corners and issue areas in all countries.
>
> The rise of these networks implies profound changes for the realm of civil society. In the eighteenth and nineteenth centuries, when most social theorists focused on state and market systems, liberal democracy fostered, indeed required, the emergence of this third realm of activity. Philosophers such as Adam Ferguson, Alexis de Tocqueville, and G. W. F. Hegel viewed civil society as an essential realm composed of all kinds of independent nongovernmental interest groups and associations that acted sometimes on their own, sometimes in coalitions, to mediate between state and society at large. However, civil society was also considered to be a weaker realm than the state or the market. And while theorists treated the state and the market as systems, this was generally not the case with civil society. It was not seen as having a unique form of organization equivalent to the hierarchical institution or the competitive market, although some twentieth century theorists gave such rank to the interest group.
>
> Now, the innovative NGO-based networks are setting in motion new dynamics that promise to reshape civil society and its relations with other realms at local through global levels. Civil society appears to be the home realm for the network form, the realm that will be strengthened more than any other—either that, or a new, yet-to-be-named realm will emerge from it. And while classic definitions of civil society often encompassed state- and market-related actors (e.g., political parties, businesses and labor unions), this is less the case with new and emerging definitions—the separation of “civil society” from “state” and “market” realms may be deepening.
>
> The network form seems particularly well suited to strengthening civil-society actors whose purpose is to address social issues. At its best, this form may thus result in vast collaborative networks of NGOs geared to addressing and helping resolve social equity and accountability issues that traditional tribal, state, and market actors have tended to ignore or are now unsuited to addressing well.
>
> The network form offers its best advantages where the members, as often occurs in civil society, aim to preserve their autonomy and to avoid hierarchical controls, yet have agendas that are interdependent and benefit from consultation and coordination.[1]

In *The Zapatista "Social Netwar" in Mexico*,[2] Arquilla, Ronfeldt et al expressed grave concern over the possibilities of decentralized "netwar" techniques for destabilizing the political and economic order. They saw ominous signs of such a movement in the global political support network for the Zapatistas. Loose, ad hoc coalitions of affinity groups, organizing through the Internet, could throw

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<http://www.rand.org/pubs/monograph_reports/MR789/>.

1 David F. Ronfeldt, *Tribes, Institutions, Markets, Networks* P-7967 (Santa Monica: RAND, 1996) <http://www.rand.org/pubs/papers/P7967/>.

2 John Arquilla, David Ronfeldt, Graham Fuller, and Melissa Fuller. *The Zapatista "Social Netwar" in Mexico* MR-994-A (Santa Monica: Rand, 1998) <http://www.rand.org/pubs/monograph_reports/MR994/index.html>.

together large demonstrations at short notice, and "swarm" the government and mainstream media with phone calls, letters, and emails far beyond their capacity to cope. Ronfeldt and Arquilla noted a parallel between such techniques and the "leaderless resistance" ideas advocated by right-wing white supremacist Louis Beam, circulating in some Constitutionalist/militia circles.

The interesting thing about the Zapatista netwar, according to Ronfeldt and Arquilla, is that to all appearances it started out as a run-of-the-mill Third World army's suppression of a run-of-the-mill local insurgency. Right up until Mexican troops entered Chiapas, there was every indication the uprising would be suppressed quickly, and that the world outside Mexico would "little note nor long remember" it. It looked that way until Subcommandante Marcos and the Zapatistas made their appeal to global civil society and became the center of a networked movement that stirred activists the world over. The Mexican government was blindsided by the global reaction.[1]

Similarly, global corporations have been caught off guard when what once would have been isolated and easily managed conflicts become global political causes.

> Natural-resource companies had grown accustomed to dealing with activists who could not escape the confines of their nationhood: a pipeline or mine could spark a peasants' revolt in the Philippines or the Congo, but it would remain contained, reported only by the local media and known only to people in the area. But today, every time Shell sneezes, a report goes out on the hyperactive "shell-nigeria-action" listserve, bouncing into the in-boxes of all the far-flung organizers involved in the campaign, from Nigerian leaders living in exile to student activists around the world. And when a group of activists occupied part of Shell's U.K. Headquarters in January 1999, they made sure to bring a digital camera with a cellular linkup, allowing them to broadcast their sit-in on the Web, even after Shell officials turned off the electricity and phones....
>
> The Internet played a similar role during the McLibel Trial, catapulting London's grassroots anti-McDonald's movement into an arena as global as the one in which its multinational opponent operates. "We had so much information about McDonald's, we thought we should start a library," Dave Morris explains, and with this in mind, a group of Internet activists launched the McSpotlight Web site. The site not only has the controversial pamphlet online, it contains the complete 20,000-page transcript of the trial, and offers a debating room where McDonald's workers can exchange horror stories about McWork under the Golden Arches. The site, one of the most popular destinations on the Web, has been accessed approximately sixty-five million times.
>
> ...[This medium is] less vulnerable to libel suits than more traditional media. [McSpotlight programmer] Ben explains that while McSpotlight's server is located in the Netherlands, it has "mirror sites" in Finland, the U.S. New Zealand and Australia. That means that if a server in one country is targeted by McDonald's lawyers, the site will still be available around the world from the other mirrors.[2]

In "Swarming & the Future of Conflict," Ronfeldt and Arquilla focused on swarming, in particular, as a technique that served the entire spectrum of networked conflict—including "civic-oriented actions."[3] Despite the primary concern with swarming as a military phenomenon, they also gave some attention to networked global civil society—and the Zapatista support network in particular—as examples of peaceful swarming with which states were ill-equipped to deal:

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1 David Ronfeldt and Armando Martinez, "A Comment on the Zapatista Netwar," in Ronfeldt and Arquilla, *In Athena's Camp: Preparing for Conflict in th Information Age* (Santa Monica: Rand, 1997), pp. 369-371.
2 Klein, *No Logo*, pp. 393-395.
3 Arquilla and Ronfeldt, *Swarming & the Future of Conflict* DB-311 (Santa Monica, CA: RAND, 2000), iii <http://www.rand.org/pubs/documented_briefings/DB311/>.

A recent example of swarming can be found in Mexico, at the level of what we call activist "social netwar" (see Ronfeldt et al., 1998). Briefly, we see the Zapatista movement, begun in January 1994 and continuing today, as an effort to mobilize global civil society to exert pressure on the government of Mexico to accede to the demands of the Zapatista guerrilla army (EZLN) for land reform and more equitable treatment under the law. The EZLN has been successful in engaging the interest of hundreds of NGOs, who have repeatedly swarmed their media-oriented "fire" (i.e., sharp messages of reproach) against the government. The NGOs also swarmed in force—at least initially—by sending hundreds of activists into Chiapas to provide presence and additional pressure. The government was able to mount only a minimal counterswarming "fire" of its own, in terms of counterpropaganda. However, it did eventually succeed in curbing the movement of activists into Chiapas, and the Mexican military has engaged in the same kind of "blanketing" of force that U.S. troops employed in Haiti—with similar success.[1]

At present, our best understanding of swarming—as an optimal way for myriad, small, dispersed, autonomous but internetted maneuver units to coordinate and conduct repeated pulsing attacks, by fire or force—is best exemplified in practice by the latest generation of activist NGOs, which assemble into transnational networks and use information operations to assail government actors over policy issues. These NGOs work comfortably within a context of autonomy from each other; they also take advantage of their high connectivity to interact in the fluid, flexible ways called for by swarm theory.

The growing number of cases in which activists have used swarming include, in the security area, the Zapatista movement in Mexico and the International Campaign to Ban Landmines (ICBL). The former is a seminal case of "social netwar," in which transnationally networked NGOs helped deter the Mexican government and army from attacking the Zapatistas militarily. In the latter case, a netwar-like movement, after getting most nations to sign an international antilandmine treaty, won a Nobel Peace Prize. Swarming tactics have also been used, to a lesser degree, by pro-democracy movements aiming to put a dictatorship on the defensive and/or to alter U.S. trade and other relations with that dictatorship. Burma is an example of this.

Social swarming is especially on the rise among activists that oppose global trade and investment policies. Internet-based protests helped to prevent approval of the Multilateral Agreement on Investment (MAI) in Europe in 1998. Then, on July 18, 1999—a day that came to be known as J18—furious anticapitalist demonstrations took place in London, as tens of thousands of activists converged on the city, while other activists mounted parallel demonstrations in other countries. J18 was largely organized over the Internet, with no central direction or leadership. Most recently, with J18 as a partial blueprint, several tens of thousands of activists, most of them Americans but many also from Canada and Europe, swarmed into Seattle to shut down a major meeting of the World Trade Organization (WTO) on opening day, November 30, 1999—in an operation known to militant activists and anarchists as N30, whose planning began right after J18. The vigor of these three movements and the effectiveness of the activists' obstructionism came as a surprise to the authorities.

The violent street demonstrations in Seattle manifested all the conflict formations discussed earlier—the melee, massing, maneuver, and swarming. Moreover, the demonstrations showed that information-age networks (the NGOs) can prevail against hierarchies (the WTO and the Seattle police), at least for a while. The persistence of this "Seattle swarming" model in the April 16, 2000, demonstrations (known as A16) against the International Monetary Fund and the World Bank in Washington, D.C., suggests that it has proven effective enough to continue to be used.

From the standpoints of both theory and practice, some of the most interesting swarming was conducted by black-masked anarchists who referred to themselves collectively as the N30 Black Bloc, which consisted of anarchists from various affinity groups around the United States. After months of planning, they took to the field individually and in small groups, dispersed but internetted by two-way radios and other communications measures, with a concept of collective organization that was fluid and dynamic, but

1 Ibid., p. 39.

nonetheless tight. They knew exactly what corporate offices and shops they intended to damage—they had specific target lists. And by using spotters and staying constantly in motion, they largely avoided contact with the police (instead, they sometimes clashed with "peace keepers" among the protesters). While their tactics wrought physical destruction, they saw their larger philosophical and strategic goals in disruptive informational terms, as amounting to breaking the "spell" of private property, corporate hegemony, and capitalism over society.

In these social netwars—from the Zapatistas in 1994, through the N30 activists and anarchists in 1999—swarming appears not only in real-life actions but also through measures in cyberspace. Swarms of email sent to government figures are an example. But some "hacktivists" aim to be more disruptive—pursuing "electronic civil disobedience." One notable recent effort associated with a collectivity called the Electronic Disturbance Theater is actually named SWARM. It seeks to move "digital Zapatismo" beyond the initial emphasis of its creators on their "FloodNet" computer system, which has been used to mount massive "ping" attacks on government and corporate web sites, including as part of J18. The aim of its proponents is to come up with new kinds of "electronic pulse systems" for supporting militant activism. This is clearly meant to enable swarming in cyberspace by myriad people against government, military, and corporate targets. [1]

Swarming—in particular the swarming of public pressure through letters, phone calls, emails, and public demonstrations, and the paralysis of communications networks by such swarms—is the direct descendant of the "overload of demands" Huntington wrote of in the 1970s.

Netwar, Ronfeldt and Arquilla wrote elsewhere, is characterized by "the networked organizational structure of its practitioners—with many groups actually being leaderless —and the suppleness in their ability to come together quickly in swarming attacks."[2]

Jeff Vail discusses netwar techniques, in his *A Theory of Power* blog, using a term of his own: "Rhizome." Vail predicts that the political struggles of the 21st century will be defined by the structural conflict between rhizome and hierarchy.

Rhizome structures, media and asymmetric politics will not be a means to support or improve a centralized, hierarchical democracy--they will be an alternative to it.

Many groups that seek change have yet to identify hierarchy itself as the root cause of their problem..., but are already beginning to realize that rhizome is the solution.[3]

Many open-source thinkers, going back to Eric Raymond in *The Cathedral and the Bazaar*, have pointed out the nature of open-source methods and network culture as force-multipliers.[4] Open-source design communities pick up the innovations of individual members and quickly distribute them wherever they are needed, with maximum economy. By way of analogy, recall the argument from Cory Doctorow we saw above: proprietary content owners—who still don't "get" network culture—think if they only make DRM too difficult for the average consumer to circumvent, the losses to hard-core geeks who have the time and skills to get around it will be insignificant ("...DRM doesn't have to be proof against smart attackers, only average individuals!"). But network culture makes it unnecessary to figure out a way to route around DRM obstructions more than once; as soon as the first

1 Ibid., pp. 50-52.
2 John Arquilla and David Ronfeldt, "Introduction," in Arquilla and Ronfeldt, eds., "Networks and Netwars: The Future of Terror, Crime, and Militancy" MR-1382-OSD (Santa Monica: Rand, 2001) <http://www.rand.org/pubs/monograph_reports/MR1382/> ix.
3 Jeff Vail, *A Theory of Power* (iUniverse, 2004) <http://www.jeffvail.net/atheoryofpower.pdf>.
4 Eric S. Raymond, *The Cathedral and the Bazaar* <http://catb.org/~esr/writings/homesteading>.

person does it, it becomes part of the common pool of intelligence, available to anyone who can search The Pirate Bay (or whatever TPB successor exists at any given time).

Open-source insurgency follows a similar development model, with each individual innovation quickly becoming part of a common pool of intelligence. John Robb writes:

> The decentralized, and seemingly chaotic guerrilla war in Iraq demonstrates a pattern that will likely serve as a model for next generation terrorists. This pattern shows a level of learning, activity, and success similar to what we see in the open source software community. I call this pattern the bazaar. The bazaar solves the problem: how do small, potentially antagonistic networks combine to conduct war? Lessons from Eric Raymond's "The Cathedral and the Bazaar" provides a starting point for further analysis. Here are the factors that apply (from the perspective of the guerrillas):
>
> * Release early and often. Try new forms of attacks against different types of targets early and often. Don't wait for a perfect plan.
>
> * Given a large enough pool of co-developers, any difficult problem will be seen as obvious by someone, and solved. Eventually some participant of the bazaar will find a way to disrupt a particularly difficult target. All you need to do is copy the process they used.
>
> * Your co-developers (beta-testers) are your most valuable resource. The other guerrilla networks in the bazaar are your most valuable allies. They will innovate on your plans, swarm on weaknesses you identify, and protect you by creating system noise.[1]

Tom Knapp provides a good practical example of the Bazaar in operation—the G-20 protests in Philadelphia:

> During the G-20 summit in the Pittsburgh area last week, police arrested two activists. These particular activists weren't breaking windows. They weren't setting cars on fire. They weren't even parading around brandishing giant puppets and chanting anti-capitalist slogans.
>
> In fact, they were in a hotel room in Kennedy, Pennsylvania, miles away from "unsanctioned" protests in Lawrenceville … listening to the radio and availing themselves of the hotel's Wi-Fi connection. Now they stand accused of "hindering apprehension, criminal use of a communication facility and possessing instruments of crime."
>
> The radio they were listening to was (allegedly) a police scanner. They were (allegedly) using their Internet access to broadcast bulletins about police movements in Lawrenceville to activists at the protests, using Twitter....
>
> Government as we know it is engaged in a battle for its very survival, and that battle, as I've mentioned before, looks in key respects a lot like the Recording Industry Association of America's fight with peer-to-peer "file-sharing" networks. The RIAA can — and is — cracking down as hard as it can, in every way it can think of, but it is losing the fight and there's simply no plausible scenario under which it can expect to emerge victorious. The recording industry as we know it will change its business model, or it will go under.
>
> The Pittsburgh Two are wonderfully analogous to the P2P folks. Their arrest boils down, for all intents and purposes, to a public debugging session. Pittsburgh Two 2.0 will set their monitoring stations further from the action (across jurisdictional lines), use a relay system to get the information to those stations in a timely manner, then retransmit that information using offshore and anonymizing proxies. The cops won't get

1 John Robb, "THE BAZAAR'S OPEN SOURCE PLATFORM," *Global Guerrillas*, Sept3ember 24, 2004 <http://globalguerrillas.typepad.com/globalguerrillas/2004/09/bazaar_dynamics.html>.

within 50 miles of finding Pittsburgh Two 2.0, and anything they do to counter its efficacy will be countered in subsequent versions.[1]

Two more recent examples are the use of Twitter in Maricopa County to alert the Latino community to raids by Sherrif Joe Arpaio, and to alert drivers to sobriety checkpoints.[2]

One especially encouraging development is the stigmergic sharing of innovations in the technologies of resistance between movements around the world, aiding each other across national lines and bringing combined force to bear against common targets. The Falun Gong has played a central role in this effort:

> When these dissident Iranians chatted with each other and the outside world, they likely had no idea that many of their missives were being guided and guarded by 50 Falun Gong programmers spread out across the United States. These programmers, who almost all have day jobs, have created programs called Freegate and Ultrasurf that allow users to fake out Internet censors. Freegate disguises the browsing of its users, rerouting traffic using proxy servers. To prevent the Iranian authorities from cracking their system, the programmers must constantly switch the servers, a painstaking process.
>
> The Falun Gong has proselytized its software with more fervor than its spiritual practices. It distributes its programs for free through an organization called the Global Internet Freedom Consortium (GIFC), sending a downloadable version of the software in millions of e-mails and instant messages. In July 2008, it introduced a Farsi version of its circumvention tool.
>
> While it is hardly the only group to offer such devices, the Falun Gong's program is particularly popular thanks to its simplicity and relative speed....
>
> For all their cleverness, [Falun Gong] members found themselves constantly outmaneuvered. They would devise a strategy that would break past China's filtering tools, only to find their new sites quickly hacked or stymied. In 2002, though, they had their Freegate breakthrough. According to David Tian, a programmer with the GIFC and a research scientist at nasa, Freegate was unique because it not only disguised the ISP addresses, or Web destinations, but also cloaked the traffic signatures, or the ways in which the Chinese filters determined whether a Web user was sending an e-mail, navigating a website, sending an instant message, or using Skype. "In the beginning, Freegate was rudimentary, then the communists analyzed the software, they tried to figure out how we beat them. They started to block Freegate. But then, we started hiding the traffic signature," says Mr. Tian. "They have not been able to stop it since."....
>
> The Falun Gong was hardly alone in developing this kind of software. In fact, there's a Coke-Pepsi rivalry between Freegate and the other main program for skirting the censors: The Onion Router, or TOR. Although TOR was developed by the U.S. Navy—to protect Internet communication among its vessels—it has become a darling of the libertarian left. The TOR project was originally bankrolled, in part, by the Electronic Frontier Foundation (EFF), the group that first sued the U.S. government for warrantless wiretapping. Many libertarians are drawn to TOR because they see it as a way for citizens to shield themselves from the prying eyes of government.
>
> TOR uses an algorithm to route traffic randomly across three different proxy servers. This makes it slow but extremely secure—so secure that both the FBI and international criminal gangs have been known to use

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1 Thomas L. Knapp, "The Revolution Will Not Be Tweeted," *Center for a Stateless Society*, October 5, 2009 <http://c4ss.org/content/1179>.

2 Katherine Mangu-Ward, "The Sheriff is Coming! The Sheriff is Coming!" *Reason Hit & Run*, January 6, 2010 <http://reason.com/blog/2010/01/06/the-sheriff-is-coming-the-sher>; Brad Branan, "Police: Twitter used to avoid DUI checkpoints," *Seattle Times*, December 28, 2009 <http://seattletimes.nwsource.com/html/nationworld/2010618380_twitterdui29.html>.

it. Unlike the Falun Gong, the TOR programmers have a fetish for making their code available to anyone.

There's an irony in the EFF's embrace of TOR, since the project also receives significant funding from the government. The Voice of America has contributed money so that its broadcasts can be heard via the Internet in countries that have blocked their site, a point of envy for the GIFC. For the past four years, the Falun Gong has also been urging the U.S. government to back Freegate financially, going so far as to enlist activists such as Michael Horowitz, a Reagan administration veteran, and Mark Palmer, a former ambassador to Hungary, to press Congress. (Neither was paid for his work.) But, when the two finally persuaded Congress to spend $15 million on anti-censorship software last year, the money was redirected to a program for training journalists. Both Palmer and Horowitz concluded that the State Department despised the idea of funding the Falun Gong.

That's a reasonable conclusion. The Chinese government views the Falun Gong almost the way the United States views Al Qaeda. As Richard Bush, a China expert at the Brookings Institution, puts it, "An effort to use U.S. government resources in support of a Falun Gong project would be read in the worst possible way by the Chinese government."

Still, there will no doubt be renewed pressure to direct money to the likes of the GIFC and TOR. In the wake of the Iran demonstrations, three bills to fund anti-censorship software are rocketing through Congress, with wide support. Tom Malinowski, the Washington director for Human Rights Watch, argues that such software "is to human rights work today what smuggling mimeograph machines was back in the 1970s, except it reaches millions more people."[1]

The last three paragraphs are suggestive concerning the internal contradictions of state capitalism and its IP regime. The desire of would-be hegemons to aid each other's internal resistance often leads to the creation of virally replicable technologies of benefit to their own internal resistance; on the other hand, this danger sometimes sparks a sense of honor among thieves in which competing hegemons refrain from supporting each other's resistance. But overall, global interstate conflict is a source of technologies that can be exploited by non-state actors for internal resistance against the state.

Of course the conflict continues—but the resistance seems to be capable of developing counter-countermeasures before the state's counter-measures are even implemented.

And, while the Falun Gong has managed to win the upper hand in its battle with the Chinese government, it has reason to be less sanguine about the future. The Chinese have returned to the cyber-nanny model that U.S. libraries have deployed. This notorious project is called the Green Dam, or, more precisely, the Green Dam Youth Escort. Under the Green Dam, every new Chinese computer is required to come with a stringent filter pre-installed and, therefore, nearly impossible to remove. As the filter collects data on users, it relies on a government database to block sites. If anything, the Green Dam is too comprehensive. In its initial run, the software gummed up computers, crashing browsers and prohibiting virtually every Web search. In August, Beijing announced that it would delay the project indefinitely. Still, China had revealed a model that could, in theory, defeat nearly every Web-circumvention tool.

When I asked David Tian, the GIFC programmer, about Green Dam, he spoke about it with a mix of pride and horror. The pride comes from the fact that the GIFC's successes have placed the Chinese on the defensive. "One of the reasons they started this Green Dam business and moved the filter to the computer is because they cannot stop our products with the current filters," he said. But he conceded that Green Dam will render Freegate useless.

In the world of product development—and freedom fighting—you innovate or die. The Falun Gong is

1 Eli Lake, "Hacking the Regime," *The New Republic*, September 3, 2009 <http://www.tnr.com/article/politics/hacking-the-regime>.

> determined not to go the way of the Commodore 64 into technological irrelevance. It has released a beta version of a new piece of software to overcome the Green Dam. Without a real chance to test it, it's hard to tell whether it will work. But it has overcome the first hurdle of product development. It has marketed its product with a name that captures the swagger of the enterprise. It is called Green Tsunami.[1]

We will examine the general principles of the Bazaar and network culture, as they relate to the superior agility and resilience of the alternative economy as a whole, in Chapter Seven.

The concept of networked resistance is especially interesting, from our standpoint, as it relates to two things: the kind of anti-corporate "culture jamming" Naomi Klein describes in *No Logo*, and to labor struggle as a form of asymmetric warfare.

In both cases, governments and corporations, hierarchies of all kinds, are learning to their dismay that, in a networked age, it's impossible to suppress negative publicity. As Cory Doctorow put it, "Paris Hilton, the Church of Scientology, and the King of Thailand have discovered... [that] taking a piece of information off the Internet is like getting food coloring out of a swimming pool. Good luck with that."[2]

It's sometimes called the Streisand effect, in honor of Barbra Streisand (whose role in its discovery —about which more below—was analogous to Sir Isaac Newton's getting hit on the head by an apple).

One of the earliest examples of the phenomenon was the McLibel case in Britain, in which McDonald's attempt to suppress a couple of embarrassing pamphleteers with a SLAPP lawsuit wound up bringing them far worse publicity as a direct result. The pamphleteers were indigent and represented themselves in court much of the time, and repeatedly lost appeals in the British court system throughout the nineties (eventually they won an appeal in the European Court of Human Rights). But widespread coverage of the case on the Internet, coupled with the defendants' deliberate use of the courtroom as a bully pulpit to examine the factual issues, caused McDonald's one of the worst embarrassments in its history.[3] (Naomi Klein called it "the corporate equivalent of a colonoscopy.")[4]

Two important examples in 2004, the Sinclair Media boycott and the Diebold corporate emails, both decisively demonstrated the impossibility of suppressing online information in an age of mirror sites. A number of left-wing websites and liberal bloggers organized a boycott of Sinclair Media after its stations aired an anti-Kerry documentary by the Swift Boat campaign.

> In the ensuing boycott campaign, advertisers were deluged with more mail and phone calls than they could handle. By October 13, some sponsors were threatening litigation, viewing unsolicited boycott emails as illegal SPAM. Nick Davis, creator of one of the boycott sites, posted legal information explaining that anti-SPAM legislation applied only to commercial messages, and directed threatening sponsors to that information. At the same time, some Sinclair affiliates threatened litigation against sponsors who withdrew support in response to the boycott. Davis organized a legal support effort for those sponsors. By October 15, sponsors were pulling ads in droves. The price of Sinclair stock crashed, recovering only after Sinclair reversed its decision to air the documentary.[5]

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1 Ibid.
2 Doctorow, "It's the Information Economy, Stupid," p. 60.
3 "McDonald's Restaurants v Morris & Steele," *Wikipedia* <http://en.wikipedia.org/wiki/McLibel_case> (accessed December 26, 2009).
4 Klein, *No Logo*, p. 330.
5 Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (New Haven and

Diebold, similarly, attempted to shut down websites which hosted leaked corporate emails questioning the security of the company's electronic voting machines. But the data was widely distributed among student and other activist databases, and the hosting sites were mirrored in jurisdictions all over the world.

> In August, someone provided a cache of thousands of Diebold internal emails to *Wired* magazine and to Bev Harris. Harris posted the emails on her site. Diebold threatened litigation, demanding that Harris, her ISP, and other sites reproducing the emails take them down. Although the threatened parties complied, the emails had been so widely replicated and stored in so many varied settings that Diebold was unable to suppress them. Among others, university students at numerous campuses around the U.S. stored the emails and scrutinized them for evidence. Threatened by Diebold with provisions of the DMCA that required Web-hosting companies to remove infringing materials, the universities ordered the students to remove the materials from their sites. The students responded with a campaign of civil disobedience, moving files between students' machines, duplicating them on FreeNet (an "anti-censorship peer-to-peer publication network") and other peer-to-peer file-sharing systems.... They remained publicly available at all times.[1]

An attempt to suppress information on the Wikileaks hosting site, in 2007, resulted in a similar disaster.

> Associated Press (via the first amendment center) reports that “an effort at (online) damage control has snowballed into a public relations disaster for a Swiss bank seeking to crack down on Wikileaks for posting classified information about some of its wealthy clients. While Bank Julius Baer claimed it just wanted stolen and forged documents removed from the site (rather than close it down), **instead of the information disappearing, it rocketed through cyberspace,** landing on other Web sites and Wikileaks’ own “mirror” sites outside the U.S....
>
> The **digerati call the online phenomenon of a censorship attempt backfiring into more unwanted publicity the “Streisand effect.”** Techdirt Inc. chief executive Mike Masnick coined the term on his popular technology blog after the actress Barbra Streisand’s 2003 lawsuit seeking to remove satellite photos of her Malibu house. Those photos are now easily accessible, just like the bank documents. “It’s a perfect example of the Streisand effect,” Masnick said. “This was a really small thing that no one heard about and now it’s everywhere and everyone’s talking about it.”[2]

The so-called DeCSS uprising, in which corporate attempts to suppress publication of a code for cracking the DRM on DVDs failed in the face of widespread defiance, is one of the most inspiring episodes in the history of the free culture movement.

> Journalist Eric Corley—better known as Emmanuel Goldstein, a nom de plume borrowed from Orwell's *1984*—posted the code for DeCSS (so called because it decrypts the Content Scrambling System that encrypts DVDs) as a part of a story he wrote in November for the well-known hacker journal 2600. The Motion Picture Association of America (MPAA) claims that Corley defied anticircumvention provisions of the Digital Millennium Copyright Act (DMCA) by posting the offending code....
>
> The whole affair began when teenager Jon Johansen wrote DeCSS in order to view DVDs on a Linux machine. The MPAA has since brought suit against him in his native Norway as well. Johansen testified on Thursday that he announced the successful reverse engineering of a DVD on the mailing list of the Linux

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London: Yale University Press, 2006), pp. 220-223.

1 Ibid., pp. 227-231.

2 "PR disaster, Wikileaks and the Streisand Effect" PRdisasters.com, March 3, 2007 <http://prdisasters.com/pr-disaster-via-wikileaks-and-the-streisand-effect/>.

Video and DVD Project (LiViD), a user resource center for video- and DVD-related work for Linux....

> The judge in the case, the honorable Lewis Kaplan of the US District Court in southern New York, issued a preliminary injunction against posting DeCSS. Corley duly took down the code, but did not help his defense by defiantly linking to myriad sites which post DeCSS....
>
> True to their hacker beliefs, Corley supporters came to the trial wearing the DeCSS code on t-shirts. There are also over 300 Websites that still link to the decryption code, many beyond the reach of the MPAA.[1]

In the Usmanov case of the same year, attempts to suppress embarrassing information led to similar Internet-wide resistance.

> The Register, UK: Political websites have lined up in defence of a former diplomat whose blog was deleted by hosting firm Fasthosts after threats from lawyers acting for billionaire Arsenal investor Alisher Usmanov.
>
> Four days after Fasthosts pulled the plug on the website run by former UK ambassador to Uzbekistan Craig Murray it remains offline. Several other political and freedom of speech blogs in the UK and abroad have picked up the gauntlet however, and reposted the article that originally drew the takedown demand.
>
> The complaints against Murray's site arose after a series of allegations he made against Usmanov....
>
> After being released from prison, and pardoned, Usmanov became one of a small group of oligarchs to make hay in the former USSR's post-communist asset carve-up....
>
> On his behalf, libel law firm Schillings has moved against a number of Arsenal fan sites and political bloggers repeating the allegations....[2]

That reference to "[s]everal other political and freedom of speech blogs," by the way, is like saying the ocean is "a bit wet." An article at *Chicken Yoghurt* blog provides a list of all the venues that have republished Murray's original allegations, recovered from Google's caches of the sites or from the Internet Archive. It is a very, very long list[3]—so long, in fact, that *Chicken Yoghurt* helpfully provides the html code with URLs already embedded in the text, so it can be easily cut and pasted into a blog post. In addition, *Chicken Yoghurt* provided the IP addresses of Usmanov's lawyers as a heads-up to all bloggers who might have been visited by those august personages.

A badly edited photo of a waif in a Ralph Lauren ad, which made the model appear not just emaciated but deformed, was highlighted on the Photoshop Disasters website. Lauren sent the site legal notices of DMCA infringement, and got the site's ISP to take it down. In the process, though, the photo—and story—got circulated all over the Internet. Doctorow issued his defiance at *BoingBoing*:

> So, instead of responding to their legal threat by suppressing our criticism of their marketing images, we're gonna mock them. Hence this post....
>
> ...And every time you threaten to sue us over stuff like this, we will:

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1 Deborah Durham-Vichr. "Focus on the DeCSS trial," CNN.Com, July 27, 2000 <http://archives.cnn.com/2000/TECH/computing/07/27/decss.trial.p1.idg/index.html>.
2 Chris Williams, "Blogosphere shouts 'I'm Spartacus' in Usmanov-Murray case: Uzbek billionaire prompts Blog solidarity," *The Register*, September 24, 2007 <http://www.theregister.co.uk/2007/09/24/usmanov_vs_the_internet/>.
3 "Public Service Announcement—Craig Murray, Tim Ireland, Boris Johnson, Bob Piper and Alisher Usmanov…" *Chicken Yoghurt*, September 20, 2007 <http://www.chickyog.net/2007/09/20/public-service-announcement/>.

a) Reproduce the original criticism, making damned sure that all our readers get a good, long look at it, and;

b) Publish your spurious legal threat along with copious mockery, so that it becomes highly ranked in search engines where other people you threaten can find it and take heart; and

c) Offer nourishing soup and sandwiches to your models.[1]

The Trafigura case probably represents a new speed record, in terms of the duration between initial thuggish attempts to silence criticism and the company lawyers' final decision to cave. The Trafigura corporation actually secured a court injunction against *The Guardian*, prohibiting it from reporting a question by an MP on the floor of Parliament about the company's alleged dumping of toxic waste in Africa. Without specifically naming either Trafigura or the MP, reporter Alan Rusbridger was able to comply with the terms of the injunction and still include enough hints in his cryptic story for readers to scour the Parliamentary reports and figure it out for themselves. By the time he finished work that day, "Trafigura" was already the most-searched-for term on Twitter; by the next morning Trafigura's criminal acts—plus their attempt at suppressing the story—had become front-page news, and by noon the lawyers had thrown in the towel.[2]

John Robb describes the technical potential for information warfare against a corporation, swarming customers, employees, and management with propaganda and disinformation (or the most potent weapon of all, I might add—the truth), and in the process demoralizing management.

As we move forward in this epochal many to many global conflict, and given many early examples from wide variety of hacking attacks and conflicts, we are likely to see global guerrillas come to routinely use information warfare against corporations. These information offensives will use network leverage to isolate corporations morally, mentally, and physically.... Network leverage comes in three forms:

* Highly accurate lists of targets from hacking "black" marketplaces. These lists include all corporate employee e-mail addresses and phone numbers -- both at work and at home. ~<$0.25 a dossier (for accurate lists).

* Low cost e-mail spam. Messages can be range from informational to phishing attacks. <$0.1 a message.

* Low cost phone spam. Use the same voice-text messaging systems and call centers that can blanket target lists with perpetual calls. Pennies a call....

In short, the same mechanisms that make spamming/direct marketing so easy and inexpensive to accomplish, can be used to bring the conflict directly to the employees of a target corporation or its partner companies (in the supply chain). Executives and employees that are typically divorced/removed from the full range of their corporation's activities would find themselves immediately enmeshed in the conflict. The objective of this infowar would be to increase...:

* Uncertainty. An inability to be certain about future outcomes. If they can do this, what's next? For example: a false/troll e-mail or phone campaign from the CEO that informs employees at work and at home that it will divest from the target area or admits to heinous crimes.

1 Doctorow, "The criticism that Ralph Lauren doesn't want you to see!" *BoingBoing*, October 6, 2009 <http://www.boingboing.net/2009/10/06/the-criticism-that-r.html>.
2 Alan Rusbridge, "First Read: The Mutualized Future is Bright," *Columbia Journalism Review*, October 19, 2009 <http://www.cjr.org/reconstruction/the_mutualized_future_is_brigh.php>.

> * Menace. An increase [sic] personal/familial risk. The very act of connecting to directly to employee [sic] generates menace. The questions it should evoke: should I stay employed here given the potential threat?
>
> * Mistrust. A mistrust of the corporations moral and legal status. For example: The dissemination of information on a corporations actions, particularly if they are morally egregious or criminal in nature, through a NGO charity fund raising drive.
>
> With an increase in uncertainty, menace, and mistrust within the target corporation's ranks and across the supply chain partner companies, the target's connectivity (moral, physical, and mental) is likely to suffer a precipitous fall. This reduction in connectivity has the potential to create non-cooperative centers of gravity within the targets as cohesion fails. Some of these centers of gravity would opt to leave the problem (quit or annul contractual relationships) and some would fight internally to divest themselves of this problem.[1]

More generally, hierarchical institutions are finding that the traditional means of suppressing communication, that worked as recently as twenty years ago, are useless. Take something as simple as suppressing a school newspaper whose content violates the administrators' sensibilities. An increasingly common response is to set up an informal student newspaper online, and if necessary to tweak the hosting arrangements to thwart attempts at further suppression.[2]

Corporations are immensely vulnerable to informational warfare, both by consumers and by workers. The last section of Naomi Klein's *No Logo* discusses in depth the vulnerability of large corporations and brand name images to netwar campaigns.[3] She pays special attention to "culture jamming," which involves riffing off of corporate logos and thereby "tapping into the vast resources spent to make [a] logo meaningful."[4] A good example is the anti-sweatshop campaign by the National Labor Committee, headed by Charles Kernaghan.

> Kernaghan's formula is simple enough. First, select America's most cartoonish icons, from literal ones like Mickey Mouse to virtual ones like Kathie Lee Gifford. Next, create head-on collisions between image and reality. "They live by their image," Kernaghan says of his corporate adversaries. "That gives you a certain power over them... these companies are sitting ducks."[5]

At the time she wrote, technological developments were creating unprecedented potential for culture jamming. Digital design and photo editing technology made it possible to make incredibly sophisticated parodies of corporate logos and advertisements.[6] Interestingly, a lot of corporate targets shied away from taking culture jammers to court for fear a public might side with the jammers against the corporate plaintiffs. The more intelligent corporate bosses understand that "legal battles... will clearly be fought less on legal than on political grounds." In the words of one advertising executive, "No one wants to be in the limelight because they are the target of community protests or boycotts."[7]

Klein riffed off of Saul Alinsky's term "political jujitsu" to describe "using one part of the power

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1 John Robb, "INFOWAR vs. CORPORATIONS," *Global Guerrillas*, October 1, 2009 <http://globalguerrillas.typepad.com/globalguerrillas/2009/10/infowar-vs-corporations.html>.
2 Mike Masnick, "Yet Another High School Newspaper Goes Online to Avoid District Censorship," *Techdirt*, January 15, 200 <http://www.techdirt.com/articles/20090112/1334043381.shtml>.
3 Klein, *No Logo*, pp. 279-437.
4 Ibid., p. 281.
5 Ibid., p. 351.
6 Ibid. p. 285.
7 Ibid., p. 288.

structure against another part." Culture jamming is a form of political jujitsu that uses the power of corporate symbols—symbols deliberately developed to tap into subconscious drives and channel them in directions desired by the corporation—against their corporate owners.[1]

> Anticorporate activism enjoys the priceless benefits of borrowed hipness and celebrity—borrowed, ironically enough, from the brands themselves. Logos that have been burned into our brains by the finest image campaigns money can buy, ...are bathed in a glow....
>
> ...Like a good ad bust, anticorporate campaigns draw energy from the power and mass appeal of marketing, at the same time as they hurl that energy right back at the brands that have so successfully colonized our everyday lives.
>
> You can see this jujitsu strategy in action in what has become a staple of many anticorporate campaigns: inviting a worker from a Third World country to come visit a First World superstore—with plenty of cameras rolling. Few newscasts can resist the made-for-TV moment when an Indonesian Nike worker gasps as she learns that the sneakers she churned out for $2 a day sell for $120 at San Francisco Nike Town.[2]

The effect of "sully[ing] some of the most polished logos on the brandscape," as Klein characterized Kernaghan's efforts,[3] is much like that of "Piss Christ." He plays on the appeal of the dogs in *101 Dalmatians* by comparing the living conditions of the animals on the set to those of the human sweatshop workers who produce the tie-in products. He shows up for public appearances with "his signature shopping bag brimming with Disney clothes, Kathie Lee Gifford pants and other logo gear," along with pay slips and price tags used as props to illustrate the discrepancy between worker pay and retail price. In El Salvador, he pulls items out of the bag with price tags attached to show workers what their products fetch in the U.S. After a similar demonstration of Disney products in Haiti, "workers screamed with shock, disbelief, anger, and a mixture of pain and sadness, as their eyes fixed on the Pocahontas shirt"—a reaction captured in the film *Mickey Mouse Goes to Haiti*.[4]

Culture jamming is also an illustration of the effects of network culture. Although corporate imagery is still created by people thinking in terms of one-way broadcast communication, the culture jammers have grown up in an age where audiences can talk back to the advertisement or mock it to one another. The content of advertising becomes just another bit of raw material for mashups, as products once transmitted on a one-way conveyor belt from giant factory to giant retailer to consumer have now become raw material for hacking and reverse-engineering.[5]

The Wobbly idea of "direct action on the job" was a classic example of asymmetric warfare. And modern forms of networked resistance are ideally suited to labor struggle. In particular, network technology creates previously unimaginable possibilities for the Wobbly tactic of "open-mouth sabotage." As described in "How to Fire Your Boss":

> Sometimes simply telling people the truth about what goes on at work can put a lot of pressure on the boss. Consumer industries like restaurants and packing plants are the most vulnerable. And again, as in the case of the Good Work Strike, you'll be gaining the support of the public, whose patronage can make or break a business.
>
> Whistle Blowing can be as simple as a face-to-face conversation with a customer, or it can be as

1 Ibid., p. 281.
2 Ibid., pp. 349-350.
3 Ibid., p. 351.
4 Ibid., p. 353.
5 Ibid., p. 294.

dramatic as the P.G.&E. engineer who revealed that the blueprints to the Diablo Canyon nuclear reactor had been reversed. ...

Waiters can tell their restaurant clients about the various shortcuts and substitutions that go into creating the faux-haute cuisine being served to them. Just as Work to Rule puts an end to the usual relaxation of standards, Whistle Blowing reveals it for all to know.[1]

The authors of *The Cluetrain Manifesto* are quite expansive on the potential for frank, unmediated conversations between employees and customers as a way of building customer relationships and circumventing the consumer's ingrained habit of blocking out canned corporate messages.[2] They characterize the typical corporate voice as "sterile happytalk that insults the intelligence," "the soothing, humorless monotone of the mission statement, marketing brochure, and your-call-is-important-to-us busy signal."[3]

When employees engage customers frankly about the problems they experience with the company's product, and offer useful information, customers usually respond positively.

What the *Cluetrain* authors *don't* mention is the potential for disaster, from the company's perspective, when disgruntled workers see the customer as a potential ally against a common enemy. What would happen if employees decided, not that they wanted to help their company by rescuing it from the tyranny of PR and the official line and winning over customers with a little straight talk—but that they hated the company and that its management was evil? What if, rather than simply responding to a specific problem with what the customer had needed to know, they'd aired all the dirty laundry about management's asset stripping, gutting of human capital, hollowing out of long-term productive capability, gaming of its own bonuses and stock options, self-dealing on the job, and logrolling with directors?

Corporate America, for the most part, still views the Internet as "just an extension of preceding mass media, primarily television." Corporate websites are designed on the same model as the old broadcast media: a one-to-many, one-directional communications flow, in which the audience couldn't talk back. But now the audience *can* talk back.

Imagine for a moment: millions of people sitting in their shuttered homes at night, bathed in that ghostly blue television aura. They're passive, yeah, but more than that: they're isolated from each other.

Now imagine another magic wire strung from house to house, hooking all these poor bastards up. They're still watching the same old crap. Then, during the touching love scene, some joker lobs an off-color aside — and everybody hears it. Whoa! What was that?... The audience is suddenly connected to itself.

What was once The Show, the hypnotic focus and tee-vee advertising carrier wave, becomes... an excuse to get together.... Think of Joel and the 'bots on Mystery Science Theater 3000. The point is not to watch the film, but to outdo each other making fun of it.

And for such radically realigned purposes, some bloated corporate Web site can serve as a target every bit as well as Godzilla, King of the Monsters....

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1 “How to Fire Your Boss: A Worker's Guide to Direct Action” <http://www.iww.org/organize/strategy/strikes.shtml> (originally a Wobbly Pamphlet, it is reproduced in all its essentials at the I.W.W. Website under the heading of “Effective Strikes and Economic Actions”—although the Wobblies no longer endorse it in its entirety).
2 "Markets are Conversations," in Rick Levine, Christopher Locke, Doc Searls and David Weinberger, *The Cluetrain Manifesto: The End of Business as Usual* (Perseus Books Group, 2001) <http://www.cluetrain.com/book/index.html>.
3 "95 theses," in Ibid.

So here's a little story problem for ya, class. If the Internet has 50 million people on it, and they're not all as dumb as they look, but the corporations trying to make a fast buck off their asses are as dumb as they look, how long before Joe is laughing as hard as everyone else?

The correct answer of course: not long at all. And as soon as he starts laughing, he's not Joe Six-Pack anymore. He's no longer part of some passive couch-potato target demographic. Because the Net connects people to each other, and impassions and empowers through those connections, the media dream of the Web as another acquiescent mass-consumer market is a figment and a fantasy.

The Internet is inherently seditious. It undermines unthinking respect for centralized authority, whether that "authority" is the neatly homogenized voice of broadcast advertising or the smarmy rhetoric of the corporate annual report.[1]

....Look at how this already works in today's Web conversation. You want to buy a new camera. You go to the sites of the three camera makers you're considering. You hastily click through the brochureware the vendors paid thousands to have designed, and you finally find a page that actually gives straightforward factual information. Now you go to a Usenet discussion group, or you find an e-mail list on the topic. You read what real customers have to say. You see what questions are being asked and you're impressed with how well other buyers—strangers from around the world—have answered them....

Compare that to the feeble sputtering of an ad. "SuperDooper Glue—Holds Anything!" says your ad. "Unless you flick it sideways—as I found out with the handle of my favorite cup," says a little voice in the market. "BigDisk Hard Drives—Lifetime Guarantee!" says the ad. "As long as you can prove you oiled it three times a week," says another little voice in the market. What these little voices used to say to a single friend is now accessible to the world. No number of ads will undo the words of the market. How long does it take until the market conversation punctures the exaggerations made in an ad? An hour? A day? The speed of word of mouth is now limited only by how fast people can type....[2]

...Marketing has been training its practitioners for decades in the art of impersonating sincerity and warmth. But marketing can no longer keep up appearances. People talk.[3]

Even more important for our purposes, employees talk. It's just as feasible for the corporation's workers to talk directly to its customers, and for workers and customers together to engage in joint mockery of the company.

In an age when unions have virtually disappeared from the private sector workforce, and downsizings and speedups have become a normal expectation of working life, the vulnerability of employer's public image may be the one bit of real leverage the worker has over him—and it's a doozy. If they go after that image relentlessly and systematically, they've got the boss by the short hairs.

Web 2.0, the "writeable web," is fundamentally different from the 1990s vision of an "information superhighway" (one-way, of course), a more complex version of the old unidirectional hub-and-spoke architecture of the broadcast era—or as Tapscott and Williams put it, "one big content-delivery mechanism—a conveyor belt for prepackaged, pay-per-use content" in which "publishers... exert control through various digital rights management systems that prevent users from repurposing or redistributing content."[4] Most large corporations still see their websites as sales brochures, and Internet

1 "Chapter One. Internet Apocalypso," in Ibid.
2 "Chapter Four. Markets Are Conversations," in Ibid.
3 Ibid.
4 Tapscott and Williams, p. 271.

users as a passive audience. But under the Web 2.0 model, the Internet is a platform in which users are the active party.

Given the ease of setting up anonymous blogs and websites (just think of any company and then look up the URL employernamesucks.com), the potential for using comment threads and message boards, the possibility of anonymous saturation emailing of the company's major suppliers and customers and advocacy groups concerned with that industry.... well, let's just say the potential for "swarming" and "netwar" is corporate management's worst nightmare.

It's already become apparent that corporations are quite vulnerable to bad publicity from dissident shareholders and consumers. For example, Luigi Zingales writes,

> shareholders' activist Robert Monks succeeded [in 1995] in initiating some major changes at Sears, not by means of the norms of the corporate code (his proxy fight failed miserably) but through the pressure of public opinion. He paid for a full-page announcement in the *Wall Street Journal* where he exposed the identities of Sears' directors, labeling them the "non-performing assets" of Sears.... The embarrassment for the directors was so great that they implemented all the changes proposed by Monks.[1]

There's no reason to doubt that management would be equally vulnerable to embarrassment by such tactics from disgruntled production workers, in today's networked world.

For example, although Wal-Mart workers are not represented by NLRB-certified unions, in any bargaining unit in the United States, the "associates" have been quite successful at organized open-mouth sabotage through Wake Up Wal-Mart and similar activist organizations.

Consider the public relations battle over Wal-Mart "open availability" policy. Corporate headquarters in Bentonville quickly moved, in the face of organized public criticism, to overturn the harsher local policy announced by management in Nitro, West Virginia.

> A corporate spokesperson says the company reversed the store's decision because Wal-Mart has no policy that calls for the termination of employees who are unable to work certain shifts, the Gazette reports.
>
> "It is unfortunate that our store manager incorrectly communicated a message that was not only inaccurate but also disruptive to our associates at the store," Dan Fogleman tells the Gazette. "We do not have any policy that mandates termination."[2]

The Wal-Mart Workers' Association acts as an unofficial union, and has repeatedly obtained concessions from store management teams in several publicity campaigns designed to embarrass and pressure the company.[3] As Ezra Klein noted,

> This is, of course, entirely a function of the pressure unions have exerted on Wal-Mart—pressure exerted despite the unions having almost no hope of actually unionizing Wal-Mart. Organized Labor has expended tens of millions of dollars over the past few years on this campaign, and while it hasn't increased union density one iota, it has given a hundred thousand Wal-Mart workers health insurance, spurred Wal-Mart to launch an effort to drive down prescription drug prices, drove them into the "Divided We Fail" health reform

1 Luigi Zingales, "In Search of New Foundations," *The Journal of Finance*, vol. lv, no. 4 (August 2000), pp. 1627-1628.
2 "Wal-Mart Nixes 'Open Availability' Policy," *Business & Labor Reports* (Human Resources section), June 16, 2005 <http://hr.blr.com/news.aspx?id=15666>.
3 Nick Robinson, "Even Without a Union, Florida Wal-Mart Workers Use Collective Action to Enforce Rights," *Labor Notes*, January 2006. Reproduced at Infoshop, January 3, 2006 <http://www.infoshop.org/inews/article.php?story=20060103065054461>.

coalition, and contributed to the company's focus on greening their stores (they needed good press to counteract all the bad).[1]

Another example is the IWW-affiliated Starbucks union, which publicly embarrassed Starbucks Chairman Howard Schultz. It organized a mass email campaign, notifying the Co-op Board of a co-op apartment he was seeking to buy into of his union-busting activities.[2]

Charles Johnson points to the Coalition of Imolakee Workers as an example of an organizing campaign outside the Wagner framework, relying heavily on the open mouth:

> They are mostly immigrants from Mexico, Central America, and the Caribbean; many of them have no legal immigration papers; they are pretty near all mestizo, Indian, or Black; they have to speak at least four different languages amongst themselves; they are often heavily in debt to coyotes or labor sharks for the cost of their travel to the U.S.; they get no benefits and no overtime; they have no fixed place of employment and get work from day to day only at the pleasure of the growers; they work at many different sites spread out anywhere from 10–100 miles from their homes; they often have to move to follow work over the course of the year; and they are extremely poor (most tomato pickers live on about $7,500–$10,000 per year, and spend months with little or no work when the harvesting season ends). But in the face of all that, and across lines of race, culture, nationality, and language, the C.I.W. have organized themselves anyway, through efforts that are nothing short of heroic, and *they have done it as a wildcat union with no recognition from the federal labor bureaucracy and little outside help from the organized labor establishment.* By using creative nonviolent tactics that would be completely illegal if they were subject to the bureaucratic discipline of the Taft-Hartley Act, the C.I.W. has won major victories on wages and conditions over the past two years. They have bypassed the approved channels of collective bargaining between select union reps and the boss, and gone up the supply chain to pressure the tomato buyers, because they realized that they can exercise a lot more leverage against highly visible corporations with brands to protect than they can in dealing with a cartel of government-subsidized vegetable growers that most people outside of southern Florida wouldn't know from Adam.
>
> The C.I.W.'s creative use of moral suasion and secondary boycott tactics have already won them agreements with Taco Bell (in 2005) and then McDonald's (this past spring), which almost doubled the effective piece rate for tomatoes picked for these restaurants. They established a system for pass-through payments, under which participating restaurants agreed to pay a bonus of an additional penny per pound of tomatoes bought, which an independent accountant distributed to the pickers at the farm that the restaurant bought from. Each individual agreement makes a significant but relatively small increase in the worker's effective wages...[,] but each victory won means a concrete increase in wages, and an easier road to getting the pass-through system adopted industry-wide, which would in the end nearly *double* tomato-pickers' annual income.

Burger King held out for a while after this, following Taco Bell's earlier successive strategies of ignoring, stonewalling, slick PR, slander (denouncing farm workers as "richer than most minimum-wage workers," consumer boycotts as extortion, and C.I.W. as scam artists), and finally even an attempt at federal prosecution for racketeering.[3]

As Johnson predicted, the dirty tricks were of no avail. He followed up on this story in May 2008, when Burger King caved in. Especially entertaining, after the smear campaign and other dirty tricks carried out by the Burger King management team, was this public statement by BK CEO John Chidsey:

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1 Ezra Klein, "Why Labor Matters," *The American Prospect*, November 14, 2007 <http://www.prospect.org/csnc/blogs/ezraklein_archive?month=11&year=2007&base_name=why_labor_matters>.

2 "Say No to Schultz Mansion Purchase," Starbucks Union <http://www.starbucksunion.org/node/1903>.

3 Charles Johnson, "Coalition of Imolakee Workers marches in Miami," *Rad Geek People's Daily*, November 30, 2007 <http://radgeek.com/gt/2007/11/30/coalition_of/>.

> We are pleased to now be working together with the CIW to further the common goal of improving Florida tomato farmworkers' wages, working conditions and lives. The CIW has been at the forefront of efforts to improve farm labor conditions, exposing abuses and driving socially responsible purchasing and work practices in the Florida tomato fields. We apologize for any negative statements about the CIW or its motives previously attributed to BKC or its employees and now realize that those statements were wrong.[1]

Of course corporations are not entirely oblivious to these threats. The corporate world is beginning to perceive the danger of open-mouth sabotage, as well. For example, one Pinkerton thug almost directly equates sabotage to the open mouth, to the near exclusion of all other forms of direct action. According to Darren Donovan, a vice president of Pinkerton's eastern consulting and investigations division,

> [w]ith sabotage, there's definitely an attempt to undermine or disrupt the operation in some way or slander the company.... There's a special nature to sabotage because of the overtness of it—and it can be violent.... Companies can replace windows and equipment, but it's harder to replace their reputation.... I think that's what HR execs need to be aware of because it is a crime, but it can be different from stealing or fraud.[2]

As suggested by both the interest of a Pinkerton thug and his references to "crime," there is a major focus in the corporate world on identifying whistleblowers and leakers through surveillance technology, and on the criminalization of free speech to combat negative publicity.

And if Birmingham Wragge is any indication, there's a market for corporations that seek to do a Big Brother on anonymous detractors.

> Birmingham's largest law firm has launched a new team to track down people who make anonymous comments about companies online.
>
> The Cyber Tracing team at Wragge & Co was set up to deal with what the law firm said was a rising problem with people making anonymous statements that defamed companies, and people sharing confidential information online.
>
> And Wragge boasted the new team would ensure there was "nowhere to hide in cyberspace".
>
> The four-strong team at the Colmore Row firm is a combination of IT litigation and employment law specialists.
>
> One of the members of the team said redundancies and other reorganisations caused by the recession meant the numbers of disgruntled employees looking to get their own back on employers or former employers was also on the rise.
>
> Adam Fisher said: "Organisations are suffering quite a lot from rogue employees at the moment, partly because of redundancies or general troubles.
>
> "We have had a number of problematic cases where people have chosen to put things online or have shared information on their company email access."

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1 Coalition of Immokalee Workers. "Burger King Corp. and Coalition of Immokalee Workers to Work Together," May 23, 2008 <http://www.ciw-online.org/BK_CIW_joint_release.html>. Charles Johnson, "¡Sí, Se Puede! Victory for the Coalition of Imolakee Workers in the Burger King penny-per-pound campaign," *Rad Geek People's Daily*, May 23, 2008 <http://radgeek.com/gt/2008/05/23/si_se/>.

2 Jennifer Kock, "Employee Sabotage: Don't Be a Target!" <http://www.workforce.com/archive/features/22/20/88/mdex-printer.php>.

> He said much of the job involved trying to get Internet Service Providers to give out details of customers who had made comments online....
>
> A spokeswoman for Wragge said: “Courts can compel Internet Service Providers or telephone service providers to make information available regarding registered names, email addresses and other key account holder information.[1]

But if corporate managers think this will actually work, they're even stupider than I thought they were. Firms like Birmingham Wragge, and policies like RIAA lawsuits and “three strikes” cutoff of ISPs, will have only one significant effect: the rapid mainstreaming of proxy servers and encryption.

In late 2004 and 2005, the phenomenon of “Doocing” (the firing of bloggers for negative commentary on their workplace, or for the expression of other non-approved opinions on their blogs) began to attract mainstream media attention, and exemplified a specialized case of the Streisand Effect. Employers, who fired disgruntled workers out of fear for the bad publicity their blogs might attract, were blindsided by the far worse publicity–far, far worse–that resulted from news of the firing (the term “Doocing” itself comes from Dooce, the name of a blog whose owner was fired). Rather than an insular blog audience of a few hundred reading that “it sucks to work at Employer X,” or “Employer X gets away with treating its customers like shit,” it became a case of tens of millions of readers of the major newspapers of record and wire services reading that “Employer X fires blogger for revealing how bad it sucks to work at Employer X.” Again, the bosses are learning that, for the first time since the rise of the giant corporation and the broadcast culture, workers and consumers can talk back–and not only is there absolutely no way to shut us up, but we actually just keep making more and more noise the more they try to do so.[2]

There's a direct analogy between the Zapatista netwar and assymetrical warfare by labor and other anti-corporate activists. The Zapatistas turned an obscure and low-level military confrontation within an isolated province into a global political struggle. They waged their netwar with the Mexican government mostly outside Chiapas, isolating the authorities and pitting them against the force of world opinion. Similarly, networked labor activists turn labor disputes within a corporation into society-wide economic, political and media struggle, isolating corporate management and exposing it to swarming from an unlimited number of directions. Netwarriors choose their own battlefield.

The problem with authoritarianism like that of the Pinkertons and Birmingham Wragge, from the standpoint of the bosses and their state, is that before you can waterboard open-mouth saboteurs at Gitmo you've got to *catch them* first. If the litigation over Diebold's corporate files and emails teaches anything, it's that court injunctions and similar expedients are virtually useless against guerrilla netwar. The era of the SLAPP lawsuit is over, except for those cases where the offender is considerate enough to volunteer his home address to the target. Even in the early days of the Internet, the McLibel case turned into "the most expensive and most disastrous public-relations exercise ever mounted by a multinational company."[3] As we already noted, the easy availability of web anonymity, the "writeable web" in its various forms, the feasibility of mirroring shut-down websites, and the ability to replicate,

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1 Tom Scotney, “Birmingham Wragge team to focus on online comment defamation,” *Birmingham Post*, October 28, 2009 <http://www.birminghampost.net/birmingham-business/birmingham-business-news/legal-business/2009/10/28/birmingham-wragge-team-to-focus-on-online-comment-defamation-65233-25030203/>.

2 Todd Wallack, “Beware if your blog is related to work,” San Francisco Chronicle, January 25, 2005 <http://www.sfgate.com/cgi-bin.article.cgi?f=/c/a/2005/01/24/BIGCEAT1l01.DTL>.

3 “270-day libel case goes on and on...,” *Daily* Telegraph, June 28, 1996 <http://www.mcspotlight.org/media/thisweek/jul3.html>.

transfer, and store huge volumes of digital information at zero marginal cost, means that it is simply impossible to shut people up. The would-be corporate information police will just wear themselves out playing whack-a-mole. They will be exhausted and destroyed in exactly the same way that the most technically advanced army in the world was defeated by a guerrilla force in black pajamas.

Whether it be disgruntled consumers, disgruntled workers, or networked public advocacy organizations, the basic principles are the same. Jon Husband, of *Wirearchy* blog, writes of the potential threat network culture and the free flow of information pose to traditional hierarchies.

> Smart, interested, engaged and articulate people exchange information with each other via the Web, using hyperlinks and web services. Often this information... is about something that someone in a position of power would prefer that other people (citizens, constituents, clients, colleagues) not know....
>
> The exchanged-via-hyperlinks-and-web-services information is retrievable, re-usable and when combined with other information (let's play connect-the-dots here) often shows the person in a position of power to be a liar or a spinner, or irresponsible in ways that are not appropriate. This is the basic notion of transparency (which describes a key facet of the growing awareness of the power of the Web)....
>
> Hyperlinks, the digital infrastructure of the Web, the lasting retrievability of the information posted to the Web, and the pervasive use of the Web to publish, distribute and transport information combine to suggest that there are large shifts in power ahead of us. We have already seen some of that .. we will see much more unless the powers that be manage to find ways to control the toings-and-froings on the Web.
>
> ....[T]he hoarding and protection of sensitive information by hierarchical institutions and powerful people in those institutions is under siege....[1]

Chris Dillow, of *Stumbling and Mumbling* blog, argues we're now at the stage where the leadership of large, hierarchical organizations has achieved "negative credibility." The public, in response to a public statement by Gordon Brown, seemingly acted on the assumption that the truth was the direct opposite.

> Could it be that the ruling class now has negative credibility? Maybe people are now taking seriously the old *Yes, Minister* joke—that one should never believe anything until it's officially denied.
>
> If so, doesn't this have serious implications? It means not merely that the managerial class has lost one of the weapons it can use to control us, but that the weapon, when used, actually fires upon its user.[2]

Thanks to network culture, the cost of “manufacturing consent” is rising at an astronomical rate. The communications system is no longer the one described by Edward Herman, with the state and its corporate media allies controlling a handful of expensive centralized hubs and talking to us via one-way broadcast links. We can all talk directly to each other now, and virally circulate evidence that calls the state’s propaganda into doubt. For an outlay of well under $1000, you can do what only the White House Press Secretary or a CBS news anchor could do forty years ago. The forces of freedom will be able to contest the corporate state’s domination over public consciousness, for the first time in many decades, on even terms.

We have probably already passed a "singularity," a point of no return, in the use of networked

1 Jon Husband, "How Hard is This to Understand?" *Wirearchy*, June 22, 2007 <http://blog.wirearchy.com/blog/_archives/2007/6/22/3040833.html>.

2 Chris Dillow, “Negative Credibility,” *Stumbling and Mumbling*, October 12, 2007 <http://stumblingandmumbling.typepad.com/stumbling_and_mumbling/2007/10/negative-credib.html>.

information warfare. It took some time for employers to reach a consensus that the old corporate liberal labor regime no longer served their interests, and to take note of and fully exploit the union-busting potential of Taft-Hartley. But once they began to do so, the implosion of Wagner-style unionism was preordained. Likewise, it will take time for the realization to dawn on workers that things are only getting worse, that there's no hope in traditional unionism, and that in a networked world they have the power to bring the employer to his knees by their own direct action. But when they do, the outcome is also probably preordained. The twentieth century was the era of the giant organization. By the end of the twenty-first, there probably won't be enough of them left to bury.