After capitalism

Geoff Mulgan

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> The era of transition that we are entering will be disruptive—but it may bring a world where markets are servants, not masters

The US banking system faces losses of over $3,000bn. Japan is in a depression. China is headed for zero growth. Some still hope that urgent surgery can restore the status quo. But more feel that we are at one of those rare points of inflection when nothing is the same again.

But if one dream is over, what other dreams wait in the shadows? Will capitalism adapt? Or should we be asking again one of the great questions which has animated political life for nearly two centuries: what might come after capitalism?
Only a few years ago that question had been parked, deemed about as sensible as asking what would come after electricity. Global markets had pulled China and India into their orbit, and capitalism's triumph appeared complete, with medievalist Islam and the ragged armies that surround the G8 summits jostling to be its last enfeebled competitor. Multinational companies were said to command empires greater than most nation states, and in some accounts had won the affiliation of the masses through their brands.

Yet the lesson of capitalism itself is that nothing is permanent—"all that is solid melts into air" as Marx put it. Within capitalism there are as many forces that undermine it as there are forces that carry it forward.

In this essay I look at what capitalism might become on the other side of the slump. I predict neither resurgence nor collapse. Instead I suggest an analogy with other systems that once seemed equally immutable. In the early decades of the 19th century the monarchies of Europe appeared to have seen off their revolutionary challengers, whose dreams were buried in the mud of Waterloo. Monarchs and emperors dominated the world and had proven extraordinarily adaptable. Just like the advocates of capitalism today, their supporters then could plausibly argue that monarchies were rooted in nature. Then it was hierarchy which was natural; today it is individual acquisitiveness. Then it was mass democracy which had been experimented with and shown to fail. Today it is socialism that is seen in the same light, as a well-intentioned experiment that failed because it was at odds with human nature.

What happened to the military is another useful frame for thinking about capitalism's future. We are only a few generations from societies where the military stood at the apex of status and respect. War was part of the natural order, the inevitable way to resolve disputes. Yet, against all odds, in much of the world armies were tamed and civilised, turned from often cruel masters into professional servants.

I do not suggest that capitalism will disappear any more than war has. Complex, interconnected market economies will continue to generate huge surpluses, fuelled by the continuing flow of new scientific knowledge. But just as monarchy moved from centre stage to become more peripheral, so capitalism will no longer dominate society and culture as much as it does today. Capitalism may, in short, become a servant rather than a master, and the slump will accelerate this change. Past depressions were cruel but they also hurled ideas from the margins up into the mainstream, speeding their motion through the three stages that Schopenhauer described happening to all new truths, being first ridiculed, then violently opposed, then treated as self-evident.

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To understand what capitalism might become we first have to understand what it is. This is not so simple. Capitalism includes a market economy, but many traditional market economies are not capitalistic. It includes trade but trade, too, long precedes capitalism. It includes capital—but Egyptian ph araohs and fascist dictators commanded surpluses too.

The French historian Fernand Braudel offered perhaps the best description of capitalism when he wrote of it as a series of layers built on top of the everyday market economy of onions and wood, plumbing and cooking. These layers, local, regional, national and global, are characterised by ever greater abstraction, until at the top sits disembodied finance, seeking returns anywhere, uncommitted to any particular place or industry, and commodifying anything and everything. Capitalism became an "ism" when the vigorous banking and trade of Genoa and Venice, London and Bruges, combined with inventive manufacturing to create a world where the holders of abstracted capital became dominant, displacing the many other contenders for pole position, from warriors and scholars to bureaucrats and makers of things.

There have been more embedded versions of capitalism too on the path to today's hedge funds and derivatives. They have included close alliances with the state (40 per cent of the investment in Silicon Valley came from government), the rule of great industrial combines (as in Korea), and the strange hybrids of mercantilist communist capitalism in China and tycoon-led capitalism of southeast Asia. There have been buccaneering free markets—like the US in the 19th century—and highly socialised ones like Switzerland in the 20th.

But as Karl Marx predicted, capitalism is expansive: 19th-century capitalists bought politicians, art collections, landscapes and universities with equal relish. Contemporary capitalism is at ease with corporate sponsorship, diamond skulls and old masters, as well as software programs and space travel. Its methods have spread into healthcare, land management, and charity (though "philanthrocapitalism," the idea that the rich can save the world, may not survive the crisis). Anything can be turned into a commodity to be bought and sold—from sex to art and religion—and capitalism has been nothing if not inventive. Even climate change has turned into a potential boom for capitalism, with taxpayers subsidising new waves of R&D, and governments persuaded to sponsor carbon markets which give traders, brokers and investors yet another way to grow rich.

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The expansive and creative character of capitalism encouraged both Davos man, and his radical critics, to assume that big capitalism would inevitably become even bigger—ever more entwined with politics and culture. At a time when seven year olds were being recruited to sell Barbie dolls on commission to their friends this view seemed plausible. Through everything from mind-changing drugs to computer games and extreme sports, capitalism seemed to be reaching into deep human desires as only religions had done in the past.

Yet only a few decades ago there was great interest in what would supersede capitalism. The answers ranged from communism to managerialism, and from hopes of a golden age of leisure to dreams of a return to community and ecological harmony. Today these utopias can be found in the movements around the World Social Forum, on the edges of all of the major religions, in the radical sub-cultures that surround the net, and in moderated form in thousands of civic ventures across the world. They are bound to find new adherents. But their weakness and the weakness of much contemporary anti-capitalist literature (from David Korten, Wendell Berry, Alain Lipietz or Michael Albert) is that they offer little account of how their visions might be realised and how powerfully entrenched interests would be overcome.

Marxism's intellectual strength, by contrast, came from its claim that capitalism was not the all-powerful system portrayed by writers like Michael Hardt and Antonio Negri today, but was rather a system that was bound to destroy itself. In the Marxist account technological development would be the driver of change, becoming revolutionary through the contradictions between the forces and relations of production. In the 19th century the mechanism was expected to be the impoverishment of the proletariat; in the 20th century's revised accounts it would be the empowerment (or on some accounts the proletarianisation) of the knowledge workers. Either way capitalism would spawn its own gravediggers.

The fact that this didn't happen, and that capitalism instead spread wealth on a vast scale, has pushed Marxism to the edges, to protest parties like France's new Nouveau parti anticapitaliste, or the pacified academic arguments of a Marxism that merges into the abstractions of literary theory.

But restless capitalism has continued to give grounds for believing that it might destroy itself. A generation ago the American social scientist Daniel Bell, wrote of the "cultural contradictions of capitalism," arguing that capitalism would erode the traditional norms on which it rests—willingness to work hard, to pass on legacies to children, to avoid excessive hedonism. Japan in the 1990s was a good case in point—its slacker teenagers rejecting their parents' work ethic that had driven the economic miracle.

Related arguments have presented demography as the Achilles heel. Capitalist materialism has undermined the incentives for people to have children, sacrificing income and pleasure for the hard grind of family life. (And meritocracy further encourages parents to lavish their ambitions for advancement on just one or two children.) Hence the sharply reduced birthrates across Europe and among white Americans. At some point the resulting demographic imbalances threaten to undermine the generational contract which any society depends on, with a growing group of the elderly demanding ever more from a shrinking group of younger workers. The collapse of the savings rate—to around zero by 2007 in the US when it needs to be closer to 30 per cent to cope with ageing, is a stark symptom of a capitalism that has lost the ability to protect its own future. (Ironically, China despite its high savings rate, may be even more at risk, as the one-child policy transforms it from a young to an old country faster than as ever happened before in human history.)

Other critiques have emphasised capitalism's vulnerability to success. Extraordinary productivity gains in manufacturing reduce its share of GDP, leaving economies more dependent on services which are inherently harder to grow. There's a matching vulnerability in consumption. Having successfully met people's material needs, capitalism is threatened if they then lose interest in working hard and making money, turning instead to new age counselling, mid-life gap years and three-day weekends. Capitalism's only response is to invest ever more in creating new needs fuelled by anxiety about status, or beauty and body mass, a perverse result that may make developed capitalist societies more psychologically troubled than their poorer counterparts.

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All of the these critiques have hit some of their targets, though none gives much sense of how capitalism's contradictions might be resolved. Nor do they say much about the turbulent dynamics of capital itself. To find insights into how the current crisis might connect to these longer-term trends we need to look not to Marx, Keynes or Hayek but to the work of Carlota Perez, a Venezuelan economist whose writings are attracting growing attention.

Perez is a scholar of the long-term patterns of technological change. In Perez's account economic cycles begin with the emergence of new technologies and infrastructures that promise great wealth; these then fuel frenzies of speculative investment, with dramatic rises in stock and other prices. During these phases finance is in the ascendant and laissez faire policies become the norm. The booms are then followed by dramatic crashes, whether in 1797, 1847, 1893, 1929 or 2008. After these crashes, and periods of turmoil, the potential of the new technologies and infrastructures is eventually realised, but only once new institutions come into being which are better aligned with the characteristics of the new economy. Once that has happened, economies then go through surges of growth as well as social progress, like the belle époque or the postwar miracle.

Before the great depression the elements of a new economy and a new society were already available—and encouraged the speculative bubbles of the 1920s. But they were neither understood by the people in power, nor were they embedded in institutions. Then, during the 1930s, the economy transformed, in Perez's words, from one based on "steel, heavy electrical equipment, great engineering works and heavy chemistry… into a mass production system catering to consumers and the massive defence markets. Radical demand management and income redistribution innovations had to be made, of which the directly economic role of the state is perhaps the most important." What resulted was the rise of mass consumerism, and an economy supported by new infrastructures for electricity, roads and telecommunications. During the 1930s it wasn't clear which institutional innovations would be most successful (fascism, communism and corporatism were all contenders), but after the second world war a new model of state regulated capitalism emerged characterised by suburbs and motorways, welfare states and macroeconomic management, which underpinned postwar growth.

Seen in this light the great depression was both a disaster and an accelerator of reform. It helped to usher in new economic and welfare policies in countries like New Zealand and Sweden that later became the mainstream across the developed world. In the US it led to banking reform, the New Deal and the GI Bill of Rights. In Britain depression, as much as war, led to the creation of the welfare state and the NHS.

One implication of Perez's work, and of Joseph Schumpeter's before her, is that some of the old has to be swept away before the new can find its most successful forms. Propping up failing industries is in this light a risky policy. Perez suggests that we may be on the verge of another great period of institutional innovation and experiment that will lead to new compromises between the claims of capital and the claims of society and of nature. In retrospect these periodic accommodations are as integral to capitalism as financial crises—indeed it's only through crisis and institutional reform that capitalism adapts to a changing environment and rediscovers the moral compass that is so vital for markets to work well. The late 19th century accommodation came in response to fear of revolution and gave us state pensions, universal schooling, trade unions and universal suffrage, putting paid to the ideals of 19th-century liberalism. A second accommodation came 50 years later out of depression and war, and made variants of social and Christian democracy the norm in every rich country, pushing up states' share of GDP and introducing visible hands to guide the markets' invisible one.

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If another great accommodation is on its way, this one will be shaped by the triple pressures of ecology, globalisation and demographics. Forecasting in detail how these might play out is pointless and, as always, there are as many malign possibilities as benign ones, from revived militarism and autarchy to stigmatisation of minorities and accelerated ecological collapse. But the new technologies—from high speed networks to new energy systems, low carbon factories to open source software and genetic medicine—have a connecting theme: each potentially remakes capitalism more clearly as a servant rather than a master, whether in the world of money, work, everyday life or the state.

Capital itself is a good place to start. One of the oddities of the contemporary economy is that the systems of capital allocation have become so divorced from the real economy. Most funding for new scientific knowledge comes from governments, not markets, and most funding for the big companies producing goods, technologies and services is internally generated, rather than coming from stock markets. Meanwhile most of the work of financial markets has involved finance capital taking positions against itself, hedging and betting with instruments of ever greater opacity.

Even before the crisis there were many counter tendencies, all trying to re-establish capital as a servant of the real economy and to force greater transparency. They had both practical justifications (market risk is amplified the more degrees of separation there are between prices of financial assets and underlying value), and moral ones (the more degrees of separation there are, the less possible it is for markets to act with moral responsibility). The many moves in this direction include the still tentative attempts to make pension fund investments more accountable for their social and environmental effects (for example through big US funds like CalPERS or Calvert); the arguments that stock exchanges should police the transparency and integrity of their investors; the plans to outlaw offshore tax havens; the slow but steady rise of a social investment industry (which now accounts for a tenth of invested assets in the US); and the growth of genuine venture capital that takes risks on new ideas and technologies (sadly, most of the British industry wouldn't meet that definition). We are also again hearing arguments for publicly owned banks to finance housing, infrastructure or innovation, for Tobin taxes and higher capital gains tax for short-term investments. When Britain's government tires of owning banks it may even decide that they would survive better as mutuals than plcs.

Another intriguing part of this story is the growth of capital in the hands of trusts and charities, which now face the dilemma of whether to use their substantial assets (£50bn in Britain) not just to deliver an annual dividend but also to reflect their values. Bill Gates found himself at the sharp end of this dilemma when critics pointed out that the vast assets of his foundation were often invested in ways that ran counter to what it was seeking to achieve through its spending.

Even money itself may be rethought. The privileges that accompany the ability to create money will come in future with more responsibilities, but we may also see more enthusiasm for alternative currencies that are more embedded, like the local currencies in Germany or timebanks.

Consumption is the second place where the signs of change are unmistakable. In the high debt countries (including the US and Britain) there will simply have to be less of it, and more saving. It's an irony that so many of the measures taken to deal with the immediate impact of the recession, like VAT cuts and fiscal stimulus packages, point in the opposite direction to what's needed long term. But there are already strong movements to restrain the excesses of mass consumerism: slow food, the voluntary simplicity movement and the many measures to arrest rising obesity, are all symptoms of a swing towards seeing consumerism less as a harmless boon and more as a villain. The mayor of Sao Paolo, Gilberto Kassab, banned all billboards in 2006. David Cameron has railed against toxic capitalism corrupting young children, as well as toying with the idea of personal carbon accounts to limit high carbon lifestyles. Reinforcing these trends are shifts in the balance of the economy away from products and services, towards a "support economy" based on relationships and care (from nurseries and therapy to weekly organic food deliveries). Networked technologies help this trend, and on the edge of the market there is a growing subculture of clubs that bring together consumers to buy their own producers (Ebbsfleet United is an example here in Britain: a football club now owned by some 20,000 fans, brought together on the web, that won the FA Trophy last year).

Mirroring these changes are shifts in how things are made, as capitalism moves away from the destruction of nature to something closer to balance with it. Visit the BMW factories in Germany and you can see a new model of capitalism which attempts to reuse all the materials that go to make up a car. These production systems are pointers to a different ideal of manufacturing which will be celebrated in the Shanghai 2010 Expo where the world's fastest growing economy will present a low-carbon vision of capitalism very different from the version that China has embraced over the last two decades.

Knowledge too is dividing between capitalist models and cooperative alternatives. A decade ago, every government's industrial policies put a premium on the creation and protection of intellectual property. Universities were forced to commercialise their ideas, on the grounds that without financial incentives there would be no way to galvanise biotechnology or the next generation of artificial intelligence. Yet against expectations different models have thrived as well. A high proportion of the software used in the internet is open source. The creative commons approach is gaining ground in culture as an alternative to traditional copyright and Wikipedia has become an unlikely symbol of post-capitalism.

The third place we should look for changes is the world of work. The varieties of work experience are vast, with huge disparities of pay, fulfilment and power. In some sectors the slump will give new momentum to the old idea that workers should employ capital rather than vice versa. Cooperatives like the Mondragon group (which has over 100,000 employees and has doubled in size each decade) and employee-owned firms like John Lewis, have thrived. In other sectors, too, there has been a long-term trend towards more people wanting work to be an end as well as a means, a source of fulfilment as well as earnings. The decisive issue here, however, is whether capitalism can find a new accommodation with the family. Capitalism is being brought ever more intensively into family life, and many of the areas of greatest prospective employment growth are on the periphery of the family, in health and care. But everywhere there are also signs of a tense divide between work and family as a rising proportion of employees, especially women, have to simultaneously care for young infants and ageing parents. Volumes of evidence now confirm the vital role that families play in nurturing the skills and attitudes of future citizens, yet we are still far short of a new architecture of rights and flexibilities.

Many of these changes are forcing states to consider once again how to socialise new risks. The last two accommodations—of the late 19th century and the mid 20th century—were at root about risk, as governments took on the task of protecting people against the risks of poverty in old age, ill-health and unemployment. China looks set to catch up with the west in this respect; it desperately needs to create a viable welfare state and health service if the Communist party is to remain legitimate, and contain a political backlash against capitalistic excesses. Elsewhere the battleground will be care. As populations age it is in principle feasible for everyone to insure themselves, and even for that insurance to be calibrated to DNA results and lifestyles. But experience suggests that it is hard to design insurance markets for care that are both efficient and seen to be fair. For the majority the gulf between what's needed and what's on offer is widening, as life expectancy continues to rise and disability becomes the norm. Within a generation we may be on the threshold of a major expansion of collective provision, born of our shared vulnerability to disability, dementia and being left without children or spouses to look after us. That provision will be shaped by access to far more accurate information about individual dispositions, or the effectiveness of treatments, and it will undoubtedly make use of business capabilities. But it is highly unlikely to be capitalistic.

Governments may also be drawn further into financial services. So far the financial services industry has been remarkably slow to offer products better fitted to contemporary needs—like variable mortgages that can be put on hold for periods out of work. But some governments (such as Denmark and Singapore) have created personal budget accounts for citizens, and it's not hard to imagine some offering services where people can borrow money for a period of retraining, parental leave or unemployment, and then repay through the tax system over 20 or 30 years, or through a charge on homes, with much lower transaction costs than the banks.

Personal welfare accounts; personal budgets in health; personal carbon allowances. All may turn out to be distinctive parts of the architecture of a reformed state that pools risks while also personalising its services. All may be part of new deals that combine new rights with greater obligations to save, to pay for health and education, and to share the costs that will come from greater flexibility at work.

The last great accommodations were about the state, and states are being pulled back into much more active roles as the recession bites. But some of the most important guarantees of security lie beyond the direct reach of government. In the US the proportion of people who say that they have no one to talk to about important issues has risen from 10 per cent to 25 per cent in 20 years. Contemporary biology and social science has confirmed just how much we are social animals—dependent on others for our happiness, our self-respect, our worth and even our life. There is no inherent contradiction between capitalism and community. But we have learned that these connections are not automatic: they have to be cultivated and rewarded, and societies that invest large proportions of their surpluses on advertising to persuade people that individual consumption is the best route to happiness end up paying a high price.

That our social relationships matter as much as our income may change how politics is thought about. The short-term effect of the downturn will be to focus all attention on GDP's dispiriting decline. But the longer trend is towards seeing GDP as less important than other measures of social success, including well-being. Over the last year the OECD has mobilised a glittering array of Nobel prize winners to advise on what should come "beyond GDP": President Sarkozy has announced his eagerness to adopt some of their ideas and Obama will want measures of success that take account of health improvements, greener cities and better education rather than just measuring how much people have spent.

What also lies beyond GDP is a more pluralistic idea of how companies should be run. For decades the publicly quoted plc has been the norm. But the current crisis is reminding us that more diverse business forms can be more resilient. The building societies that didn't privatise have survived far better than those that did. Charities tend to survive recessions better than conventional businesses and Britain's 55,000 or so social enterprises may bounce back faster than firms without a social mission. Not surprisingly, the Conservatives are toying with policy ideas to strengthen credit unions and community investment funds, food cooperatives and energy service companies, all part of a search for an economic vision to replace the 1980s vision of big bang and privatised utilities.

Capitalism's crisis is, of course, a global one, and has shown up the limitations of the global institutions that took shape half a century ago. China is set to become a dominant player in a strengthened IMF and World Bank, followed by India and Brazil. The G20 is edging out the G8 as the club that matters. And waiting in the wings are possible new institutions to police and manage carbon, to handle everything from global migration to the regulation of biotechnology, alongside less formal institutions to help the world's public to engage, from e-parliaments to global campaigning platforms like Awaaz, an online newspaper.

No one can know which of these possibilities will come to fruition. There are in principle an infinite number of directions social systems can take. But history suggests that at key moments evolution is highly selective. Only a few models turn out to be sustainable, with an affinity to the prevailing technologies, values and power structures.

In the first phase of the crisis the most successful claimants for support have been the big, failing (and well-connected) industries of the last era of capitalism. But the arguments are moving on—to how recovery plans can back job growth, fixing the future (as in San Francisco's electric car infrastructures or Korea's massive green jobs programme) rather than trying to fix the mistakes of the past. It's not clear yet which politicians will be able to articulate a vision of a "servant capitalism" better suited to the 21st century. David Cameron has made some attempts—hard though that may sometimes be for the descendant of generations of stockbrokers. Gordon Brown is a son of the manse, but also deeply implicated in the crisis. Obama should be ideally suited to offering a new vision, yet has surrounded himself with champions of the very system that now appears to be crumbling.

The result is that a large political space is opening up. In the short run it is being filled with anger, fear and confusion. In the longer run it may be filled with a new vision of capitalism, and its relationship to both society and ecology, a vision that will be clearer about what we want to grow and what we don't. Democracies have in the past repeatedly tamed, guided and revived capitalism. They have prevented the sale of people, of votes, public offices, children's labour and body organs, and they have enforced rights and rules, while also pouring resources in to meet capitalism's need for science and skills, and it has been out of this mix of conflict and co-operation that the world has achieved the extraordinary progress of the last century.

To discover what comes next, maybe we should look upwards. Skylines provide the simplest test of what a society values, and where its surpluses are controlled. A few centuries ago the greatest buildings in the world's cities were forts, churches and temples; then for a time they became palaces. Briefly in the 19th century civic buildings, railway stations and museums overshadowed them. And then in the late 20th century everywhere they were banks. Few believe that they will be for much longer. But what will come next—great leisure palaces and sports stadiums; universities and art galleries; water towers and hanging gardens; or perhaps biotech empires? We need to rekindle our capacity to imagine, and to see through the still-gathering storm to what lies beyond.

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Marxism's intellectual strength, by contrast, came from its claim that capitalism was not the all-powerful system portrayed by writers like Michael Hardt and Antonio Negri today, but was rather a system that was bound to destroy itself. In the Marxist account technological development would be the driver of change, becoming revolutionary through the contradictions between the forces and relations of production. In the 19th century the mechanism was expected to be the impoverishment of the proletariat; in the 20th century's revised accounts it would be the empowerment (or on some accounts the proletarianisation) of the knowledge workers. Either way capitalism would spawn its own gravediggers.

The fact that this didn't happen, and that capitalism instead spread wealth on a vast scale, has pushed Marxism to the edges, to protest parties like France's new Nouveau parti anticapitaliste, or the pacified academic arguments of a Marxism that merges into the abstractions of literary theory.

But restless capitalism has continued to give grounds for believing that it might destroy itself. A generation ago the American social scientist Daniel Bell, wrote of the "cultural contradictions of capitalism," arguing that capitalism would erode the traditional norms on which it rests—willingness to work hard, to pass on legacies to children, to avoid excessive hedonism. Japan in the 1990s was a good case in point—its slacker teenagers rejecting their parents' work ethic that had driven the economic miracle.

Related arguments have presented demography as the Achilles heel. Capitalist materialism has undermined the incentives for people to have children, sacrificing income and pleasure for the hard grind of family life. (And meritocracy further encourages parents to lavish their ambitions for advancement on just one or two children.) Hence the sharply reduced birthrates across Europe and among white Americans. At some point the resulting demographic imbalances threaten to undermine the generational contract which any society depends on, with a growing group of the elderly demanding ever more from a shrinking group of younger workers. The collapse of the savings rate—to around zero by 2007 in the US when it needs to be closer to 30 per cent to cope with ageing, is a stark symptom of a capitalism that has lost the ability to protect its own future. (Ironically, China despite its high savings rate, may be even more at risk, as the one-child policy transforms it from a young to an old country faster than as ever happened before in human history.)

Other critiques have emphasised capitalism's vulnerability to success. Extraordinary productivity gains in manufacturing reduce its share of GDP, leaving economies more dependent on services which are inherently harder to grow. There's a matching vulnerability in consumption. Having successfully met people's material needs, capitalism is threatened if they then lose interest in working hard and making money, turning instead to new age counselling, mid-life gap years and three-day weekends. Capitalism's only response is to invest ever more in creating new needs fuelled by anxiety about status, or beauty and body mass, a perverse result that may make developed capitalist societies more psychologically troubled than their poorer counterparts.

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All of the these critiques have hit some of their targets, though none gives much sense of how capitalism's contradictions might be resolved. Nor do they say much about the turbulent dynamics of capital itself. To find insights into how the current crisis might connect to these longer-term trends we need to look not to Marx, Keynes or Hayek but to the work of Carlota Perez, a Venezuelan economist whose writings are attracting growing attention.

Perez is a scholar of the long-term patterns of technological change. In Perez's account economic cycles begin with the emergence of new technologies and infrastructures that promise great wealth; these then fuel frenzies of speculative investment, with dramatic rises in stock and other prices. During these phases finance is in the ascendant and laissez faire policies become the norm. The booms are then followed by dramatic crashes, whether in 1797, 1847, 1893, 1929 or 2008. After these crashes, and periods of turmoil, the potential of the new technologies and infrastructures is eventually realised, but only once new institutions come into being which are better aligned with the characteristics of the new economy. Once that has happened, economies then go through surges of growth as well as social progress, like the belle époque or the postwar miracle.

Before the great depression the elements of a new economy and a new society were already available—and encouraged the speculative bubbles of the 1920s. But they were neither understood by the people in power, nor were they embedded in institutions. Then, during the 1930s, the economy transformed, in Perez's words, from one based on "steel, heavy electrical equipment, great engineering works and heavy chemistry… into a mass production system catering to consumers and the massive defence markets. Radical demand management and income redistribution innovations had to be made, of which the directly economic role of the state is perhaps the most important." What resulted was the rise of mass consumerism, and an economy supported by new infrastructures for electricity, roads and telecommunications. During the 1930s it wasn't clear which institutional innovations would be most successful (fascism, communism and corporatism were all contenders), but after the second world war a new model of state regulated capitalism emerged characterised by suburbs and motorways, welfare states and macroeconomic management, which underpinned postwar growth.

Seen in this light the great depression was both a disaster and an accelerator of reform. It helped to usher in new economic and welfare policies in countries like New Zealand and Sweden that later became the mainstream across the developed world. In the US it led to banking reform, the New Deal and the GI Bill of Rights. In Britain depression, as much as war, led to the creation of the welfare state and the NHS.

One implication of Perez's work, and of Joseph Schumpeter's before her, is that some of the old has to be swept away before the new can find its most successful forms. Propping up failing industries is in this light a risky policy. Perez suggests that we may be on the verge of another great period of institutional innovation and experiment that will lead to new compromises between the claims of capital and the claims of society and of nature. In retrospect these periodic accommodations are as integral to capitalism as financial crises—indeed it's only through crisis and institutional reform that capitalism adapts to a changing environment and rediscovers the moral compass that is so vital for markets to work well. The late 19th century accommodation came in response to fear of revolution and gave us state pensions, universal schooling, trade unions and universal suffrage, putting paid to the ideals of 19th-century liberalism. A second accommodation came 50 years later out of depression and war, and made variants of social and Christian democracy the norm in every rich country, pushing up states' share of GDP and introducing visible hands to guide the markets' invisible one.

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If another great accommodation is on its way, this one will be shaped by the triple pressures of ecology, globalisation and demographics. Forecasting in detail how these might play out is pointless and, as always, there are as many malign possibilities as benign ones, from revived militarism and autarchy to stigmatisation of minorities and accelerated ecological collapse. But the new technologies—from high speed networks to new energy systems, low carbon factories to open source software and genetic medicine—have a connecting theme: each potentially remakes capitalism more clearly as a servant rather than a master, whether in the world of money, work, everyday life or the state.

Capital itself is a good place to start. One of the oddities of the contemporary economy is that the systems of capital allocation have become so divorced from the real economy. Most funding for new scientific knowledge comes from governments, not markets, and most funding for the big companies producing goods, technologies and services is internally generated, rather than coming from stock markets. Meanwhile most of the work of financial markets has involved finance capital taking positions against itself, hedging and betting with instruments of ever greater opacity.

Even before the crisis there were many counter tendencies, all trying to re-establish capital as a servant of the real economy and to force greater transparency. They had both practical justifications (market risk is amplified the more degrees of separation there are between prices of financial assets and underlying value), and moral ones (the more degrees of separation there are, the less possible it is for markets to act with moral responsibility). The many moves in this direction include the still tentative attempts to make pension fund investments more accountable for their social and environmental effects (for example through big US funds like CalPERS or Calvert); the arguments that stock exchanges should police the transparency and integrity of their investors; the plans to outlaw offshore tax havens; the slow but steady rise of a social investment industry (which now accounts for a tenth of invested assets in the US); and the growth of genuine venture capital that takes risks on new ideas and technologies (sadly, most of the British industry wouldn't meet that definition). We are also again hearing arguments for publicly owned banks to finance housing, infrastructure or innovation, for Tobin taxes and higher capital gains tax for short-term investments. When Britain's government tires of owning banks it may even decide that they would survive better as mutuals than plcs.

Another intriguing part of this story is the growth of capital in the hands of trusts and charities, which now face the dilemma of whether to use their substantial assets (£50bn in Britain) not just to deliver an annual dividend but also to reflect their values. Bill Gates found himself at the sharp end of this dilemma when critics pointed out that the vast assets of his foundation were often invested in ways that ran counter to what it was seeking to achieve through its spending.

Even money itself may be rethought. The privileges that accompany the ability to create money will come in future with more responsibilities, but we may also see more enthusiasm for alternative currencies that are more embedded, like the local currencies in Germany or timebanks.

Consumption is the second place where the signs of change are unmistakable. In the high debt countries (including the US and Britain) there will simply have to be less of it, and more saving. It's an irony that so many of the measures taken to deal with the immediate impact of the recession, like VAT cuts and fiscal stimulus packages, point in the opposite direction to what's needed long term. But there are already strong movements to restrain the excesses of mass consumerism: slow food, the voluntary simplicity movement and the many measures to arrest rising obesity, are all symptoms of a swing towards seeing consumerism less as a harmless boon and more as a villain. The mayor of Sao Paolo, Gilberto Kassab, banned all billboards in 2006. David Cameron has railed against toxic capitalism corrupting young children, as well as toying with the idea of personal carbon accounts to limit high carbon lifestyles. Reinforcing these trends are shifts in the balance of the economy away from products and services, towards a “support economy” based on relationships and care (from nurseries and therapy to weekly organic food deliveries). Networked technologies help this trend, and on the edge of the market there is a growing subculture of clubs that bring together consumers to buy their own producers (Ebbsfleet United is an example here in Britain: a football club now owned by some 20,000 fans, brought together on the web, that won the FA Trophy last year).

Mirroring these changes are shifts in how things are made, as capitalism moves away from the destruction of nature to something closer to balance with it. Visit the BMW factories in Germany and you can see a new model of capitalism which attempts to reuse all the materials that go to make up a car. These production systems are pointers to a different ideal of manufacturing which will be celebrated in the Shanghai 2010 Expo where the world’s fastest growing economy will present a low-carbon vision of capitalism very different from the version that China has embraced over the last two decades.

Knowledge too is dividing between capitalist models and cooperative alternatives. A decade ago, every government’s industrial policies put a premium on the creation and protection of intellectual property. Universities were forced to commercialise their ideas, on the grounds that without financial incentives there would be no way to galvanise biotechnology or the next generation of artificial intelligence. Yet against expectations different models have thrived as well. A high proportion of the software used in the internet is open source. The creative commons approach is gaining ground in culture as an alternative to traditional copyright and Wikipedia has become an unlikely symbol of post-capitalism.

The third place we should look for changes is the world of work. The varieties of work experience are vast, with huge disparities of pay, fulfilment and power. In some sectors the slump will give new momentum to the old idea that workers should employ capital rather than vice versa. Cooperatives like the Mondragon group (which has over 100,000 employees and has doubled in size each decade) and employee-owned firms like John Lewis, have thrived. In other sectors, too, there has been a long-term trend towards more people wanting work to be an end as well as a means, a source of fulfilment as well as earnings. The decisive issue here, however, is whether capitalism can find a new accommodation with the family. Capitalism is being brought ever more intensively into family life, and many of the areas of greatest prospective employment growth are on the periphery of the family, in health and care. But everywhere there are also signs of a tense divide between work and family as a rising proportion of employees, especially women, have to simultaneously care for young infants and ageing parents. Volumes of evidence now confirm the vital role that families play in nurturing the skills and attitudes of future citizens, yet we are still far short of a new architecture of rights and flexibilities.

Many of these changes are forcing states to consider once again how to socialise new risks. The last two accommodations—of the late 19th century and the mid 20th century—were at root about risk, as governments took on the task of protecting people against the risks of poverty in old age, ill-health and unemployment. China looks set to catch up with the west in this respect; it desperately needs to create a viable welfare state and health service if the Communist party is to remain legitimate, and contain a political backlash against capitalistic excesses. Elsewhere the battleground will be care.

As populations age it is in principle feasible for everyone to insure themselves, and even for that insurance to be calibrated to DNA results and lifestyles. But experience suggests that it is hard to design insurance markets for care that are both efficient and seen to be fair. For the majority the gulf between what's needed and what's on offer is widening, as life expectancy continues to rise and disability becomes the norm. Within a generation we may be on the threshold of a major expansion of collective provision, born of our shared vulnerability to disability, dementia and being left without children or spouses to look after us. That provision will be shaped by access to far more accurate information about individual dispositions, or the effectiveness of treatments, and it will undoubtedly make use of business capabilities. But it is highly unlikely to be capitalistic.

Governments may also be drawn further into financial services. So far the financial services industry has been remarkably slow to offer products better fitted to contemporary needs—like variable mortgages that can be put on hold for periods out of work. But some governments (such as Denmark and Singapore) have created personal budget accounts for citizens, and it's not hard to imagine some offering services where people can borrow money for a period of retraining, parental leave or unemployment, and then repay through the tax system over 20 or 30 years, or through a charge on homes, with much lower transaction costs than the banks.

Personal welfare accounts; personal budgets in health; personal carbon allowances. All may turn out to be distinctive parts of the architecture of a reformed state that pools risks while also personalising its services. All may be part of new deals that combine new rights with greater obligations to save, to pay for health and education, and to share the costs that will come from greater flexibility at work.

The last great accommodations were about the state, and states are being pulled back into much more active roles as the recession bites. But some of the most important guarantees of security lie beyond the direct reach of government. In the US the proportion of people who say that they have no one to talk to about important issues has risen from 10 per cent to 25 per cent in 20 years. Contemporary biology and social science has confirmed just how much we are social animals—dependent on others for our happiness, our self-respect, our worth and even our life. There is no inherent contradiction between capitalism and community. But we have learned that these connections are not automatic: they have to be cultivated and rewarded, and societies that invest large proportions of their surpluses on advertising to persuade people that individual consumption is the best route to happiness end up paying a high price.

That our social relationships matter as much as our income may change how politics is thought about. The short-term effect of the downturn will be to focus all attention on GDP's dispiriting decline. But the longer trend is towards seeing GDP as less important than other measures of social success, including well-being. Over the last year the OECD has mobilised a glittering array of Nobel prize winners to advise on what should come "beyond GDP": President Sarkozy has announced his eagerness to adopt some of their ideas and Obama will want measures of success that take account of health improvements, greener cities and better education rather than just measuring how much people have spent.

What also lies beyond GDP is a more pluralistic idea of how companies should be run.

For decades the publicly quoted plc has been the norm. But the current crisis is reminding us that more diverse business forms can be more resilient. The building societies that didn't privatise have survived far better than those that did. Charities tend to survive recessions better than conventional businesses and Britain's 55,000 or so social enterprises may bounce back faster than firms without a social mission. Not surprisingly, the Conservatives are toying with policy ideas to strengthen credit unions and community investment funds, food cooperatives and energy service companies, all part of a search for an economic vision to replace the 1980s vision of big bang and privatised utilities.

Capitalism's crisis is, of course, a global one, and has shown up the limitations of the global institutions that took shape half a century ago. China is set to become a dominant player in a strengthened IMF and World Bank, followed by India and Brazil. The G20 is edging out the G8 as the club that matters. And waiting in the wings are possible new institutions to police and manage carbon, to handle everything from global migration to the regulation of biotechnology, alongside less formal institutions to help the world's public to engage, from e-parliaments to global campaigning platforms like Awaaz, an online newspaper.

No one can know which of these possibilities will come to fruition. There are in principle an infinite number of directions social systems can take. But history suggests that at key moments evolution is highly selective. Only a few models turn out to be sustainable, with an affinity to the prevailing technologies, values and power structures.

In the first phase of the crisis the most successful claimants for support have been the big, failing (and well-connected) industries of the last era of capitalism. But the arguments are moving on—to how recovery plans can back job growth, fixing the future (as in San Francisco's electric car infrastructures or Korea's massive green jobs programme) rather than trying to fix the mistakes of the past. It's not clear yet which politicians will be able to articulate a vision of a "servant capitalism" better suited to the 21st century. David Cameron has made some attempts—hard though that may sometimes be for the descendant of generations of stockbrokers. Gordon Brown is a son of the manse, but also deeply implicated in the crisis. Obama should be ideally suited to offering a new vision, yet has surrounded himself with champions of the very system that now appears to be crumbling.

The result is that a large political space is opening up. In the short run it is being filled with anger, fear and confusion. In the longer run it may be filled with a new vision of capitalism, and its relationship to both society and ecology, a vision that will be clearer about what we want to grow and what we don't. Democracies have in the past repeatedly tamed, guided and revived capitalism. They have prevented the sale of people, of votes, public offices, children's labour and body organs, and they have enforced rights and rules, while also pouring resources in to meet capitalism's need for science and skills, and it has been out of this mix of conflict and co-operation that the world has achieved the extraordinary progress of the last century.

To discover what comes next, maybe we should look upwards. Skylines provide the simplest test of what a society values, and where its surpluses are controlled. A few centuries ago the greatest buildings in the world's cities were forts, churches and temples; then for a time they became palaces. Briefly in the 19th century civic buildings, railway stations and museums overshadowed them. And then in the late 20th century everywhere they were banks. Few believe that they will be for much longer. But what will come next—great leisure palaces and sports stadiums; universities and art galleries; water towers and hanging gardens; or perhaps biotech empires? We need to rekindle our capacity to imagine, and to see through the still-gathering storm to what lies beyond.

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