7 Transforming the economy

In today's society, things are produced in anticipation of buyers coming forward to purchase at a price which results in a profit being made. Part of this profit is distributed to the shareholders, who provide the capital investment and become part-owners of the company. When a company's fortunes decline, or it makes a loss, its shareholders are likely to withdraw their funds and invest in one with better prospects. This is what defines capitalist society. Investors invest – buy and own shares – expecting to receive a proportion of the gains made. When stripped right down to its essence, in capitalist society the rule is: no profit, no production.

Of course many things are produced and many people do things which are not intended to be profitable or do not directly lead to a profit. But, in general, the tendency is always to subordinate these to the main line. Competition amongst companies in a capitalist economy requires them to make their products more attractive to potential consumers than those of their competitors. There are several tactics used: reducing the price charged; making broadly equivalent products appear different and more attractive; bringing new products to the marketplace to satisfy unmet demands, and stimulating new demands; or undermining, weakening and then either buying up or finally destroying the competitor. The giant transnational corporations (TNCs) use all these methods to their fullest extent.

The heart of the whole process of making profit is the ability

of workers – including managers – to add more value to inputs during the working day than the total cost of their employment to the firm. The difference between the total cost of labour and the value added by workers is called *surplus value*. For example, steel, glass, upholstery and other materials and components enter a car plant as a variety of inputs. Through the blood, sweat, tears and skills of labour, they come out as higher value cars. The value added, which is the source of profit, comes from the hours of labour put in by the employees, managers, sub-contractors – all those who actively contribute to the production and distribution of the end-products which appear in the shops, market stalls, supermarket shelves, mail-order catalogues and websites. Part of surplus value is paid as rent to landowners and a part is profit, which in capitalist society is distributed to shareholders.

So the key to defending profits in an era of fierce competition is the pressure to reduce the cost of production. Costs of production include labour, which also means management, machinery, commodities bought from suppliers, distribution including holding stock, and communication. Obviously, reducing costs means paying less for inputs. This can be achieved in a number of ways: paying less for commodities bought in, increasing the quantity of commodities produced by the same labour force (productivity), through capital investment, training, pushing employees into a longer working day, cutting wages or a faster/higher rate of working. Other ways to achieve the same result include cutting benefits such as pensions, holiday pay, and by transfer of production to lower wage areas. Much of the drive to globalise production has come from these pressures.

Hence the unending search for ever-cheaper sources of labour and the leap-frogging of investment from developed countries like the US, UK and Japan, to Mexico, the Philippines, Malaysia, and Indonesia in the 1990s, and from there to China in the early years of the 21st century. Labour costs are higher in areas where employees have organised in trade unions. The concentration of workers which is taking place now in China is creating opportunities for them to become organised, but until this happens their working conditions and wages will remain far

What's in a brand

In 2004, HSBC, "the world's local bank", consolidated its advertising campaign as part of its drive to enter the first division of global corporations. In ten years it grew from a regional bank in Asia with 30,000 employees, to one of the most global of banks, with more than $1 trillion in assets, nearly 10,000 offices and 300,000 employees. It is now the second-largest financial institution, and the eighth-largest corporation in the world.

Now, in the intensifying pressure of globalisation, HSBC switched its $600m a year advertising account from more than 200 different agencies around the world to a single company able to handle all of its commercial communications in every one of the 79 countries in which it operates. Probably 90% of that $600 million will go to media owners, such as newspapers, magazines and TV stations.

HSBC's demand for a unified, global presence placed extraordinary pressures on the bidders. WPP the agency which eventually won, had 700 of its staff from New York to Kuala Lumpur involved in making the pitch, presenting a united front that showed that they could work together seamlessly. Hundreds or even thousands throughout the world will work on the account. WPP will make perhaps $8m profit on its $60 million fees and commissions. Its success in gaining HSBC's business threatened to destroy the InterPublic Group, parent of its competitor agency Lowe, and the world's third largest advertising group.

below those established elsewhere over many decades.

While pressure groups in the US and elsewhere have forced companies to pay some attention to the worst excesses, the irresistible demands of profit-making ensure that wages and working conditions can only be described as super-exploitation when compared to those previously won by organised workers in the older industrialised countries.

Though much of the cost reduction is intended to defend and increase profits, and keep the shareholders' hands in the till, the overall result is entirely the opposite. As productivity is driven up, and investment in automation replaces human labour, more and more commodities are churned out. For a while, as long as the market is large enough for the commodities to be sold, the

Doc Martens puts the boot in

Until 2003, Dr Martens' boots were made in Britain and sold to generations of punks, skinheads as well as their traditional market of manual workers and policemen. Now production is sub-contracted to factories owned by Pou Chen and Golden Chang, Taiwanese companies that moved to the mainland. Pou Chen's plants, one in Zhuhai and one in Dongguan, employ 110,000 people and churn out 100m pairs of shoes a year for Nike, Adidas, Caterpillar, Timberland, Hush Puppy, Reebok, Puma and others. Production on this scale requires buildings that would have challenged the most ambitious Lancashire mill owner during Britain's industrial revolution. Tens of thousands of young women hired from all over rural China work on bustling production lines that snake through a series of long, five-storey buildings. Dr Martens' Northampton factory used 20th century production techniques. Small groups of workers assembled complete shoes to reduce inventory costs. Pou Chen uses mass production techniques little changed from Henry Ford's days. In 2003, Dr Martens paid its 1,100 UK workers about $490 a week and had built a stadium for the local football club. Pou Chen was paying about $96 a month, or 36 cents an hour, for up to 69 hours a week. The migrant workers sleep in dormitories and must obey strict curfews.

Financial Times, 4 February 2003

individual companies can increase their returns.

But the general tendency throughout the global economy is for the rate of profit to fall. In attempting to overcome it, capitalist society tears itself apart, setting owners and managers against their employees, producing ecological disasters, provoking discontent and reaction and inducing fraud on a global scale. Without sales, the surplus value contained within the commodity is not realised. The cost of storing and in due course disposing of unsold stock, continues to add to the overall cost of production.

As competition intensifies, the commodities pour off the production line, warehouses become full to bursting as the unsold products amass, and so the pressure to sell builds up. Inevitably, marketing based on accurate information gives way to

exaggerated claims and these in turn give way to fraudulent campaigns which endanger the health of millions. The pressure to sell more and more lies behind the increasing risk to health from the food we buy.

The need to reduce costs obliges competing firms to use all methods available. This drives them to research, seek out and adopt every new technological advance, and every step forward in management technique. In this way, the production process is constantly revolutionised. Huge leaps in productivity result in an ever-larger volume of ever-cheaper commodities.

So, the tendency of competition is to encourage increased investment in automation, and, consequently, in the part going into machinery and other forms of fixed capital in relation to the number of people employed (variable capital). This has serious and inescapable consequences for those shareholders expecting to benefit. The smaller proportion of people employed in relation to fixed capital reduces that portion of funds invested in labour, the source of surplus value, and so puts downward pressure on the rate of profit. This in turn requires further investment and another cycle begins. Increased productivity produces over-capacity, and the surge of cheap commodities overwhelms the available market.

This contradiction is both the motor of growth, and the cause of crisis. Globalisation – the escalating expansion of capital – is both the result of this contradiction, and the source of its own systemic crises and collapses. Gross Domestic Product (GDP) measures growth – the value of new goods and services produced within the borders of a country in a year. It is used as an indicator of the success or failure of an economy. For the world as a whole, therefore, global GDP can be used as a measure of the success of globalisation in resolving this contradiction.

For the period between 1961 and 2003, world GDP per capita growth has been slowing. It is striking that since 1990, the period in which globalisation has been most pronounced, growth measured by global GDP has been slower than in previous decades. In attempting to escape the consequences of falling profits, every route must be followed and new ones developed. Capitalist corporations do not just take scientific advances and

new inventions and use them to improve existing commodities – goods for sale – or produce entirely new ones. They also turn freely usable things into commmodities. Everyday and extreme forms of this include water, genetic structures, and naturally-occurring life-forms. Bars in America have sold oxygen alongside the spirits, beer, wine and non-alcoholic drinks. The patenting of air cannot be far behind.

The China syndrome

Recent experience in China highlights the central paradox of globalising capital. The seemingly infinite availability of low-cost labour tempts TNCs to invest. Cheap capital from Chinese state banks from privatising state-owned utilities over the past few years has also encouraged the growth of local companies. The giant sell-off has resulted in mass sackings, tending to reduce the price of labour even further. Yet new and expanding companies have often found it cheaper to spend money on mechanisation than to recruit and train workers. This has resulted in a fall in the number of jobs created per percentage point in GDP growth, and the number of urban unemployed is rising.

Rapid growth in the designated enterprise zones and beyond is fuelled by inward investment as TNCs chase new opportunities for profit, transferring production from places as remote from each other as the US and Malaysia.

The world's boom has produced global shortages of oil, steel and other commodities including food staples. Prices of raw materials are driven sharply up, whilst low wages and efficient supply chains mean that prices of manufactured goods plummet. In 2003, the factories that are turning China into the new sweatshop of the world consumed 7% of global oil consumption, 27% of steel, 31% of coal and 40% of cement, 21% of the world's traded aluminium, 24% of its zinc, 28% of its iron ore and 23% of its stainless steel.

In a bizarre reversal of fortunes, the country is obliged to fund the purchase of its output. Just as the governments of more advanced capitalist countries favour less wealthy nations with "aid" to buy arms and other products, today China buys government bonds from the US, by far its largest market.

In 2003, China surpassed the US as the world's top destination for foreign direct investment, attracting £32 billion. In 2004, it became Japan's and South Korea's largest trading partner. If official figures are accurate, the annual growth rate of 8.6% of gross domestic product since 1980 registers a pace that constitutes the most striking economic transformation in human history. Its scale and rapidity towers over the British Industrial Revolution of the 19th century.

China today provides an object lesson in the essentials of capitalist production. Through uncontrolled expansion and self-reproduction, massive over-investment produces and reproduces a supply of commodities which flood world markets. Unconscious, unplanned expansion fuelled by finance capital in a helter-skelter chase after profit, demonstrates and proves the insane and anarchic logic of globalised capitalism. Chronic oversupply has created a cauldron of industrial competition which pits Chinese manufacturers against competitors both at home and in South East Asia.

Price wars produce falling profit margins on their core products and push many companies into scattergun efforts to diversify. Midea, an air-conditioner maker, launched six new product ranges: bread-makers, coffee pots, refrigerators, dishwashers and smoke extractors. Lifan, a big motorbike maker has expanded into buses, mineral water, paint thinner, imported wine, newspapers, a football team and duck-down garments. It also wanted to open a bank. The wastefulness of such competition-driven investment is eloquently expressed by a single statistic: of all Chinese manufactured products, 90% are in oversupply, and there is a shortage of nothing, according to the National Statistics Bureau.

The inevitable wave of bankruptcy is postponed, temporarily, as the government fears social chaos. But two measures indicate the scale of the looming debt crisis waiting to detonate the banking sector. Officially, non-performing loans – a polite expression for when borrowers are unable to make repayments – amount to 20% of the total. But the international rating agency, Standard and Poor puts the figure much higher – at 45%, which accounts for more than 80% of commercial lending.

When, not if, the financial plug is pulled, millions more workers will be sent to join those cast out of the privatised previously state-owned industries as social priorities have changed. Out of a population of 1.3 billion, there are already an estimated 30 million unemployed in the cities. A further 150 million transients, former rural residents are thought to be roaming at any one time from job to job in booming urban areas, unable to compete for the best jobs, unable to get access to good health care, or provide their children with a good education. At least 200 million people remain on the land, abandoned, with virtually no work. Whilst Shanghai and Beijing now have

China's ecological crisis

China's own environmental record is so lamentable that if it were ever to import Western consumer habits, we might all suffer the consequences. Imagine, for example, what would happen if coal production were to double. China relies on coal for 75% of its energy and already spews out 19 million tons of sulphur dioxide a year, compared with 11 million tons for the United States. It would soon rival the US as the world's largest source of greenhouse gases – although as a "developing nation" China is exempted by the Kyoto treaty from cutting its carbon dioxide emissions. The implications for global warming hardly bear thinking about.

Environmentalists point out that China's "ecological footprint", though large and increasing, is considerably less per head than that of either the US or the UK. Even now, however, the inhabitants of roughly two-thirds of the 340 Chinese cities, where air quality is monitored, breathe air that fails to meet national air-quality levels (which are considerably less stringent than World Health Organisation norms). Indoor pollution from coal burning takes more than 700,000 lives a year.

Then there is water. Two thirds of China's major cities are now seriously short of fresh water, and as many as 700 million people drink water that is contaminated with human and animal waste and that doesn't come close to meeting government standards (also below world norms).

Jasper Becker *Independent,* 8 May 2004

hospitals similar to those in developed countries, the universal rural system of health care created by Mao Zedong's 1949 revolution is fast disappearing, leaving wide swathes of the country with care worse than was available before the revolution. Just as in the US, in conditions of such extreme competition, capitalist production is unable to provide social support for people without work.

Agriculture fares no better

The methods of manufacturing and of industrialisation have also revolutionised agriculture. The application of science and new technology has shifted food production from a reliance on manual labour to a dependence on mechanisation. Just as in manufacturing, the continual competitive pressure to purchase

The global glut

The world economy is now facing a widening deflationary gap created by deficient global demand. There is a global glut in both labour and product markets, with too many goods chasing too few buyers and too many workers chasing too few jobs. Intense price and exchange-rate competition among major exporters have been adding to instability and deflationary pressures, while many developing countries facing tight payments positions are being forced to curtail imports. These difficulties are similar to those that the Bretton Woods Institutions were created to resolve. If decisive action is not taken to restore stability in financial and currency markets, to start a global recovery and reverse the rapid rise in unemployment, there is a real threat that trade imbalances and the coexistence of continued rapid growth in some parts of the world with stagnation, decline and job losses elsewhere could deepen the existing discontent with globalisation among a wide section of the world's population, triggering a political backlash and a loss of faith in markets and openness, and leading to international economic disintegration with the burden falling disproportionately on the poor and underprivileged. This is perhaps the first real test for economic policy in a post-Bretton Woods globalise world.

Trade and development report 2003, UNCTAD

the latest equipment, the most potent chemical inputs, and the highest-yielding seeds places farmers firmly on the technological treadmill. Advances in technology may raise single-crop yields, but they also often lower the farmer's net income: capital expenses, debt service and production costs eat up a higher proportion of the farmer's proceeds, while overall increases in output merely cause the price of global commodities to drop.

In the US, for example, factory farming techniques – including carefully controlled heating and lighting, specially formulated feed and heavy doses of antibiotics – enable the average poultry

Milking the farmers

In Wales, in 1945, there were 27,000 registered milk producers producing an average of 21,000 litres per producer each year – a total of 567m litres. By the early 1970s the number of producers had fallen by nearly 50% to 15,000 producing an average of 81,500 litres per producer. By 2004, the number of registered producers had plummeted to 3,000, producing a staggering 500,000 litres each – a total of 1500m litres. This increased volume has been achieved with little increase in the number of animals.

Productivity increases derive from improved grasses, fertilisers, scientific breeding techniques, and disease control. And the days of hand-milking are long gone. In the most advanced units the cows present themselves to be milked several times a day by robot machines which automatically attach to the cows' teats.

The resultant reduction in the value derived from milk production together with, in recent years, increasing competitive pressure from supermarkets has contributed dramatically to the falling price paid to farmers relative to farm asset values. From the early 1930s to the present day, the milk price paid to producers has increased six-fold; from an average of 3p per litre to 18 ppl in 2003. During the same period land prices increased 100-fold, from £40 per acre in the early 1930s to around £4,000 today. And the average price of a farmhouse has increased more than 130-fold from £995 to £130,000.

Gwlad, the magazine of agriculture and rural affairs information from the Welsh Assembly, Issue 30, July 2004

producer to raise 240,000 birds each year. But after expenses this prodigious (and cruel) production earns the farmer only $12,000, or five cents per bird. Such technological techniques typically do nothing to help farmers, while providing a boon to the manufacturers and marketers of the technologies.

Meanwhile, the global economy's emphasis on free trade often forces farmers into competition with producers in countries where costs are lower due to more favourable climate and geography, lower labour costs, or less stringent standards. Farmers are pressured to become still more "efficient" by increasing the size of their farms, becoming more narrowly specialised and adopting newer technologies. The treadmill speeds up, and farmers inevitably fall further behind.

Farmers in the poorer countries face similar problems. Those still embedded in a local economy can feed their families with their diversified production, selling the remainder in local markets. But those who have been drawn into the global food system must specialise their production for export, using the income from it to buy food. A farmer in South America or Africa

Crisis in the countryside

In *A rough guide to the UK farming crisis*, Corporate Watch reported that in 1939, Britain had almost 500,000 farms, most of them under 40 hectares, employing 15% of the population. Today, a third of the farms have gone, with the pace accelerating in recent years. Some 87,000 farmers and farm workers left the industry between 1993 and 2001, and a further 18,000 in 2002. The government predicts that by 2005 another 25% of the remaining farms in the UK will have gone bust or merged, with a further 50,000 people forced to leave farming. UK dairy farmers are in great difficulties because of the pressure exerted by the big supermarket chains. The farmgate milk price has plummeted by over 30% since 1995, falling to below production price. Between 1970 and 2000 the number of dairy farms in the UK fell by 70%. The resultant crisis in rural areas has taken its toll on social and economic life. There are now fewer than 12,000 rural shops left in Britain, with 300 closing each year. Banks and post offices have closed in large numbers. Six village pubs close each week.

can easily be destroyed by a recession in Europe or a bigger-than-expected harvest in Asia.

The total income from UK farming fell by 70% from its 1996 high to a low of £1.8 billion in 2001/2 in the year of foot and mouth. It has since recovered slightly, rising to £2.36 billion in 2002 and to £3.23 billion in 2003. Despite the recent recovery, the underlying pattern is of a long-term decline in farm incomes. The total income generated by agriculture has declined in real terms by around 40% over the past 30 years.

Annual surveys by Deloitte & Touche show that the average net farm income fell dramatically from £80,000 in 1995-96 to £8,000 in 2000 and to £2,500 during 2001, the year of foot and mouth. Incomes recovered somewhat, to £12,500 in 2002/03. But for some, predominantly small farmers, they remain well below the minimum wage. An increasing number of farmers now also work part-time off the farm.

Fictitious capital, fictitious profits

The increasing failure of production to yield a sufficient rate of profit obliges capitalist producers to seek ever more funds for expansion, far beyond the amounts provided by shareholders. The escalating demand for credit led to the rise of the financial sector. This was especially marked in the 1980s. It provided the source of funds for investments abroad, and the acquisitions and mergers which continue to characterise the trajectory of corporations.

As the financial sector has grown, its expansion became a magnet for investors, speculators and assorted gamblers. In the decade up to 2001, the numbers employed in banking and finance in the UK rose by 1.7 million people, as 500,000 manufacturing jobs were lost. The British economy has become massively over-dependent on exporting insurance and financial services, together with a surge in speculation on overseas markets. In June 2004, the Bank of England warned that a flood of speculative cash into hedge funds run by "less-experienced" managers brought the risk of a sudden correction that could trigger instability in financial markets and push the world deeper into recession. In the same year the financial sector was

providing around 37% of all domestic profits in the United States, having risen from a mere 7% in 1948. Calculations suggest that financial shares are overvalued by between 58 and 80%. With growth declining globally, a new downward spiral cannot be far off.

Whilst the complexities of the world financial system can seem remote to many people, the growth of personal and household debt looms larger by the day. In June 2004, the Bank of England warned that the overall mountain of debt of £1 trillion pounds held by UK consumers was the major threat to the stability of Britain's banking system. But as the volume of commodities cascading onto the high streets continued, and prices continued to drop, the TNCs increased their marketing budgets.

Besides shoes and clothing, the dominant commodities are based around the silicon chip. Millions upon millions of chips pour out of plants day by day in search of a home. For more than 30 years, an inverse law has operated in computing – power increasing and price decreasing. This particular expression of the law of the tendency of the rate of profit to fall is as hard at work here as everywhere else. There is no end in sight to this process. PCs, laptops, games machines, mobile phones, phone cards, cars, washing machines, bread machines. Everything that can host a chip, will. But for profit to be realised, commodities must not just be made. They must also be sold. And for people whose wages are held down by competition, to be able to buy they must have access to credit. So the ultimate chip-based commodity is the chip-and-pin credit card that makes borrowing from the future an essential part of life.

As this book went to print, interest rates had begun to rise again. Realisation of the distinct possibilities of collapse began to appear in the financial pages. It was not a question of if, but when. The impact on the finances of all those tempted into credit-card debt by the life-style marketing campaigns, and seduced into large mortgages by the meteoric, seemingly endless rise in house prices is inevitable. Assets will overnight be turned into so-called "negative equity". Millions more pensions will evaporate. Jobs will disappear. Uncontrolled meltdown will produce incalculable social and political consequences.

This is an account of a social, economic and political system out of control. It has created forces so monstrous, that is impossible to bring the system to order. This is the motivation for change.

History demands change

We have tried to show that the means, capacity and potential for satisfying human need in the shape of goods and services is distorted, held back and turned into something oppressive by a productive system that is driven primarily by profit. Our proposals are aimed at liberating human achievement from the straitjacket of capitalist social relations.

This is both possible and necessary. The means are already to hand, as we will show. The great achievements in terms of science, technology and human organisational skills are immediately in front of us. Yet they remain beyond conscious, human control because they are owned privately, dependent on capital and its narrow objectives before they are brought into use. Alternative forms of ownership and work on a not-for-profit basis already exist within capitalism. Yet they are marginalised and isolated forms that stand no chance of becoming the dominant form within the existing order of things. They are all subject to the overwhelming pressures of market forces and the demands of capitalist states and governments.

Historical forces are on our side, adding to the possibilities and potential already described. Despite its appearance of permanence, which it tries to reinforce whenever and wherever it can, capitalism is a relatively small blip on the timescale of 12,000 years of social history. It grew within feudalism and emerged through social and political revolution and the violence of the industrial revolution. History demands that the system of private ownership itself is transcended in order to liberate the potential that it contains – and to halt the ecological destruction that actually threatens life itself. This force in the shape of human aspirations is knocking at the gates, demanding that they are opened. The means of production have outgrown the way the economy is organised. We have to break the bonds, the chains that hold humanity back and create the conditions for a new type

of society to evolve.

One of the enduring myths of capitalism is that it is not possible to produce without private ownership. Co-operatives and other not-for-profit enterprises show that is simply not the case. Furthermore, the actual owners of industry and commerce absented themselves from the scene in a practical sense way back

> At a certain stage of their development, the material productive forces of society come in conflict with the existing relations of production, or – what is but a legal expression for the same thing – with the property relations within which they have been at work hitherto. From forms of development of the productive forces these relations turn into their fetters. Then begins an epoch of social revolution. With the change of the economic foundation the entire immense superstructure is more or less rapidly transformed. In considering such transformations a distinction should always be made between the material transformation of the economic conditions of production, which can be determined with the precision of natural science, and the legal, political, religious, aesthetic or philosophic – in short, ideological forms in which men become conscious of this conflict and fight it out. Just as our opinion of an individual is not based on what he thinks of himself, so can we not judge of such a period of transformation by its own consciousness; on the contrary, this consciousness must be explained rather from the contradictions of material life, from the existing conflict between the social productive forces and the relations of production.
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> "No social order ever perishes before all the productive forces for which there is room in it have developed; and new, higher relations of production never appear before the material conditions of their existence have matured in the womb of the old society itself. Therefore mankind always sets itself only such tasks as it can solve; since, looking at the matter more closely, it will always be found that the tasks itself arises only when the material conditions of its solution already exist or are at least in the process of formation.
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> *Preface to a Contribution to the Critique of Political Economy* 1859, Karl Marx

in the 19th century. With the development of credit, joint stock companies and other means of raising finance, the actual owner of capital became increasingly remote and unnecessary. As Marx remarked, the capitalist is actually a "mere manager, administrator of other people's investment, a mere money-capitalist. Ownership of capital is now entirely divorced from the function of capital in the production process". All the actual work is done by salaried employees

The aim of a classless society through the abolition of capitalism would be to:

- ensure the majority have access to the benefits currently only available to the few
- ensure survival of the planet, ecosystems and humanity
- create a society based on co-operation, satisfying need and not profit
- release the potential of automation, reducing working hours substantially
- overcome alienation of people from their work, what is produced and society as a whole
- use the abundance of products to alleviate poverty and need world-wide
- allow and enable people to fulfil their potential and aspirations
- make health and well-being the single dominant social objective for the world's population.

Alternatives that beg the question

Over the past decade, millions of people have taken to the streets throughout the world in massive demonstrations against the institutions and policies of corporate globalisation. Seattle in 1999 brought together a coalition of workers and activists from the industrialised and developing countries against the World Trade Organisation. A growing global consciousness formed in response to the power of the transnational corporations was transformed into militant protest. The WTO confirmed its undemocratic nature by moving its 2001 ministerial meeting to Qatar, ruled by a feudal monarchy where public protest is

ruthlessly suppressed. In April 2000, police shut down much of Washington so that a World Bank-IMF meeting could take place free of disturbance. A subsequent meeting of IMF and World Bank directors in Prague closed a day early and a planned meeting in Barcelona was cancelled. The Italian state brutally suppressed opposition to the G8 Summit in Genoa, killing a protester and injuring many more. Thousands from all over the world have gathered in Porte Alegre, Brazil, each year since 2001 for the annual World Social Forum, entitled "Another World is Possible". Similar gatherings have taken place in India and in France.

World Bank-IMF projects like water privatisation in Ghana have met resistance from the trade unions and community groups. Tens of thousands have struggled against dam projects in India, which are driven by global corporate interests. In countries like Britain, there is widespread opposition to genetically-modified (GM) food because of the justified suspicion that companies like Monsanto put profits ahead of scientific probity. In poorer countries, small farmers have led the movement against GM because of the threat it poses to their livelihoods and health.

In September 2000, representatives of peoples' organisations in Cambodia, India, Indonesia, Laos, Malaysia, the Philippines and Thailand joined in a 12-day mobile campaign for biodiversity. The participants declared that:

> Biodiversity can only be protected and properly managed by local people. Importantly, Asian communities do not perceive biological resources as commodities for agribusiness and industry. Instead, they have a sacred and spiritual value to sustain our lives and our survival.
>
> Our biological resources have been destroyed on a massive scale with colonialism. It was exacerbated by the Green Revolution, which was imposed by our governments in co-operation with international agriculture research institutes. The great pressure towards genetic engineering and the use of genetically modified organisms (GMOs) by agricultural transnational corporations (TNCs) led by Monsanto and Novartis will inevitably exacerbate destruction of the world's biodiversity and rapid genetic pollution.

> The development of GMOs, the promotion of GM food and products as well as the intellectual property rights system imposed by the industrialised countries all stand against religious and ethical principles and faith of Asian people. All this violates the rights of farmers, consumers and entire nations. The self-reliance and sovereignty in the Asian region will be threatened to the point that we all become slaves of giant international corporations.
>
> As human beings, we are both part of and highly dependent on biodiversity. Rice, corn, and other staple crops, food crops, medicinal plants and all other life forms are significant genetic resources that shape our culture and lifestyle. We oppose any plan to transform these into genetically modified organisms.

Every day, activists and ordinary people engage in struggle against ecological degradation, the results of industrialised food production, the movement of jobs from one country to another, and the ruthless exploitation at work that is the hallmark of globalisation for profit. This resistance has found its reflection in a set of "alternatives" to corporate-driven globalisation, put forward by organisations like Oxfam, the International Forum on Globalisation (IFG), the World Development Movement (WDM) and social scientists like David Held.

The IFG points out that groups have waged public campaigns against the operations of TNCs on numerous fronts – ranging from world-wide boycotts against Nestlé on dried baby milk and bank loans to South Africa, the battles against Union Carbide over the Bhopal disaster in India, the repression of Coca-Cola workers in Guatemala, the promotion of bio-tech milk products by chemical companies like Monsanto, and clear-cut logging and deforestation by Mitsubishi and MacMillan Bloedel. "Through these and many other corporate campaigns, workers, environmentalists, consumer, church and human rights groups have cultivated important strategic capacities and skills for challenging TNCs. At the same time, a variety of legal and social action centres on corporate issues have been developed bringing valuable profiles and data on specific TNCs. Today, these resources need to be refocused and retooled for the task of building a broad-based global movement aimed at the new

realities of corporate rule."

The IFG's *Alternatives to Economic Globalisation,* set out 10 organising principles for "democratic and sustainable societies". These include creating a "new democracy", local production, ecological sustainability, the protection of the commons – resources like water, air, land, fisheries and forest – from corporate domination, the right to a livelihood, an emphasis on human rights, diversity and "greater equity both among nations and within them" to "reinforce democracy and sustainable communities". Few could disagree with these sentiments – but that is all that they remain. The one, very important, word that does not figure in the IFG's analysis is "capitalism". The absence of an analysis of the inner dynamics of how the system functions makes it impossible to put forward serious alternatives. We are left to guess how the transnational corporations have accumulated such power and influence. Ultimately, the IFG appeals to the status quo to mend its ways, declaring: "As the Bretton Woods institutions are dismantled, the countervailing institutional power required to reform the global financial system and end global corporate rule can come from strengthened states and a reformed United Nations."

There is a call for the replacement of the World Bank, the IMF and the WTO with new institutions created under the auspices of the United Nations. This is the same UN that itself is in hock to big business through alliances at every level of the organisation. It is also the body that proved toothless when the United States and Britain launched their illegal attack on Iraq.

The IFG is right to cite the growth in popular movements that challenge corporate power, such as Living Democracy in India, which urges democratic community control of resources and that in Canada hundreds of organisations have "joined in alliance to articulate a Citizens' Agenda that seeks to wrest control of governmental institutions back away from corporations". There are similar movements in most countries, particularly in South America where the Zapatistas in Mexico have inspired movements of the landless poor. But their aspirations cannot be met by a tinkering around with global capitalist institutions, even if it were possible to do that.

Non-governmental organisations (NGOs) like Oxfam, Christian Aid, Greenpeace and Jubilee 2000, have mushroomed over the recent period of globalisation. Many have joined government delegations at global summits. They have also become key agencies in the delivery of rich country "aid" and humanitarian assistance. Deeply concerned about the course of corporate globalisation, many have suggested a better way of doing business that will make the corporations more acceptable to the rest of society. Christian Aid, for example, has called for the legally-binding regulation of transnational corporations. In a briefing document for the World Economic Forum and the World Summit on Sustainable Development in 2002, it advocated "minimal standards to govern corporate behaviour" in terms of employment conditions and protection of natural resources in order to "stop the worst TNC abuses". The charity's somewhat amazing conclusion was that legal regulation would turn the corporations into "a positive force for development". Well intentioned as these thoughts are, they defy reality in a massive way. The summit duly despatched the notion of regulation to the waste paper bin.

Oxfam's campaign, which is supported by many other like-minded organisations, is to make trade between rich and poor countries "fair". If this happened, it would make a "real difference in the fight against global poverty". Oxfam rightly points out:

> Large parts of the developing world are becoming enclaves of despair, increasingly marginalised and cut off from the rising wealth generated through trade. Shared prosperity cannot be built on such foundations. Like the economic forces that drive globalisation, the anger and social tensions that accompany vast inequalities in wealth and opportunity will not respect national borders. The instability that they will generate threatens us all. In today's globalised world, our lives are more inextricably linked than ever before, and so is our prosperity. As a global community, we sink or swim together.

The charity's view is that the international trading system is managed by rules and institutions that "reflect political choices".

In a rational world, where resources were commonly owned and controlled, this would be true. In the world of global capitalism, this is a far-from-accurate analysis. In fact, the opposite is true. Political choices actually reflect dominant, objective economic forces which are based on exploitation and profit, not fair trade. In the end, Oxfam's call for "a new model of inclusive globalisation" will fall on deaf ears and does nothing to bring out the real issues confronting poor countries in the international trade system.

In the end there is simply no such thing as capitalism with a human face. Held, author of a number of books on globalisation, believes that the present course is full of dangers and that alternatives are needed. In an article for *opendemocracy.net* he rightly says that "Washington-led neoliberalism and unilateralism has failed the world" and that "it is urgent that we find a way beyond its legacy". He observes the coincidence of the crisis affecting the global economy, ecology, political rule and the fate of poorer nations. He too, however, cannot bring himself to write of *capitalism*. This is because Held observes trends and patterns very well but refuses to see their relationships. In his book *Global Transformations*, he writes that globalisation is best thought of as

> a highly differentiated phenomenon involving domains of activity and interaction as diverse as the political, military, economic, cultural, migratory and environmental. Each of these domains involves different patterns of relations and activities. These can be thought of as "sites of power" – interaction contexts or organisational milieu in and through which power operates to shape the action capacities of peoples and communities.

Held calls for a "new global covenant". This is based on the rejection of the "Washington consensus" in favour of a "free and fair global economy which also supports a human security agenda" so that globalisation is "steered for the benefit for all". His five essential goals are: the promotion of the rule of law at international level; greater transparency in "global governance"; a "deeper commitment to social justice in the pursuit of a more

equitable distribution of changes; the "reinvention" of community and the regulation of the global economy. This is supposed to be a framework for a "global social democratic consensus". In fact this is a humanist illusion and is clearly no alternative to corporate-driven globalisation.

The International Labour Organisation is supposed to represent and advance the interests of workers throughout the world. You would not think so after reading *A fair globalisation: creating opportunities for all*. In 190 pages of text, analysis and graphs, the ILO unbelievably fails to apply the term *capitalism* even once to the study of globalisation and its social impact. Yet the report acknowledges that public debate on globalisation is at an "impasse" and that the will for consensus is "weak". International development commitments go largely unfulfilled, it notes, without asking why. The fact is that, as we have shown, capital is locked into a dynamic of its own and will only modify its operations in so far as this does not affect the main purpose of its existence – capital accumulation and profits. Ignoring this reality allows the ILO to dwell on ways to "harness the potential of globalisation itself" in order to "extend the benefits" to more people.

There is a clear acceptance of the status quo and even praise: "The global market economy has demonstrated great productive capacity. Wisely managed [!], it can deliver unprecedented material progress, generate more productive and better jobs for all, and contribute significantly to reducing world poverty." This could easily have been written by the World Bank or the chief executive of one of the more "socially responsible" corporations. As a result, the ILO puts forward proposals that are essentially meaningless. The report calls for: "a focus on people"; a democratic and effective state; sustainable development; productive and equitable markets; fair rules; globalisation with solidarity; greater accountability to people; deeper partnerships and an effective United Nations. This presents no challenge to corporate globalisation and will do nothing to help the cause of the workers for whom the ILO claims to speak. In fact, by tying them into working in partnership with big business, these proposals can only make conditions worse and erode still further

trade unions' independence.

There is a growing school of thought that proposes an alternative form of capitalism based on limiting growth. The New Economics Foundation argues that it "isn't growth so much as the quality of our lives that counts". A briefing paper describes economic progress as a "cultural myth" that helps bind society together. The NEF admits: "There is, in the current climate, no real alternative to economic growth that doesn't involve the risk of greater hardships for the most vulnerable in our society." So it proposes to reformulate "sustainable objectives" and other measures in order to redefine what constitutes progress as an alternative to using economic growth as a yardstick.

Growth is also author Clive Hamilton's target. In his *Visions of the Future – the post-growth society*, he argues that: "Growth not only fails to make people contented; it also destroys many of the things that do. Growth fosters empty consumerism, degrades the natural environment, weakens social cohesion and corrodes character." It seems as if growth has an almost autonomous power and significance, which is then projected onto society in terms of its effects and impact. For Hamilton it is not the dominant role of capital which defines the character of growth. Instead growth defines the role of capital, the market and the alienating ideology of consumer capitalism. This means it is growth, not capitalism which is considered to be the opponent of potential social change and progress.

This standpoint results in subjectivism, which is expressed by an emphasis upon the importance of attitudes and opinions as the basis for understanding the relationship between reality and thought. Because growth is considered in ambiguously psychological terms as what makes us unhappy as human beings it must be replaced by a situation that makes us happy. Hamilton claims: "The politics of the transition to a post-growth society does not call for the overthrow of the state or the destruction of capital; it starts from where we are." He sets out a vision of society which represents a radical rejection of the ideology and social structures of growth fetishism.

So the aim of this "post-growth society" is an ethical

capitalism that has somehow rejected the significance of economic growth. It will be a society that, because it is still based upon capitalism, will also have capital accumulation and an expansionist logic, and yet will also not emphasise the role of growth! This is untenable because, as we have shown, the imperatives of capital accumulation are based upon the increase of material wealth, in the form of an expanding production of commodities and services. In reality therefore, the process of accumulation cannot be differentiated from growth. The very connection between growth, accumulation and consumerism exists, because the act of purchasing a commodity facilitates the possibility of realising the surplus value within a commodity.

Hamilton essentially argues that material goods themselves are the representation of alienation. But while it can certainly be argued that the quantity of material goods that a person owns is not identical with happiness, it is not possible to disconnect the satisfaction of human wants from the actual goods of consumption. It is not the action of consumption that contributes to alienation, but instead the character of the process of consumption. For example, is it possible to have an over-consumption of books, or musical CDs? Both can represent a contribution to the development of our imagination and intellectual capacity.

Is a person who spends a lot of disposable income on books adapting to consumerist ideology and deliberately trying to create a sophisticated identity for themselves? The answer to this question could be "yes" if virtually none of these books were read, but in general the very act of buying books – which are still commodities and consumer items – represents a use value that contributes to the realisation of profound cultural and intellectual needs. In contrast the inability to be able to buy books because of poverty (and there may be limited access to a public library which have been run down by cuts) is a denial of the possibility of satisfying cultural wants. The result is a form of alienation from the intellectual processes of cultural development because of an inability to consume the use value of books. In contrast, the buying of goods as a sign of prestige and power over others is alienating, not because the goods themselves are

alienating, but because they come to represent the social power of some humans over other humans. This alienating situation is ultimately an expression of the social relations and the complex historical development of the capital-labour relation.

The basic objective content of consumption in order to meet human needs remains a constant aspect of historical development. In this context the production of a greater variety of goods is generally an expression of social progress because humans have enhanced their capacity to meet their needs. The role of advertising has distorted this process of realising needs, and brand images have created many unnecessary goods, but still this expression of the ideology of commodity exchange is secondary in importance to the objective connection between the process of consumption and the meeting of human needs. Thus even in the contemporary consumer society the role of consumption is not to satisfy the subjective motive of selfishness, egoism and greed but is instead a generalised expression of fulfilling human needs.

Hamilton's analysis shows the importance of alienating ideology in the act of consumption. For example, advertising creates dissatisfaction with what a person has got and makes consumers aspire to want more and therefore purchase new products. The purpose of marketing and brand identity is to sell an illusory identity to the consumer, (sense of family togetherness or the power of sexuality) but real human needs are not realised. Only the sense of desire remains: "Products and brands can never give real meaning to human lives, so modern consumers lapse into a permanent state of unfilled desire. This, of course, is the essential state for consumers in modern consumer capitalism."

To overcome alienation in the process of production and consumption it is necessary to revolutionise social relations so that they facilitate the producers' and consumers' capacities and abilities. They could then realise economic growth in terms that represent their power over economic and social activity.

Hamilton takes the view that people can make a voluntary decision to change lifestyles by reducing income and consumption patterns. This is a utopia for the comfortably affluent majority. It is not a feasible and practical option for the

majority of people who are compelled to work long hours in order to maintain a reasonable standard of living. Most people may actually want to reduce the amount of hours they work, and have more leisure time, but the alienated conditions of their economic activity mean that they have no option other than to work long hours. Only the transformation of these alienated conditions that dictate the character of people's work patterns will create the possibility for people to extend their choices about income, levels of consumption and hours worked. Hamilton has understood that an important problem within capitalism is that it undermines the realisation of human potential. The challenge is to create conditions that liberate this potential.

Not-for-profit working already exists

There are many examples within capitalism of not-for-profit forms of ownership and economic activity. They show that it is possible to run enterprises and services without the profit motive. They include major state-owned bodies like the National Health Service, which is one of the world's largest employers with a 1.3 million strong workforce. Although NHS activities are increasingly commercialised and parts of it contracted out, and while it lacks democratic control, for over 50 years it has proved that something as crucial as healthcare does not need a profit incentive.

Another not-for-profit group of organisations is known broadly as the voluntary sector. These are mostly charities which are run by trustees, who are responsible for the assets of the organisation. Increasingly, they carry out a range of services formerly provided by the public sector. It is estimated that there are more than 150,000 active charities in Britain with a total annual income of £20.8 billion, assets totalling £70 billion and more than 500,000 paid employees. Half are engaged in social work while 12,300 work in museums.

More than 750,000 co-operatives of different types serve some 760 million members in more than 100 countries. They are either consumer, producer, worker or purchasing/shared services co-operatives. Their story probably begins with the 28 pioneers who in 1844 opened a co-operative store in Rochdale. A co-operative

can be established as a partnership. There are model partnership agreements which can be used to ensure that the partnership is established on a fair and co-operative basis with the rights and responsibilities of each partner clearly defined. Most co-operatives are established as companies limited by guarantee. This legal format allows for limited liability for the members, democratic management structures, and for a mixture of commercial and social objectives.

In just 25 years, over 11,000 employee-owned companies have been established in the US, employing more than 1.5 million workers. Tens of thousands of employee-owned enterprises have been created in the former Soviet Union and Eastern Europe. Other examples include Publix supermarkets, with 119,000 employees, which is currently the largest employee-owned firm in the US, and Journal Communications, publisher of the *Milwaukee* (Wisconsin) *Journal,* where 3300 current and retired employees are owners of a wide array of firms in the communication business.

In Europe, Italy is reported to have the largest concentration of producer co-operatives in the western world – around 16,000, employing over 300,000 workers. In North America, Canada is particularly rich in co-operatives, claiming around 5,000 co-operatives of various kinds, including credit unions and consumer co-operatives, with 151,000 employees for 14.8 million members, and assets of $167 billion in 1996. Co-operatives have been especially successful as farmers' organisations. Farmers organise to efficiently purchase supplies or services and to process and market their products.

It is reported that worker co-operatives employ more than 300,000 in Spain. The country is home to 11,079 large and small labour firms, employing 62,567 as well as the large and diversified Mondragon Co-operative, formed in the impoverished Basque area in 1956. Today Mondragon is an industrial, banking, management and marketing giant in Spain, with 34,400 employees, 70% of them members of the co-operative, exporting 46% of its industrial production.

Credit unions and mutual savings associations may be the second most common kind of co-operative. They are owned by

their depositors, who can receive loans at preferred rates and benefit from dividends as well as interest.

According to the Association of British Credit Unions, in September 2003, there were 444 ABCUL credit unions, providing financial services to around 365,100 people, who between them had saved around £293m and were borrowing £240m. At the same date, there were a total of 665 registered credit unions, with a total membership for Britain of over 460,000. At the other end of the spectrum are giant credit union co-operatives like the Desjardins Credit Union of Quebec, with more than 15,000 employees and $83 billion in assets.

The Landless Workers Movement (MST) is attempting to "redemocratise" the land in Brazil. It is now the largest social movement in Latin America. In a struggle against absentee landlords, more than 300,000 families have won land titles to over 20 million acres through MST land take-overs. In 1999 alone, 25,099 families moved on to unproductive land. There are currently almost 100,000 families in encampments throughout Brazil awaiting settlements. The MST has also created 60 food co-operatives, as well as small agricultural industries. The movement has also set up a literacy programme.

A housing co-op is where members (tenants) control and manage their homes. Many co-ops also own their properties. There are over 250 registered housing co-ops in England. Most date back to the 1970s and 1980s. Many are fully mutual, which means that all their tenants are members and have a right to be involved in the co-op. Most co-ops elect a management committee which organises the day-to-day business. In the US, more than 1.5 million families of all income levels live in homes owned and operated through co-operative associations.

The Community Land Trust (CLT) idea has been developing in the US and Canada over the last 30 years, and is now being applied in several projects in the UK. It provides mutual ownership of land for the benefit of the community. CLT schemes take land off the market and place it into a system of trusteeship. CLTs are often characterised by dual ownership, in which the CLT itself keeps ownership of the land while the users of the land own or rent the buildings on the land on a long

leasehold basis, which is paid through modest ground rent levels.

A major development of the last 30 years is "open source". This is the term used to describe computer software that is collectively owned and voluntarily developed. The "contract" that accompanies the software is called a General Public Licence. This dictates that any new source code – which is needed to make software function – will remain free and available to anyone who wants it. The contrast is with proprietary software like Windows, which Microsoft protects by licensing the copyright and legal threats against "pirates". The movement started when the University of California, building on work done by AT&T, developed the Unix operating system and began giving it away for a nominal fee, along with its source code. The increasing dominance of commercial software and Microsoft led to the decline of Unix, which was not suitable for small PCs. The baton was picked by a Finnish student, Linus Torvalds who in 1990 asked via the Internet for help in developing a free operating system he had started work on. The system became known as Linux and marked the start of the open source revolution. In his book *The Success of Open Source*, Steven Weber writes that

> by the end of the decade, Linux was a major technological and market phenomenon. A hugely complex and sophisticated operating system had been built out of the voluntary contributions of thousands of developers spread around the world. By the middle of 2000 Linux ran more than a third of the servers that make up the web. It was making substantial inroads into other segments of computing, all the way from major enterprise-level systems (in banks, insurance companies, and major database operations) to embedded software in smart chips and appliances.

Modern bourgeois society, with its relations of production, of exchange and of property, a society that has conjured up such gigantic means of production and of exchange, is like the sorcerer who is no longer able to control the powers of the nether world whom he has called up by his spells.

Communist Manifesto 1848

Our proposals

Building on the results

Capitalism has already developed an array of methods and technologies, many of which constitute the basics of a fully-integrated, socialised system of production and distribution. Much of what has been developed is currently concentrated in a few countries and benefits a small percentage of the world's population, whilst the majority suffer inhuman and degrading conditions. A new democratic society serving the needs of the majority will ensure that the beneficial results of capitalist production are made available to all. These include:

- a globally interconnected communications infrastructure
- scientific systems of management
- highly-skilled workforces in many countries
- integrated methods of supply, production and distribution
- the continuing scientific and technological revolution
- a global financial system.

Communications infrastructure

A truly globally distributed network is beyond the capability or interest of capitalist corporations. While some in the developed countries carry two or even three mobile phones transmitting text and pictures as well as voice, a large proportion of the world's population has never seen a phone let alone made a call. But in an equitable society focussed on need, the benefits of the computing and communications revolution will be made universally available.

With a global spiders' web of optical fibre and satellites, enhanced with mobile telephony, personal wireless devices, and the continuously increasing speed and power of networked computer systems, a new generation of the Web will draw the wealth of data, information and knowledge management systems into an interconnected layer of intelligence encircling the planet. Application of this technology is virtually limitless. Its uses will benefit humanity in ways which we can only dimly perceive. Knowledge will be widely shared and cultural diversity

expanded. Through unlimited, intelligently-guided access to every kind of intellectual product, every individual will have boundless opportunities for self-development. Scarce, specialist expertise can be shared across the globe. Remotely controlled surgery and many other less spectacular aspects of telemedicine already open pathways to the future. Unprecedented social connections will develop around communities of common interest.

In a fully integrated network using multipoint tele- and video-conferencing, the majority will be full participants in policy-making, planning and decision-making. In this way, participative democracy will extend far beyond the primitive forms of registering votes electronically currently under test.

Networks of geostationary satellites provide the basis for global positioning systems (GPS) which greatly simplify navigation in three dimensions. GPS devices are now routinely installed in many types of vehicles and give spoken directions to drivers. With roadside devices providing electronic track, accurate mapping, and built-in safety precautions, automated, driverless, clean fuel, door-to-door public transport systems are now on the horizon.

Air traffic control systems will become better able to deal with the proliferation of planes in the sky. New generations of high, medium and low speed trains, trams and hybrid vehicles using new fuel systems (liquid petroleum gas, electric, solar, hydrogen) will be drawn together into an integrated transport system.

With radio frequency and biometric identification devices taking the ubiquitous barcode several steps on, any tagged object can be tracked as it moves. The potential exists for real-time information to be made available on any object or process on the planet. Repressive governments with a huge and increasing number of discontents and opponents eye these technologies as the ideal means of social control, using ID cards and electronically-tagged irremovable bracelets or anklets as a prison without walls. In a democratic society bent on satisfying the needs of the majority, the emphasis will be on control of objects not people.

Scientific systems of management

In manufacturing, from the moment of an object's first appearance in a production plan, or in response to an individual customer order, the most advanced systems now can and do track its progress through the various stages of fabrication, assembly and delivery. Some, like computer manufacturer Dell, and components supplier Dabs, make stage-by-stage progress on orders available to customers on its website, as do parcel collection and delivery companies.

Transnational and global corporations were made possible by these kinds of technologies. But as these organisations enlarged, becoming more and more complex, they began to outgrow the old deeply hierarchical forms. Many layers of management became unnecessary as routine decision-making fell to automation. Mergers and acquisitions brought dissimilar organisations together, with the need to overcome problems of different, often incompatible systems and cultures. Central, common, duplicated functions led to rationalisation, standardisation and integration within and across company and national borders. Business units were developed to provide common services across the heterogeneous parts of the diversified corporation. The profit centre emerged as the dominant means of control.

Management based on company-wide, rigid organisation structures with strictly allocated roles and responsibilities became increasingly unworkable. These old forms had grown up in the age of Newtonian, mechanical, reductionist science and engineering, and were designed to resist change. But the new technological revolution destroys the old certainties. Mechanics had to give way to uncertainty, relativity, and a new understanding that the previously isolated, independent, unchanging objects are all subject to development and change as participants in an evolving web of interconnected processes.

Attempts to accommodate to change produced a period of value chain analysis, process redesign and re-engineering, automating many manufacturing and some management processes but keeping, even strengthening the bureaucratic machine. Through the 1980s and 1990s the profit-driven drive to

continuously revolutionise the technologies of production accelerated as the crisis deepened. To survive, all organisations were obliged to introduce means of adapting to change, whilst retaining their identity and sense of purpose. Mission statements were agonised over, and all subscribed, at least in words, to the need to adopt the principles of the "learning organisation". These techniques will prove invaluable in constructing a new, democratic economy.

The new science of chaos and complexity has begun to offer a new philosophy for developing organisations which is changing the basis of management. Rather than acting to preserve stability, new-style organisations will welcome the instability and change which characterises complex, living, social systems. In *Leadership and the New Science*, Margaret Wheatley insists:

> In response to changing external conditions and their own internal development, these *dissipative structures* dissipate or give up their form in order to recreate themselves into new forms. Faced with increasing levels of disturbance, these systems possess the innate ability to reorganise themselves to deal with the new information. For this reason, they are called *self-organising systems*. They are adaptive and resilient rather than rigid and stable.

Order in the newly emerging social system will develop from, and be based upon dynamic, fluid, inter-related, interdependent networks of autonomous self-organising, self-*re*organising, self-managed structures/units linked by thousands of connections into a new continuously evolving whole, but sharing a single, collective vision and purpose – contributing to the well-being of all.

Highly-skilled workforces

A key demand and impact of the technological revolution is the development of highly-skilled, IT-literate workforces, with individuals able to easily move from job to job as production methods change, entire industries disappear and new ones arise. In the countries which have been drawn into the globalised economy, the rapid re-division of labour demands flexibility and

literacy from its workers. The growing number of firms using flexible workplace practices (such as team work and multi-skilling), tend to have more highly skilled and better educated workforces than firms organised along more traditional lines. Under capitalism, these skills are deployed to serve the enhancement of profit and alienation of the worker from production and distribution. In a radically new framework, these skills will form the basis of a new approach to production.

Integrated production and distribution

Many TNCs are giant holding companies characterised by a diverse range of products, highly responsive supply chain management; globally distributed planned production systems, automated production (robotics), and a broad range of marketing techniques.

Some aspects of production are highly efficient, requiring less and less labour to produce high volumes of products. Others are hugely destructive – of people, and of the environment. Many of the characteristics of highly efficient production will be carried forward into new production systems. Those which are destructive and unsustainable will be discarded.

The scientific and technological revolution

This has much to contribute to the tasks of clearing up the mess resulting from the old capitalist system of production and building the new. The new sense of purpose will replace the distorting impact of the bottom line as the means of determining the direction and pace of technological innovation. Knowledge in all the major fields will advance in leaps and bounds as the recent trend to the commercialisation of intellectual property rights is ended. New technologies will be subject to rigorous testing, and the risks of early introduction assessed against their contribution to improving the well-being of the population and of the ecosystem.

Early action on energy conservation and the development of sustainable energy systems will supersede the destructive thirst for oil. Cleaning up and recycling emissions from coal and gas-fired power stations are high priority, as are safe solutions for

decommissioning nuclear installations and disposing of wastes. With current health warnings recommending limits on eating fish due to the presence of toxins, rapid progress will be needed to find and deploy antidotes for the heavy metals and other pollutants such as PCBs and dioxins which have been dumped in lakes, rivers and seas for decades.

A society which can use technology constructively will encourage the maturation of areas such as synthetic biology, currently at the stage of experiment and demonstration. Scientists are already using kits of synthesised parts (BioBricks) to construct living machines which will help dispose of nuclear waste, biological and chemical weapons and to fabricate anti-malarial drugs cheaply.

The potential impact of unintended consequences of genetically modified crops, bacteria, insects, and any organisms resulting from the study and application of genomics and proteomics will cease to be seen as a threat. The removal of the competitive pressure for early implementation will be replaced by strict application of the precautionary principle – first do no harm.

The benefits of genetic counselling in reducing the impact of diseases which are inherited, and gene therapy – both for inherited conditions and those which arise from random mutation – are already beginning to be realised. As more knowledge of the interaction between external and internal factors becomes available, the relative importance of social, preventive action and individual healthcare interventions will become clearer and can be acted upon.

When monopoly profits on herbicides such as glyphosate are removed from the equation, the marketing hype surrounding the contribution of new seeds to eliminating world hunger will subside and objective assessment will prevail.

As research into the applications of nano- and bio-technologies bears new fruit, such as self-constructing and self-repairing machines, new and even more spectacular leaps in the power, speed and availability of computing are coming on stream. Much of the accelerating acquisition of knowledge in these fields is itself attributable to the deployment of computer-based

techniques and robotics – a phenomenon observed in the race to map and publish the human genome. This dialectic of development, with each branch of science feeding the other, will deliver unimaginable contributions to the collective future of humanity when the new social paradigm comes into play.

A global financial system

In the 1990s the computing and communications revolution paved the way for the globalisation of financial markets. Innovative financial products and services changed the way that banks monitor and manage credit risk, market risk, and operational risk. The global financial system consists of financial markets, domestic and international, that are used by transnational corporations, government agencies and banks in the conduct of their business. The global financial markets include the market for foreign exchange, the Eurocurrency and related money markets, the international capital markets, notably the Eurobond and global equity markets, the commodity market and last but not least, the markets for forward contracts, options, swaps and other derivatives. But crisis after crisis has left the global financial system reeling. With the abolition of speculation on the money markets, the techniques developed by global capitalism can be used to clear payments between enterprises within and between countries. The drive to a moneyless society will become possible.

Act globally – start locally

What we have described above are amongst the highest achievements of capitalism in its three and a half centuries of rule. The new social framework will spread their benefits throughout society and to every country. But the two world wars, and the more recent attacks on Afghanistan and Iraq by the Bush-Blair coalition, show that capitalism tolerates no limits to its destructiveness. To protect these resources we have to change society along the lines set out below.

As capitalism has subordinated the sovereignty of national economies with globally inter-connected enterprises and a world financial system, so our proposals for moving beyond capitalist-

driven globalisation are based on the needs of the whole of the world's population. Our aim is to extend the gains and advances that capitalism has given the few, to all people in all countries through the development of a global, socialist society. This is the only alternative. We put forward the following principles as a way to act globally by starting locally:

- the social ownership of land, banking and finance, transport and communications infrastructure
- ownership of production facilities of the major corporations through a variety of forms of co-ownership
- democratic control and self-management of economic and financial resources, including public services
- steering the development of productive capacity towards satisfying need
- ecologically sustainable production and distribution
- encouraging and supporting small-scale enterprises, creative workers and farmers
- favouring local production for local needs
- facilitating the development of the "conscious market".

These changes can and will begin to reverse the alienating effects of capitalist production. They will create the conditions for the release of the natural altruism of people, building on, for example, half a century of experience of people working in the UK's National Health Service.

Identifying and setting priorities for need

Society will have to

1. solve urgent economic, social and ecological problems generated by capitalism through emergency programmes of action
2. set an agenda for addressing unmet needs for food, clothing, housing, health, energy, communication, transport, education, arts, entertainment, sport, recreation, safety, social support, security in older age and self-development
3. In the longer term, address new problems and challenges as they emerge and respond to new needs identified by people

through the democratic process.

Actionable first steps

There are some immediate steps we could take to release and redeploy resources to meet urgent need in housing, healthcare, education and transport.

Shareholders' dividends. Capitalist firms distribute £20 billion a year in dividends. With firms collectively owned, these resources can be used to tackle urgent social questions.

Pension funds. Almost one half of the stock market is actually owned by pension funds and insurance companies, who have invested the contributions and premiums of millions of workers. Their value at the end of 2003 was about £650 billion. Many funds are in a state of collapse following mis-investment and their misuse by companies. In future, these funds would be used to develop self-managed and collectively owned enterprises. The value of existing company pension schemes would be guaranteed under these new arrangements.

Bank/building society deposits. These funds are mostly used to speculate on foreign exchange markets and in all sorts of financial schemes. While guaranteeing their security and value, a not-for-profit economy could use these funds to advance sustainable production for need.

Government spending. Large parts of present government spending are either wasteful or are used to prop up capitalist firms. A major part of the NHS budget, for example, is used to buy drugs from the major pharmaceuticals. Government spending is also wasted on the private finance initiative and subsidies to railway companies or on arms budgets. Housing benefit is used to keep people in poverty when the funds could be used to slash rents to affordable levels.

Switching to production for need

These first steps will set in motion the reshaping of society. The priority will switch from production for profit and the accumulation of capital to an approach based on assessing the usefulness of products for meeting socially-agreed needs. The new priority will stimulate and encourage changes in the market.

The most advanced techniques will be adapted to reflect new patterns of consumption and demand.

In the medium-term this could work in the following way:

Planning. Regional plans will reconcile expected needs, balancing the potential of local, self-managed production against purchase of fairly traded goods. The coincidence of overproduction and famine will recede into history. Part of this process will be a rigorous assessment of the relative social benefits and costs of local production versus acquiring what is needed through trade.

Production and distribution. There will be full-cost accounting, taking into account the cost of recycling of resources, increased use of technology to increase productivity to reduce physical and mental labour, scientific and public assessment for safety of proposed new products, location of production and distribution as close as possible to the market, to minimise ecological impact.

Fair trade. We will not acquire things to the disadvantage of those we are acquiring them from. This leads to fair trade with other countries and producers, paying prices for goods that help towards the equalisation of standards of living throughout the world.

Conditions at work. The objective is to reduce hours and stress through the use of automation and the elimination of employer-employee relationships in favour of self-management and control. Wage differentials will be based on skills rather than market scarcity. There will be an emphasis on health, safety and job satisfaction as opposed to working simply to earn a living, whatever the nature of the task. Unattractive tasks should be shared by all.

Co-producers. An economic approach based on co-operation will put the needs of the consumer first in terms of safety, life of the product, ease of upgrade and maintenance. Consumers' representatives will be involved as co-producers in decisions about production, which will also involve responding to new needs and wants drawn from how people live their lives.

Self-management: making it work

At present, the food chain is under the control of agribusinesses, processing corporations and a handful of supermarkets. The pressures they exert have contributed to severe ecological damage, the decline of rural areas, a sharp fall in food safety, the promotion of nutritionally poor food, low wages and, of course, massive profits for a handful of firms. Given the social ownership of all these elements of the food chain, a new approach based on self-management and co-production for need will revolutionise the way we eat.

All the existing enterprises – supermarkets, distribution facilities, processing plants, food producers, and farmers will co-operate in inter-dependent, *self-managed* networks. Each separate enterprise would contract with purchase/supply partners. Prices will be determined by the costs of production, taking into account sustainable methods of agriculture and processing, and the livelihoods of those involved in production, distribution and retailing.

Each enterprise will be run by an elected *workers' council* with access to a wide range of expert, financial, technical and scientific advice. The responsibilities of those involved in self-management could include:

- working locally with representatives of consumer households, hospitals, schools, social services and other large users to ensure local needs are identified and met
- taking advice from experts in the fields of nutrition, food economics and safety
- identifying with consumers what new products can be developed and supplied to meet both local and national needs
- ensuring that food hygiene, safety and nutritional qualities meet agreed standards
- identifying what can be produced locally and what needs to be acquired from elsewhere
- formulating proposals on their own working conditions, hours and salaries
- ensuring that revenues generated from these activities are accounted for and that contractual obligations in the supply

chain are fulfilled
- producing a democratically-arrived at plan for food supply in the short, medium and long-term as proposals to Assemblies
- working with and being accountable to local, regional and national Assemblies.

Many of these tasks are already carried out in a haphazard and often uncoordinated way within capitalist society by salaried workers. The aim here is to set them within a new framework of social responsibility and accountability. This approach to self-management and democratic planning could become a model for all branches of industry and services.

The role of Assemblies

Local and regional Assemblies (see Chapter 8) will be responsible for ensuring that commitments given by self-managed enterprises are carried through in terms of financial probity, supply of goods and so on. At national level, the Assembly will have to ensure that sufficient capacity exists to satisfy needs, based on demographic and other trends. It will have to make strategic assessments on all the major categories of need. The Assemblies will encourage an approach to production that leads to an increase in well-being. For example, regional and local Assemblies will make funds available to self-managed co-operatives of farmers, food processors and distributors to encourage local food production.

Many approaches to replacing Gross Domestic Product as the main measure of wealth, growth, and the rise and fall of stock markets are already being tried. Community accounting systems, genuine progress indicators, and local indicators initiatives, are all showing ways to measure social progress in new ways. A broad range of measures and indicators are in use to assess the well-being of a community, or the sustainability of a production process, for example. Accumulating expertise in all of these areas will provide a firm foundation for the new direction of the Assemblies.

The Assemblies will have to set down the minimum earnings that are required for various kinds of households and put

forward suggestions about the range of earnings that will reflect relative skills levels without reproducing the excesses paid to senior managers in the capitalist system.

Redefining the market

History saw the early development of the market and money as the means of exchanging the surplus produce of settled communities and artisans. As surplus, the products were no longer useful to the producer, but the market made them accessible as useful items to others. Traders who travelled from place to place were able to accumulate wealth by buying cheaply in one place, and selling elsewhere at a higher price. As the market gained in importance, some producers began to exploit their own ability to produce beyond their own needs. They began to concentrate on producing primarily for sale in the market. The harder they worked, and the more they developed their technique, the more they were able to accumulate wealth. This accumulating wealth took on a life of its own, tempting competition, and as explained earlier, created its own need for expansion.

For little more than three and a half centuries, expanding value through production of a ballooning volume of commodities for exchange in an ever-widening marketplace has dominated social development. Profit-driven competition leads to overproduction and ecological calamity. Economic collapse, social and political crisis follow. Regulation of market relations by the WTO has been subject to direction by the growing power of profit-driven corporations. The myth of the invisible hand of the free market providing the best possible means of organising the production and distribution of goods on the world market has been exposed many times over.

A new start

In the 20th century, first attempts at a new start by the fledgling revolutionary government in Russia replaced the anarchy of capitalist production. The aim was to bring socially owned property and conscious planning to the fore, whilst retaining the market system. Instead of the much-needed replacement of the

capitalist system worldwide, the early beginnings of the socialist system became isolated. With the infant society under siege, conditions ripened for the defeat of the revolutionaries by the rising layer of state functionaries with Stalin at its head. The internationalist, democratic and gradualist approach to developing a socialised economy and society was replaced by the forced building of "socialism in a single country". All property became state property, and all production was determined by an obsessive, all-encompassing bureaucratically-conceived, and hopelessly inadequate national plan. Democratic self-management of enterprises was replaced by production quotas. Distribution of peasants' surplus agricultural produce through the market was outlawed and replaced by seizure by the state.

As a consequence, food production collapsed and millions died through famine. Eventually, the contradiction between the bureaucracy, an isolated economy and the world capitalist system was impossible to reconcile and the Soviet Union collapsed in 1991. In Yugoslavia, a system of socially-owned, self-managed enterprises operated successfully for many years – until it too became entangled in the debt-and-crisis-ridden nets of the predatory capitalist financial system.

Lessons learned

We are obliged to learn the lessons from 20th century history:

- capitalism is a world system. It must be replaced with a new world system. There is no national solution to the crisis. We must act globally, but we can start locally
- we have to appeal for solidarity and support by workers in other countries, encouraging them to seize control of the TNCs in their countries
- distribution of useful products through the market pre-dates capitalism and will outlive it
- property must be owned collectively and locally, rather than by some remote state body
- production for need based on planning is possible, but cannot and should not completely replace the expression of consumer preference through the market.

Bringing these lessons together with the technical advances made by capitalist, transnational corporations provides the basis for the thinking, conscious market.

The 'thinking' market

Advanced methods of needs analysis and market research, incorporating predictive demography will inform strategic, long-term planning. The results will consist of guidelines for building sustainable production and distribution capacity worldwide. Those employed in this planning process will be accountable to the delegated authority of the elected global Assembly.

Methods of measuring consumption developed further from the most sophisticated existing loyalty card plus market information databases will be deployed to ensure that short-term production and distribution is responsive to individual wants, within the limits of possibility agreed collectively. Producing on-demand to satisfy individual taste has already become normal in some industries. Many cars and computers are assembled only when an order has been placed. While satisfying needs already agreed, the conscious market will expand to respond to many more individual expressions of want. So, for example, web-based facilities for registering an individual's preference profiles will become universal. Everyone would be able to store and update their measurements and holographic images as the basis for virtually designing, "trying on" and ordering customised clothing.

At the shortest response-times, production to restock supermarket shelves is already triggered automatically by registering purchases at the check-out. But the purchasing and supply systems are driven by competitive instinct. The result is that many production workers in food processing and packing live in tents, shacks and hostels close to the plant, available for work at the whim of the employer, and paid – if at all – only for the hours that they do. This dehumanising result of the profit-driven application of technology will easily be ended. With a system of planned production for need, the haphazard consequences of the unconscious market will be drastically reduced.

Used sensitively, the combined techniques of planning for need and measured consumption can be used to ensure that the needs of all vulnerable people are monitored and met. They can also be used to inform and manage public health campaigns around nutrition, for example.

Distribution of wealth

The distribution of profits to disinterested shareholders – the current private owners of capital, will cease. Stock, currency and other markets for speculation will be closed. The wealth generated by workers realised from sales of their products will be distributed according to the following principles:

1. A part will be paid to the workers in the enterprise. An individual's income from employment will be set in relation to the basic living wage, supplemented by skill and performance-related amounts. The level of the basic living wage will be determined from the numbers of hours of work required to generate the value of products and services needed to meet basic needs. It will be reviewed regularly.
2. A part will be retained for reinvestment in, and further development of the organisation.
3. The value generated by an organisation, over and above the wages paid to workers, and the amounts retained for reinvestment, will be divided amongst the Social Needs Funds to support education and research; health and social care; recreation and the arts; infrastructure development including energy, communications and transport; pensions, and incomes for those unable to work through disability or illness.

The proportion of the social surplus allocated to each of the various Social Needs Funds will be determined through planning rounds controlled by the democratic process. Social Needs Funds will be administered according to rules established through Assembly structures. The IMF, World Bank and WTO will top the list for replacement by new institutions directly accountable to the World Assembly. These will take measures to ensure that

incomes and the standard of living are progressively equalised around the world.

Debt

The burden of repayment imposed on the people of the heavily-indebted poor countries by the IMF, the World Bank and the regional banks, as the price of forced entry into the world market, will be cancelled. The status of personal debt in the transitional period will be subject to assessment by committees of the local Assembly. Loan-sharking will be outlawed. Personal credit and debt will be administered by local credit unions and mutual funds.

Housing

Private housing for owner-occupiers will continue, but strict limits will be imposed on the ownership of multiple properties by individuals. Increased capacity will eliminate cycles of price inflation and collapse. Plentiful supplies of collectively-owned, rented properties will be available for temporary occupation, as well as long-term stewardship.

The future

As the socialised system matures it will identify, measure, and satisfy all the basic needs of people throughout the world, according to criteria agreed through the democratic process. In a system focused on producing for need rather than on an endless profit escalator, society will offer the potential for reducing working hours for those now in work, and, for the hundreds of millions without work, the opportunity to provide for their families for the first time. Society will move forward decisively to the time when manual work becomes a smaller and smaller part of life and when everyone can live in the fullest sense according to their needs.

Cars as socially useful objects

At present, car production and sales are based solely on the need to generate profit in a competitive market, open up new markets and persuade government to build roads. But their use value, which is freedom of movement, is declining rapidly and is being overwhelmed by the ecological and social consequences of mass car use. Even capitalism recognises these problems – although it only reinforces the problem or offers market-led "solutions" like car pricing which ignore the basic problems. Car production for social need would establish the car's place in holistic, integrated affordable transport systems, with people living closer to their work, and a full-cost assessment of pollution. Price will have to take account of all these factors. Car pooling, giving people access to shared cars when they need them, would be rapidly developed as an alternative to private ownership, since most cars remain idle for the majority of the time. Extending dial-a-ride and community transport systems would be boosted alongside research into eco-friendly fuel systems. There would have to be agreements about limiting the use of cars in built-up areas.

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News from the future: when health comes first

These questions and answers come from interviews by our health correspondent. Set at some future date in the not too distant future, they look at the way health care has changed since the power of the global corporations was broken.

Q. What triggered the transfer of pharmaceuticals to social ownership?
A. Problems with the big drug companies had been steadily making themselves felt in the public consciousness since the 1980s. By 2002, although around half of the world's top ten pharmaceuticals were formally based in the US (Pfizer, Merck, Johnson & Johnson, Bristol-Myers Squibb and Wyeth) and the other half in Europe (British GlaxoSmithKline, AstraZeneca, Swiss Novartis and Roche, and the French Aventis) but all had become global enterprises. Their enormous power came into sharp conflict with mounting health care funding problems.

A series of studies revealed some unacceptable truths: for more than two decades, pharmaceuticals had been a colossal industry, with total world sales of prescription drugs in 2002 calculated at around $400 billion. And they were making colossal profits. By charging far higher prices at home, than was possible elsewhere, it had become the most profitable industry in the United States.

In 1990 the world's top ten drug companies had profits of nearly 25% of sales. In 2002, their combined profits ($35.9 billion) were more than those of all the other 490 businesses put together ($33.7 billion).

Q. These are astounding figures. So how did they do it?
A. These enterprises had something really special. In the age of the so-called free market they were protected from competition. The international system of licensing gave them exclusive marketing rights and the use of patents protected them from competitive products.

The general tendency to privatisation promoted by the

corporations through the WTO and national legislation established a restrictive system of patents and intellectual property rights. These anti-competitive measures meant that the huge profits could be defended against even small-scale defiant attempts at generic drug production by companies which had sprung up in Asia and South America. There was a huge public outcry when hundreds of millions of people with AIDS, particularly in Africa, were left to die without drugs because neither they nor their governments could afford the artificially high prices. The deal that resulted from the campaign meant that a few million began to receive treatment. But the titanic power wielded by the corporations meant that the issue disappeared from public view – for a time.

With minor changes to products, frequent legislative changes in favour of protecting profits, and teams of highly paid lawyers to exploit them, patents could be extended for many years beyond the original 20 year limits and stratospheric prices maintained. Changes in the law meant that the companies began to claim intellectual property rights over medicines derived from plants by forest-dwellers and people living in tribal societies. Collective, freely available knowledge developed over thousands of years suddenly passed into the hands of private, for-profit corporations.

Q. So how did it all change? What went wrong for the drug companies?
A. Well, on the surface, it was a combination of things, really. You couldn't say it was down to just one cause. But underlying it was the general downturn in the economy that set in around 2003-04 before the whole thing unravelled. The downturn meant that funding health, education and social care had become increasingly difficult as tax revenue declined, and the turn to privatisation diverted more and more tax money into shareholders' pockets. In countries with work-based health insurance like the US, employers started reducing benefits, and in countries with a more general form of insurance, and even in the UK with its tax-funded health care, the governments started passing more costs to the individual. Ironically, previous

successes in reducing morbidity and mortality in the industrialised countries meant that there were relatively more older people placing additional burdens on the care services. In China, with the world's biggest population, the policy that attempted to slow population growth by allowing only one child per couple had a similar effect. And despite the vast power of the drug companies, patents on several of their blockbusters, the source of much of their profits, ran out.

But things turned really nasty in the US, the world's richest, and most indebted country when many older people – seniors – more than a quarter of the population by 2004, could no longer afford the over-priced drugs they needed. They were forced to decide between drugs and heating or food. Some would take the drugs less often than prescribed, or share them with others. Others failed to take the drugs they were prescribed altogether, but were too proud and embarrassed to admit it. So their doctors were sometimes misled into thinking that the previous prescription was inadequate and unknowingly compounded the problem by either increasing the dose, or prescribing another combination of drugs. Some people turned to the Internet, illegally buying from cheaper sources in Canada and Mexico. Others living near the border took buses, and organised coach trips. Of course the drug companies pressured the government to make even this illegal. Anger and frustration grew, and the previously conservative older generation took to the streets.

Q. How did the transfer to publicly funded research change things?

A. Just as soon as research was freed from the constraints imposed by corporate interests, the Global Health Alliance began to set priorities according to need. Many of the so-called "life-style" programmes that Big Pharma had been running were stopped, much to the relief of the scientists they had employed. Major innovations followed quite swiftly. Malaria, bilharzias, and several of the major killers and disablers in the previously neglected countries of the South soon succumbed to a multi-pronged attack. The insects and other carriers which spread those diseases were eradicated or controlled through drainage

and similar relevant schemes, and new drugs put into mass production to treat those who had been infected before the preventive measures took effect.

HIV/Aids was more difficult to deal with. Treating the symptoms became much easier as the drugs were produced and distributed cheaply, but the social and psychological problems took quite a while to resolve until the civil wars died down and the use of rape as a weapon of repression ceased. We developed a combination of education and counselling programmes which built on local cultures – and these are still being used. Fortunately there were hundreds of thousands of people, highly skilled in the art of persuasion, and well-informed about health issues, who became available for retraining just at the right moment.

Q. Who were they?
A. They had previously made up the pharmaceutical corporations' armies of marketing and sales forces. Nowadays, as soon as a new drug has been approved, it and the dosage regimes for all indicated conditions are entered into the GHA's prescribing database which is referenced every time a clinician records a diagnosis, or even a set of signs and symptoms into a patient's record. So there's no longer a requirement for a separate process of informing clinicians about new developments. They simply become available for use. And there's no longer any need for the big teams that competed to push an array of virtually identical drugs. Many of them are now delighted to be doing something useful with their skills.

Q. How is research funded and organised now?
A. Contributions are provided to the GHA by all participating countries, regions and states. The amount each country provides is determined partly by its population, and partly according to its ability to pay. There is still significant inequality left over from before, but this is now reducing, year by year, and we expect to be able to drop the ability-to-pay clause quite soon.

There are global programmes to deal with universal problems – travel has become much more widespread as, these days,

people are much freer to live and work where they want. So infectious diseases have much greater potential to spread.

Research groups in both the universities and those operating independently are invited to bid for funds for projects that are on the list, and they can also put forward their own suggestions for things that excite them. The committee meets three or four times a year to allocate awards, and to consider new proposals. The members of the committee are elected – some through the academic network, and some from the participating countries' care receivers and providers. The quality of research units is assessed by regular audits, and these are available to the committee along with the project bids.

Q. What happens to the results of the research projects?
A. Now that science is publicly funded, the results of all research can be properly checked and confirmed by laboratories in different countries, before being released into the public domain. When we got rid of the old laws on intellectual property rights, the old competitive secrecy dissolved, collaborations between centres developed very quickly and progress in most areas has become much more rapid. Unlimited bandwidth means that global teleconferencing is now the normal means of sharing knowledge. But there is still no substitute for direct human contact, so study centres and research groups regularly exchange members and expertise around the world.

Q. Without intellectual property rights, how do people get recognition for their work?
A. Most people are more than happy to have their results taken up widely and put to use and they are usually credited in further research. There are still some occasions when later researchers "borrow" the work of others and fail to acknowledge the source, but the background infrastructure technologies which support the global research programmes make this easy to spot. When the people who do this are discovered, it is widely publicised, and they tend not to get any more funding for quite a while!

Q. What benefits have come from the results of the Human

Genome Project and follow-on activities?
A. As you know, DNA samples are taken from all babies – normally at birth. If there is something in the biological family's history to suggest a potentially avoidable problem, a sample may be taken from the foetus in its sixth month. There are now many inheritable diseases which we can inhibit by switching off the genes responsible, though we've a long way to go in understanding the full complexity of gene interactions, and the unwanted effects often mean that continuing care is required. From the genetic profile of a foetus we can advise the parents much more accurately about the likely health career of their baby, and jointly consider the options available. For every baby we can identify many of the vulnerabilities they exhibit, and set up a range of plans to avoid or deal with at least the most likely of the external threats. So, the information is available if parents want to take advantage of these plans from or before birth. If they don't, the information is kept until the child achieves the level of competence necessary to make their own decisions.

Of course, all of this was subject to years of debate. Until we got rid of insurance-based, self-funded health care, and the other inequitable systems, there were understandable concerns about discrimination, job insecurity, and the like. Some people are still worried about privacy and confidentiality – again with good reason. So all access to genetic data is restricted according to the patient's wishes, and if they want, they are notified whenever access is made.

But, the most important thing to remember is that these developments must be seen in the context of the major shift of emphasis to preventing disease. Genomics has made a contribution to this, but it has been relatively small when compared to the elimination of inequality, the move to sustainable manufacture, the adoption of clean engine technologies, global action on clean water, healthy eating, education, and not least housing.

Q. How has the pattern of disease changed globally?
A. We'd known for decades that the links between poverty and disease are very strong, but only when conditions changed and

we introduced a society built around satisfying needs and the principle of equality did it become possible to do anything more than attempt to deal with the consequences. We're now much more focussed on preventing disease, though of course people don't always follow the advice, so some still get sick and accidents continue to happen. And there are – and always will be – new threats of disease from mutating viruses which have to be spotted and stopped in their tracks before they make any headway in the population.

Nowadays people everywhere have, or are close to getting access to clean water and sanitation, education and greatly improved housing. Child mortality from diseases like diarrhoea has become something you read about in history books. Tuberculosis does recur occasionally, but is mostly eradicated. Polio was finally beaten, once the mistrust in Nigeria and other countries about the real intentions of the vaccination programme was overcome.

We'll still be dealing with the burden of cancer for years to come, but the shocking rise in new cases in the latter part of the 20th century is now in reverse. The build-up of carcinogens in the atmosphere is clearing faster than the residues in the oceans, and these continue to make their way up through the food chain.

Q. What about the connection between food and health?
A. In the places which had been relatively better off – like the former United States of America, and some of the countries in the former European Union – it took quite a while to break the addictions to the deadly fat, sugar and red meat diets which had been so profitable for the big corporations like Coca-Cola, McDonald's and the old supermarket chains. But now the objectives of food production put nutrition, and taste top of the list.

The connection between good health and good food always seemed so obvious to most people in health care, but when the transnationals started organising disinformation campaigns trying to distort and misrepresent the best scientific advice, it became clear that their time had come.

As is general in most branches of production now, land is held

by Community Land Trusts, or variations on the theme in different countries. The organisations which produce and distribute food are jointly owned by co-operating groups of suppliers, producers, and consumers. So, all profits are recycled back into improving production and reducing the working day. We no longer depend on the exploitation of cheap labour which used to be an essential part of food production; producers get a fair price for their produce, whereas before, the competition between giant supermarket chains and their vast purchasing power forced prices down below the cost of production. It was the drive for profit which filled our mouths and arteries with hydrogenated fat, and the same drive that, for a while, broke the traditional agricultural practices like seed-saving.

In places like Sub-Saharan Africa, where the majority of people had been severely malnourished for decades with millions starving to death, the food aid programmes were dramatically increased – but without the accompanying debts which had previously further impoverished them and many other countries. This was only necessary whilst land reform was carried out, and domestic food production could get going. Nowadays, life-expectancy there is approaching the norm. And the wide variation which used to separate the rich and poor has narrowed quite dramatically.