

An Exploration of the Late Twenty-first Century

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A scenario suggests an 2020-2030 global crisis of overpopulation, food shortage, famine, plague and war characterised by the resurgence of fascism. The question then arises: will the disruption be so total as to block any forecasting, or can further developments be foreseen? The possibility of recovery is considered by reference to the European Renaissance which followed the terrible fourteenth century when one-half or one-third of the population died of plague. While the Renaissance was distinguished by a flourishing of the arts, it also featured widespread warfare and disruption in Europe together with the conquest of Central and South America, with the killing, slavery and decimation of indigenous populations. The precedent is frightful. It is concluded that recovery from the twenty-first century calamity may span centuries.¹

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The Choice of Scenario

Futures research may consist of the study of a set of alternative scenarios, or pictures of possible futures; with each considering the implications of a given paradigm, world view or set of beliefs (including political and religious persuasions) which will have been formed by individual and collective experiences. That may be the preferred methodology for a university department or a government agency, where general agreement is impossible or where several clients may each desire an exploration of their preferred future, based on their particular beliefs.

An alternative approach is to explore the most likely future, based on a reading of relevant research and past history. This process requires the researcher to make a conscious effort to recognise his or her individual set of attitudes and to set these to one side, being guided by proven theory and concrete experience.

The output of the first approach might be a set of alternative projections for the client to choose among. This collection could cover a considerable range of possibilities, and (while being somewhat constrained by physical limits) may be so diverse as to provide very little guidance on what is to be expected. The second approach provides one scenario, backed by argument setting down why that particular picture is thought to represent the most probable future.

My own work has recently followed the second, restricted path. This is made easier since it has been an individual effort, so that while I have had to identify my own paradigm preference, I have not had to react to the preferences of others.

I should identify myself briefly as a mathematician and physicist by training. As a futures researcher I have long been immersed in sociology, theories of economics and history. Politically I am both socialist and environmentalist (a mixture of the red and the green), with rather conservative tastes (my community activities have for some time been focussed on the preservation of a valued status quo in what was once a mixed economy). I feel that stable societies (such as New Zealand has been) should develop slowly, with full regard for the wisdom of past generations, in such a way as to take better care of the environment and use the fruits of progress for the general good. I have developed a policy direction which would lead to a scenario consistent with my world view, paradigm, desires and philosophical position. (Robinson 1994)

A most-probable scenario does not, however, conform to those principles. Not only is that pattern not followed at present, but it cannot be expected at some later date. (Robinson 1996a, 1996b)

The guidance for this most probable scenario has been provided by global

models, by scientific studies and analyses, by recent or current events and from history. The result has been extremely negative.

Two features of my situation which colour this scenario are the European tradition of Pakeha New Zealand, and its geographical setting as a small, periphery nation. My cultural heritage is reflected in the choice of late medieval Europe as a template for the modern world. Then, as a non-central nation, New Zealand does not share in the few positive elements of the new world order, which are concentrated at present in the USA. I see the present as a continuing long-term depression and cannot share the optimism of American scholar Immanuel Wallerstein who expects an economic upturn around the year 2000. (Wallerstein 1996: 228)

Many commentators have been highly critical of the picture built up of probable developments to the middle of the twenty-first century, believing that I show very little faith in human nature or in the ability of human society to adapt and progress. The extension of the scenario outlined here has been an effort to consider whether a global crisis may be followed by a general renaissance and recovery, which might represent an improvement in general well-being.

As will be evident, a scanning of history together with an appreciation of major current trends has led to the conclusion that the disruption may continue for centuries. There is no indication that the forecast global catastrophe would lead to an awakening of general awareness, to an emphasis on collective quality of life, or to an awakening of genuine empathy for the environment and for other life forms.

It is a bleak picture which emerges. The question must be considered whether this exercise, with its painful outcome, should be attempted at all. Am I justified in putting aside my "faith in human nature" or belief in progress, and looking so coldly and rationally on future expectations?

This comment is such a frequent criticism of my work that it cannot be ignored. The suggestion that we should attempt to be "positive" and optimistic is of considerable importance, for it brings into question the scientific enterprise of futures research - and, as a scientist by inclination and training I cannot but rely on reason rather than emotion. I prefer to seek the truth; it is only by recognising the magnitude of the impending catastrophe facing us that we may hope to develop a suitable response. I do not believe that a work such as this should offer hope, when none is in sight. That would be less than honest.

This scenario analysis need not, however, be considered as an exercise in futility. After all, before setting out to plan for the future, it is first necessary to understand what that future would hold if present trends continue. If all

expectations were positive, then a continuation of existing behaviour could be regarded with equanimity. But if the probable future is replete with problems, or pregnant with expected catastrophe, the search must be for change and how to bring it about.

This work is bleak. The answer to such critics comes in the form of a challenge. If there is to be room for optimism, then an alternative path must be mapped out. Here I point to the dangers on the horizon. Once they are recognised, it should be possible to commence a collective effort to move in more positive and realistic directions.

I remain unconvinced that mankind has the wisdom to respond to such a challenge, but I feel that we should at least try. This scenario is presented as a tool to assist the effort. It sets down the magnitude of the problem, including expected events, and forms a template for the construction of a new blueprint for global action.

The Coming Quarter Century²

Every period of history has its changes and shocks, with turbulence giving a bumpy ride to an established order. Long term trends sit uncomfortably on a series of crises and short-term events. The next several decades will most probably continue recent trends, with multiple crises, of considerable importance for those most affected but - for some time - no global conflict to compare with the two world wars of the twentieth century or semi-universal breakdown such as the 1929-1933 stock market collapses. The basic structure of global civilisation should continue with little change despite the talk of a "new" world order. Colonialism has been replaced by neo-colonialism; the center remains a parasite on the periphery.

Many of the expected shocks have been foreseen for some time now, and indeed repeat events of the recent past. The global movement of international finance continues to create regional "economic miracles" with each growth balloon eventually bursting. The resultant troubles may be blamed on poor management, nations forced to sell their basic resources in order to qualify for international assistance, and the new owners (principally the Trans-National Corporations) gain yet another collection of assets and another set of captive markets. Despite several "crises of capitalism", the massive stock market and financial collapses have not brought the system down, and may not do so in the coming decades.

By 1970 the USA had begun to import oil, and the scene was set for the "oil shocks" of the OPEC price rises and the ongoing struggle to control the

Middle East oil reserves. That end to self-sufficiency had been forecast in 1946, but was denied and ignored - and even when it occurred, the importance of the physical limits to stocks was not fully recognised. Around the turn of the century, perhaps by the year 2010, world production may lag behind demand. (Campbell 1994, Ivanhoe 1995) A surprised world may then shake itself into action, and start to make a somewhat better use of energy. Yet, overall, there would be no great change in behaviour and no effort to cease the exhaustion of available fossil fuels.

The response to global warming and the steady destruction of habitats and extinction of other species may also continue to be inadequate. Even though the developed (or "over-developed") world had reached the end of a growth phase by 1970, and peoples could have moved to a full-employment "leisure society", economic growth has continued, and will continue, as the principal economic driving force.

The expansion of human numbers and activities continues to overwhelm the environment, and many other species may become extinct (as currently forecast, and as has been the case in previous periods of human expansion).

Developed economies have for some centuries experienced a repeating long-term series of phases of growth followed by stagnation or decay. This pattern is known as a Kondratief cycle. (Robinson 1989: 37-46) These cycles are of variable duration. The last downturn following the 1929 stock market crash led to the spread of fascism and the Second World War, with the post-war growth period commencing 16 years later in 1945 (and the downturn period is even shorter if the war years are considered as a growth period). The growth period which followed covered the 25 years from 1945 to 1970.

While there are significant features common to every cycle, the development of each growth and decline phase will be strongly affected by current historical circumstances. Application of the concept of long-term economic cycles must then be a cautious blend of a repeated pattern with the particular, unique circumstances of the time.

The major force behind economic growth is need. Need for food, housing, clothing. Need for infrastructures such as transport systems, factories, schools and controlling bureaucracies (of private enterprise and government). Those needs may be due to the disruption of war - destruction by natural or man-made means is a considerable stimulus to the collective effort which is called economic growth. Provided the resources are at hand, building up the material base of a civilisation can be a period of general satisfaction.

Once the growth phase has set in place a major part of the infrastructure, less effort is called for. Some great civilisations of the past have extended their duration by additional collective activities of uncertain real immediate value in

order to provide social cohesion. These efforts include the pyramid-building of the Egyptians and the construction of mighty Gothic cathedrals across medieval Europe.

Uncontrolled free-enterprise capitalism cannot face the challenge of success. An economic system based firmly on the generation of unlimited profit, which demands never-ending growth, cannot adapt to the new situation where the need is to spread less effort evenly and to develop a satisfying leisure society.

The downturn of the cycle is a consequence of the growth phase. When the growth of capital, and the generation of profit, reach their upper limit, new plant is planned and under construction following past growth-oriented decisions. Then as many enterprises cease to grow, there is a flow-on effect as orders are canceled and the purchasing power of displaced workers disappears. The major disruption in the investment opportunities of capital sends shocks through the market. The collapse of 1929-33 in the developed world was rapid and considerable.

The present downturn had a less abrupt onset. The transition took pace gradually over a period of some years (1968-1973). A simple reading around 1980, based on the average length of the cycle, suggested to some commentators that there would be an upturn around 1990. However, evidence available then together with a consideration of the mechanics of the cycle led me to a different conclusion. Thus while a number of speakers at futures conferences in 1980 suggested an upturn in 1990, I felt otherwise.

A number of factors were preventing, have prevented, and would continue to prevent, a full Kondratieff crash.

- a) State welfare schemes recycle purchasing power through the population.
- b) A large state sector has been built up during the growth phase. The takeover of these resources by capital provides an outlet for the generation of profit, thus alleviating the problem of investment of excess capital.
- c) There is now a well-developed international financial system which, while doing considerable harm to peripheral developing nations and to the working classes, is proving a robust system in preventing a complete collapse despite many financial shocks.
- d) The neo-colonisation of the "New Economic Order", controlled from one major centre (USA), provides many opportunities for new investment.

A repeating shorter term pattern is evident. Excess capital moves into a new region, overheating the system and creating an "economic miracle". When the inevitable crash occurs, the blame is placed on corruption or stupidity of the recipient. Harsh conditions are imposed while the ailing economies are kept afloat. These include the requirement that the struggling peoples sell their businesses and basic services to international capital. In the case of my

unfortunate country, New Zealand, the process was initiated by a social democratic party and is driven by the nation's own leaders. Once a region is gutted, capital moves on.

The global excess capital thus finds new victims and this keeps the system from collapse. The process, backed by the armed might of the one global superpower, provides a constant stream of profit from the global periphery to the center.

The Kondratief pattern is of destruction and then rebuilding until the system overheats again. Without collapse the growth period, stimulated by the need to repair the damage of the crash, would not occur. My 1980 forecast (mentioned in later publications, see Robinson 1989: 46, 179 and 1996a: 91-93, 106) has proved robust to date, and I believe that there would be no complete collapse, and no consequent growth phase, until well into the next century.

My forecast, based largely on the pattern driving a Kondratief cycle, is of a period which largely breaks with that pattern. It is in many ways a period of confused economic activity - the continuing profit generation is typical of a growth phase (Kleinknecht 1992: 8) while the high unemployment and social distress are features of a decay phase.

It has been recognised previously that scenario construction is influenced by the world view (paradigm) and situation of the scenario builder. The viewpoint of scholars in the USA (such as the more optimistic expectations of Wallerstein, already noted) and those from the Third World may differ considerably. Here I present a non-conformist view (which differs markedly from the current New Zealand conventional wisdom) from a small periphery country which developed as part of the colonial West, and which is drifting towards Third World status. Each nation, and each region, would be well served by a team which takes global trends and considers local developments, including the best way to adjust to a dangerous and unstable world economy.

This is a "business as usual" scenario up to the time that food shortages occur across wide regions of the "developing" world - principally South East Asia. The appearance of a gap between food supply and demand is derived from the extensive global modelling of the 1970s. (Carter et al 1976, Cole et al 1973, Cole 1977, Herrera et al 1976, Meadows et al 1982, Mesarovic and Pestel 1974, Onishi et al 1975, Parker and Raftery 1978, Poquet 1978, Richardson 1978, Roberts 1977, Robinson 1979) One feature of many global models is a forecast of population growth past a sustainable level. (Robinson 1979) In such models, while population growth was assumed to slow down, many populations more than double before reaching stability. Recent estimates and forecasts of population numbers are very similar to those made twenty years ago, so the models are proving robust in that respect.

Global models describe an ongoing race between increasing populations and growing food production. The increases in yields from new crops, more fertilizers and new arable land would be somewhat countered by limitations in water supplies, the spread of human habitation over arable land, desertification and salinisation.

The models assume steady increases in food productivity (more fertilizers, improved crop varieties, etc.) and in the area of arable land under cultivation. The question which had to be tested was whether the improvements (which could harm the environment) could keep ahead of population growth. The answer is that it is highly unlikely. Desertification and the shortage of available water (with many countries, such as the USA, mining ground water aquifers which formed over geological time) are just two of a number of developments which would act to reduce food production.

Once a system gets near a breaking point, peoples would be living on a knife edge. There would be some good years, with favourable weather and satisfactory trading conditions. Then a combination of adverse factors (economic downturn together with some years of crop failure) may occur together and food shortages would appear across wide areas. The root cause, the over-reaching of a limit to growth, past sustainability, can be obscured by the multiplicity of other factors which together would determine the onset of famine. There may be little recognition of just what is happening.

The gap between supply and demand would open up around the decade 2020-2030. The immediate cause may be a change in weather, a few years of poor crops in stressed regions. Food shortages, particularly in the many immense cities of the Third World, would result in starvation and disease. The stressed conditions would provide conditions for a resurgence of plagues or similar disease.

The effort to feed the increasing global population is widely recognised as "the defining issue" for the human future. The gravity of the situation is such that we cannot avoid catastrophe if we "keep sleepwalking through history". (Brown et al 1996: 7 and 17)

This conception that ongoing world growth is not sustainable is similar to the 1992 conclusion of members of the team who wrote the 1972 "Limits to growth". They believe that subsequent scientific information has confirmed their fears and that, without a transition to a sustainable system, we face the virtually certain prospect of a global collapse. They are more hopeful than I, for while I see no change in human behaviour, they think that the human race is up to the challenge. (Meadows et al 1992: xvii)

The extension of economic development and the ability of poorer peoples to purchase food supplies would have been limited as profits have moved away

from periphery regions to the developed center. Many of the nations first affected would have economies damaged by the present and forecast New International Economic Order of "liberal democracy" or free market capitalism which exists to further the interests of the most powerful and wealthy, and in particular to suit the demands of the Trans-National Corporations (as seen in the many free trade "agreements" formulated by central powers, such as the recent Multilateral Agreement on Investment or MAI which would prevent any country from protecting itself against foreign takeover).

The forecast widespread hunger and disease would come to a world of considerable inequality. The disruption of economies would be followed by struggle for limited resources, internal anarchy and war between states. The international economy would finally collapse and the rich, developed countries would draw in on their own resources. Puzzled and distressed peoples in all parts of the world would turn from the present system with its pretense of democracy to the alternative of strong leadership and fascism. In many cases the history of Germany following the First World War would repeat, with a time of anarchy ruled by local war-lords replaced by a strong central authority which would allow no challenge, no personal freedom.

That scenario, which follows the world to the middle of the next century has been developed in my previous publications (Robinson 1989, 1996a, 1996b). We now consider what may follow. Is it possible to envisage further developments past that point? Can the scenario continue with a broad-brush description of the probable world past that time of chaos? Can we see through the turbulence to what may follow? An attempt to seek an answer is presented below.

The Idea of Renaissance

The scenario to this point, to the catastrophic events of the decade 2020-2030, has been informed principally by global modeling with assistance from economic, political and social theory, plus an occasional reference to events of the twentieth century.

An effort to consider further expectations requires a deeper background. My belief is that an extended scenario should be based on an appreciation of events and trends over a significantly longer time scale than that envisaged. Thus a view towards the end of the next century requires the consideration of millennia of past experience.

The further analysis must then rely principally on history as a guide. The general pattern of historical evolution can then be combined with an aware-

ness of major recent trends and of the impact of improved technologies and knowledge.

The major consideration here is whether global catastrophe may be followed by recovery and a renaissance of prosperous organised human society within a sustainable ecology (at a new and more modest level, given the destruction of much of the environment).

The choice of a comparable historical period is of the centuries surrounding the "calamitous fourteenth century", a time of famine and plague in Europe. In the Black Death of the several years following 1347 (Pirenne: 401, Kurtz: 577), between one-third and one-half of Europe perished. The disruption and conflict of that century have many resonances with our own time. The similarities have been noted and considered as "A distant mirror" by historian Barbara Tuckman (1979).

The historical period following the Black Death has been characterised by a movement known to generations as the "Renaissance" (Hodgett 1972: 216), which commenced in Italy and spread to France and other parts of Europe. The rebirth of classical (Greek and Roman) thought and art has been widely considered as a progressive development which signalled the end of a thousand years of stagnation and the beginning of modern Europe (Kurtz 1970: 577). The Renaissance is often viewed as a key period which marked a transformation from dark ages into modernity.

"To us, who see the two cultural complexes very sharply separated, it appears as if the receptiveness to the eternal youth of antiquity and the denial of the entire worn-out apparatus of the medieval expression of thought had come, like a sudden revelation, to everyone at once. ... As if the golden harmony of classical antiquity had suddenly stood before their eyes like a long-awaited liberation, and as if they had embraced antiquity with the joy of someone who had finally found his salvation." (Huizinga 1996: 382)

Such a view is, however, too simplistic. In his seminal work Huizinga questioned that widely held modern viewpoint.

"But this was not the case. In the middle of the garden of medieval thought, between the luxuriantly growing old seeds, classicism grew gradually. ... The relationship between rising humanism and the dying spirit of the Middle Ages is much more complicated than we are inclined to imagine." (Huizinga 1996: 382)

Reference to the duration of the Renaissance shows that it was not a clearly-defined period; there was no immediate change from one period to the next. While one consideration of the medieval world continues into the sixteenth century (Hodgett 1972), a discussion of the Renaissance covers an overlapping period from around 1450 to 1620 (Hale 1993: xix). The subsequent reformation has a clearer milestone of 1517 when Martin Luther posted his 95 theses against the sale of indulgences on the door of Wittenberg Palace Church (Kurtz 1970: 579). Hale's historical analysis of the Renaissance then commences within the Middle Ages and continues well into the Reformation.

Indeed the rebirth of classical Greek and Roman thought dates from an even earlier time, in the eleventh and twelfth centuries, and came to the West via Muslim scholars (Averoes and Avicenna) and Hebrew scholar Malmonides. Classical thought then influenced late medieval philosophers and theologians such as St. Thomas Aquinas who completed his "Summa theologica" in 1273. The spread of naturalistic science underpinned Aquinas' work and the growth of the experimental method and the logic of science was established by philosophers such as Roger Bacon (1220-1292) and William of Ockham (1285-1349). Yet the change was most marked in the fifteenth century. It was then, according to most historians, that the major stages of the transformation, or rebirth of antiquity (renaissance), occurred.

However complicated the process, it appears that the catastrophes of the fourteenth century were followed by a lively rebirth of cultures which has seemed a veritable renaissance to many commentators, which marked the end of the Middle Ages and which set the scene for the Reformation and the modern world. Let us now examine that period and consider whether that picture is accurate, and whether a similar renaissance might be reasonably expected to follow the catastrophes forecast for the second quarter of the twenty-first century.

From Middle Ages through Catastrophe to Renaissance

The twelfth and thirteenth centuries were a period of expansion, with economic growth based principally on the development of new technologies and the greater use of water power. This was an era when the economy was buoyant and growing trade required a larger volume of currency to finance it. (Hodgett 1972: 104) The invention of the fulling mill in the late twelfth century has been regarded as instigating the industrial revolution of that time. (Carus-Wilson: quoted in Hodgett 1972: 137) There was at the same time significant population growth and a increase in the number and size of towns.

The forms of economic organization were changing. For example, the medieval cloth industry in the closing centuries of the Middle Ages was becoming organized on a capitalist basis, with artisans in the different branches of the industry being dependent on entrepreneurs. (Hodgett 1972: 139)

That expansion was faltering by the beginning of the fourteenth century, as capital was in less plentiful supply towards the close of the thirteenth century, and the 200 years after 1320 were a period of down-turn in the economy as a whole. (Hodgett 1972: 100 and 212)

The weather pattern was changing also - a physical chill settled on the fourteenth century from its very start; the Baltic Sea froze over twice, in 1303 and 1306-7. A centuries-long warmer period came to an end, and the average Northern temperature fell around one degree centigrade during the fourteenth century. (Bryson and Murray 1977)

As is often the case, there were a number of concurrent trends and many significant events can be seen to overlap. Social change is frequently brought about by a combination of forces, sometimes set off by a event which acts as a catalyst on a system which is poised on the brink of change. (For example, the French Revolution was stimulated by the previous bad weather and resultant poor crops.)

The expansion was then faltering when the Black Death struck. Indeed, the growth period and urbanisation had set the scene for starvation and the spread of plague. The system was near its potential limit and collapsed under pressure. That catastrophic event was followed by a period of extreme disruption.

"Nothing more bewildering and more full of contrasts can be imagined than the period extending from the beginning of the fourteenth to about the middle of the fifteenth century. The whole of European society, from the depths to the surface, was as though in a state of fermentation. ... the peoples were perturbed by social insurrections, excited by the hasty quarrels of the parties, or the prey of a general unrest which sometimes found expression in tentative reforms, and sometimes the oppression of the weaker classes by the more powerful. A spirit of restlessness that almost amounted to mental confusion." (Pirenne: 379)

The image of death, including the "danse macabre" (dance of death) was ever-present. "No other age has so forcefully and continuously impressed the idea of death on the whole population as did the fifteenth century, in which the call of the memento mori [reminder of death] echoes throughout the whole of life." (Huizinga 1996: 156)

The reaction to the fourteenth century plague had been one of terror and

mysticism. During the Black Death bands of penitents moved about the country in “a sort of ecstatic delirium” (Pirenne: 400 and 401). Most people sought solace in magic and turned from reason, science and methodology. (Hale 1993: 580)

The Black Death was followed by political and economic disorder and a crisis in the Church when the papacy moved from Rome and was then rent by schism, with two or more candidates claiming to be pope. While this period of upheaval may have led on to the development of humanism, a program of educational and moral reform based on an admiration for antiquity, and to the demand for religious change which inspired the Reformation (Rabb 1993: xi), the more immediate reaction was disruptive.

The religious authorities reacted brutally against the new challenges. By the sixteenth century, inquisitors and censors were overworked and some 100, 000 witches were killed throughout Europe. There was little emphasis on caring for the well-being of others in these times of adversity.

“Between hellish fears and the most childish jokes, between cruel harshness and sentimental sympathy the people stagger - like a giant with the head of a child, hither and thither. Between the absolute denial of all worldly joys and a frantic yearning for wealth and pleasure, between dark hatred and merry conviviality, they lived in extremes. ... Throughout the literature and chronicles of the time, from proverb to pious tract, there echoes the bitter hatred of the rich, the complaint over the greed of the great. ... It is an evil world. The fires of hatred and violence burn fiercely. Evil is powerful, the devil covers a darkened earth with his black wings. And soon the end of the world is expected. But mankind does not repent, the church struggles, and the preachers and poets warn and lament in vain.” (Huizinga 1996: 24, 26, 29)

“With its bear-baitings, judicial torture and witch burnings, and with rare exceptions its indifference to the welfare of peg-legged or chronically sick ex-servicemen, this was not a humanitarian age.” (Hale 1993: 129, 446, 474)

The courts of Europe lived in a fantasy world of complex symbolism and extravagant dress. The artificiality of the tournament reached new extremes, in a denial of the misery of the surrounding world.

“The greater the contrast with the misery of daily life, the more indispensable the festival and the stronger the means required to bestow splendor on life by virtue of the ecstasy of beauty and enjoyment that lights up the darkness of

reality.” (Huizinga 1996: 303)

Europeans took their brutal ways to other parts of the world as they explored and colonised in the late fifteenth century and thereafter. Cortes in Mexico and Pizarro in Peru brought death and destruction to the peoples newly “discovered”. In this, they continued the ways of their homelands. The conquistadors were men trained in war, and their nobility were little better than armed and castled warlords. (Innes 1969: 9 and 12)

After the population decline of the fourteenth century there was a reduction in pressure on available resources. Less work was required for greater yields as only good land was cultivated. The standard of living and real earnings of the survivors improved despite the economic recession. (Braudel 1981: 33) For a time some workers profited from higher wages, until new laws were introduced to bring the lower classes back into line. In the fifteenth century, the capitalism of the individual free from social controls became dominant. Guilds lost their previous power, there was a general lessening of constraints and greater inequalities. The proletariat appeared in the second half of the fifteenth century. (Pirenne 1936: 531)

The population gradually recovered and grew again, leading to a recurrence of population pressures in the sixteenth century. Between 1500 and 1600 the populations of many major cities doubled or trebled - London had four times the population.

“The result everywhere was shacks and noisome tenements, ‘dark dens for ... thieves, murderers and every mischief worker’ ... as the growth in population pressed ever harder on the food supply, prices naturally rose and made life harder than ever for the poor.” (Hale: 456)

This brutal age which followed the economic downturn of the early fourteenth century and the ravages of the Black Death has little to recommend it, and few indications of a general renaissance or rebirth of society or popular culture. The familiar concept of renaissance has proved a chimera. That positive view of this period derives from a modern focus on art, which presents an idealised and pleasant picture, far from the experience of most people of the times. The concept is one-dimensional, based all too often on developments in painting which provide a rather limited description, quite different from that derived from other sources.

“French-Burgundian culture of late medieval times is best known to the present

age through its fine art, most notably its painting." This is a modern development: just fifty years ago, "the average educated person knew those times primarily through their history. ... The image that came from these sources was grim and somber. The chroniclers themselves, and those who dealt with the subject during the Romantic period of the late nineteenth century, allowed the dark and repulsive aspects of late medieval times to emerge; its bloody cruelty, its arrogance and its greed, its lust for revenge and its misery. ... And now? Now that age basks in our perception in the lofty, dignified seriousness and the deep peace of the Van Eyks and Memling [painters of the period]; that world half a millennium ago appears to us to be permeated by a splendid light of simple gaiety, by a treasure of spiritual depth. The formerly wild and dark image has been transformed into one of peace and serenity." (Huizinga 1996: 294)

Paintings were designed to please, to turn the attention away from the travails of the times. The picture provided is false. The hope that a brighter future following a time of catastrophe might be supported by the past history of the European Renaissance of the fifteenth century has been destroyed. The time scale for change was one of centuries. There was little positive reaction amongst the leaders of society, but rather an escape into artificial and extreme fashions. There was a withdrawal into mysticism and little evidence of any "scientific" debate or any appreciation of the causes of the disruption.

The Renaissance as a rebirth of society has proved to be a chimera, a figment of the modern imagination. Nothing had been learned.

The Late Twenty-first Century

The most probable scenario suggests a global catastrophe around the period 2020-2030. That has led us to investigate the events surrounding the catastrophic European Black Death in mid-fourteenth century, in order to consider similarities and to gain guidance on what might be expected during the second half of the coming century.

There are, of course, differences between the two periods. In the last several centuries there has been an acceleration of a process which commenced some millennia in the past. This has been a period of remarkable scientific and technological progress, and human expansion. Homo sapiens has colonised the entire planet; taken over the habitats of other species, wiped many out, domesticised and farmed others; transformed and harmed the ecosphere; is using most of the available fossil fuels in a few centuries; has changed the climate; and has (like other unthinking organisms such as bacteria or rabbits) expanded

and conquered to fill every possible niche until an environmental backlash becomes inevitable.

Yet similarities abound. In recent times, the more sophisticated communication and transport technologies have strengthened the overwhelming might of the core nations. (Robinson 1989: 67) Those central pockets of privilege may escape the general strife which is forecast, just as during the so-called dark ages several centers of European trade like Spain and Venice (not to mention Byzantium) remained very prosperous.

And much of human behaviour is similar. Struggles between central power, the barons or industrial leaders and the general populace continue unabated. Indeed, the enduring class struggle between the powerful and the populace, between the rich and the poor, has now moved on to the international stage, within an increasingly global economy. There has been no turning away from brutality - this last terrible century has been witness to two massive international wars and scores of local conflicts, to the ready use of the newly-discovered atomic bomb against civilian targets, and to genocide which has continued to our day. The considerable efforts towards peace have met with partial success at best.

Such events suggest that there is no end to strife; the future will in all probability continue those patterns which have persisted for millennia. Let us remove any rose-tinted spectacles before we consider the similarities between today and the past, and make an honest effort to determine the probable consequences of the major trends of our times.

As in the Europe of the eleventh to the thirteenth centuries, the eighteenth to the twentieth centuries have been a period of economic growth and population increase. And just as at the beginning of the fourteenth century, during the closing stages of the twentieth century that growth has been faltering.

The growth of cities and the increased population put the European system under extreme stress during the fourteenth century. It is so with the entire world today. The unchecked advance of capital, detached from national controls or cultural restraints, may bring demographic explosion, ecological hazard and economic disorientation and social anomie; and political impotence to deal with any of these. (Hobsbawm 1994)

A downturn in general weather pattern and the coming of a new plague in 1348 struck a susceptible society and between one-third and one-half of the population perished. There have often been considerable natural changes in the global weather, and civilizations which are vulnerable or have reached their limits may be tipped over the edge by a climate change. The expected future climatic instability is the consequence of the greenhouse effect and global warming, which may be altering climate patterns now. As in the past a natural or man-created climate change may be the catalyst for catastrophe, tipping a

vulnerable world over the brink.

Global models suggest that the contest between food supply and demand may be lost around 2020-2030; this time much greater number of people in densely populated regions of the globe are under threat. It is horrifying to consider the death of one-third to one-half of Europe in the fourteenth century. It is similarly difficult to comprehend the possible death of perhaps two billion people across the world. Yet that is the dreadful possibility of this "most probable" scenario-and such catastrophe would not be new, only on a larger, global scale.

In the centuries following the Black Death societies turned to mysticism or escapism, displaying an inability to consider directly what had occurred, to learn and to progress more sensibly. Similarly today, before the forecast catastrophe, while fundamentalist religions thrive, the dominant ideology refuses to accept the existence of limits to growth despite clear photographs from space of a finite earth.

Faith in social organisation and steady improvement weakened as economic growth faltered and social problems increased both in the early fourteenth and the late twentieth centuries. The Western debate on alternative systems and the priorities of political and economic action have become one-dimensional. The several "revolutions" of 1968 were an attack on all existing patterns of organisation, including socialism and social democracy, which were perceived to have failed. No suitable alternative has been formulated and the new movements have not offered a fully coherent alternative strategy. (Wallerstein 1991: 65-83) Science, too, has become devalued as the negative features of the Faustian bargain with technology have become evident.

The errors of the mid-fourteenth century shattered previous certitudes. The uniform medieval world view crumbled, eventually to be challenged and replaced in the later reformation (some 169 years later, if we take the Black Death of 1348 and Luther's action of 1517 as our benchmarks). So too, the remaining dominant ideology, the "liberal democracy" of global free market capitalism, would be devalued - denying the "end of history" and a permanent triumph for this present dominant ideology (Robinson 1996: 43-52, commenting on Fukuyama 1992). It may be replaced by the strong leadership of fascism, backed up by the extraordinary control mechanisms of modern communications technologies.

In the fifteenth century, the privileged in the royal courts lived in luxury, isolated from the everyday life of the majority behind a protective shield of artificial mores. As the twentieth century comes to an end, inequalities between the new international elite and the majority have widened. There is a similar extraordinary gap between the life-styles of the yuppie class with incomes of hundreds of thousands or millions of dollars and the struggles of

members of the underclass of the developed world or the poor of the languishing Third World.

The shattering of the current global faith in growth and progress may bring uncertainty, fear and (as before) a turn to a mystical world view and a desire for some father-figure to conquer the evils of the time. As demonstrated by Hitler's use of Wagnerian symbolism, the social control of fascism can flourish in disturbed times.

Discovery of a new world to Europeans was fueled by a desire for conquest, enslavement and colonisation, to become masters of the new lands and to take wealth back to the central power. In the late twentieth century neo-colonialism has established global control from the dominant centre, backed by military might, forcing its destructive pattern on others (through its many arms such as the OECD, WTO, MAI, World Bank and IMF). The fruits of progress have proved to be efficient creators of over-use (the French gaspillage) and of uncontrolled growth.

Nor are there signs of any adequate collective response to the present global challenge, despite many well-based scientific warnings. Warnings of global problems have met with the group psychological response of withdrawal and denial as the powerful act to protect their privileges, and the general population have recoiled with fear and horror from such terrible possibilities. The facts are denied rather than faced and acted upon. Most people turn away from the debate, setting up a block against such awful thoughts in order to concentrate on the more secure involvements of everyday life.

Since the formation of the Club of Rome in 1968 (that fateful year) and the publication of "The limits to growth" in 1972 (Meadows et al) there have been many dramatic confirmations of the basic theme of global limits systemic breakdown. These have included the energy crises of the 1970s, the continuing appearance of starvation and ethnic killing, the growing numbers of refugees, the realisation of global warming and its consequences, and the many financial crises in a repetitive pattern moving across the world.

Yet, as in the past, those in power live for the day, seizing riches and enjoying the arts. They do not want to focus on the need to react to the possible catastrophe, but rather to run a business-as-usual lifestyle which supports their immediate interests.

The process of forgetting means that nothing is learned. This has been seen in the modern consideration of the Black Death, for it is treated often as a footnote to a history which deals with events within the courts of Europe as if nothing much had occurred, and which so often places in the forefront of history a somewhat glorified picture of a rebirth or Renaissance which in reality had little impact on the lives of the majority.

It took centuries for Europe to recover from the 1348 Black Death, and in

many ways no lesson was drawn from that terrible experience. The time of chaos from the forecast twenty-first century catastrophe may also be long-lasting, of centuries duration, and would then continue well past the end of the life of anyone alive today. It would be illogical to expect a golden age to flow from the environmental destruction and social collapse deriving from the current careless abuse of human capabilities.

If the events of the eleventh to the sixteenth century in Europe (with the three periods of growth, catastrophe and denial) are anything to go by, the second half of the twenty-first century, following the forecast global collapse, will be a time of continuing conflict. We can expect no recovery or renaissance and no recognition of the base causes of the distress as many populations descend into anarchy and fascism while a lucky few hide within fortress territories.

Throughout the twenty-first century and beyond there may be pockets of prosperity which would survive through the crisis. A privileged minority may prosper despite surrounding disarray and misery. Technological improvements, too, will continue. But a multiplicity of computers do not prevent hunger. There is now, and will be, more "information" yet little action to prevent global disaster.

Some Conclusions for Today

Each age sees its time as unique. Many people believe that their particular form of civilisation has escaped from the general rules and patterns of other eras of human experience. Some have even claimed an escape from history; the latest form of organisation is felt to be the final solution, and eternal. Yet each time, not long later, such beliefs are shown to have been delusions.

Indeed in the last century a number of power systems have stated their invincibility, and then vanished. These include the colonialism of the British Victorians (whose worldwide empire was expected to endure at the end of the last century just when it was moving into decline), the fascism of Hitler and his "thousand year Reich", the communism of the USSR and the mixed economy with its comprehensive welfare structure within a capitalist economic system. (Robinson 1996: 43-52)

The suggestion that the present dominant global capitalism would not last another half-century is then unexceptional. Nor, indeed, are forecasts of mass famine, disease and death, followed by widespread disruption, mysticism and warrior leaders in a conflict-ridden world pointing to any break with the past.

The search for the new future of the modern age has covered extensive ground, and included information from many disciplines. We have followed a

trail from early warnings, through the messages of computer models with reference to many other sources before arriving at the present focus on historical comparisons. Yet the conclusion is totally unremarkable. The past is replete with catastrophe, disruption and misery; now that human society covers the globe this same pattern is expected to reoccur, simply on the expanded global scale. No new wisdom has been evident in the last century - not so long ago when the relatively civilised USA developed the atomic bomb it was promptly used against civilian targets. There will always be reasons to destroy our fellow men.

The present global system is then no different from those of the past, as it stumbles unseeing towards man-made catastrophe. This scenario, which outlines an all-too probable future should be taken as a warning. It may then be used as a tool to aid the search for policies based on a philosophy which is appropriate for our time. The probable future having been mapped out, I am joining with colleagues to explore policy options which might mitigate the horrifying consequences of the drift towards disaster which is so clearly perceived.

Notes

1. I previously developed a most-probable scenario which explores the future out to a major global crisis in the second quarter of the coming century. I had hoped to add an element of optimism to that rather bleak picture by looking past collapse to possible recovery. This enterprise has been carried out in a scientific spirit; I have made every attempt to follow the guidance of past developments when human society has been faced by similar total disruption. I was not then working on a blank canvas, and I was not free to follow my own desires. That investigation has confounded the earlier hopes for a positive picture. The expectation is for bleak, unequal and disrupted societies for some centuries to come. It is concluded that every effort should be made to change global trends so that these scenarios do not occur, since the world would not "come right" without considerable collective action.
2. This section summarises arguments developed more fully elsewhere (Robinson 1989, 1996a). The aim of this paper is to extend that scenario further into the twenty-first century.

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