REITH LECTURES 1999: Runaway World

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Lecture 2: Risk

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July 1998 was possibly the hottest month in world history. 1998 as a whole may have been the hottest year. Heat waves caused havoc in many areas of the northern hemisphere. In Eilat, in Israel, for example, temperatures rose to almost 50 degrees Centigrade, while water consumption in the country went up by 40%. Texas, in the United States, experienced temperatures not far short of this. For the first eight months of the year, each month topped the record for that month. A short while later, however, in some of the areas affected by the heat waves, snow fell in places that had never seen it before.

Are temperature shifts like this the result of human interference with the world's climate? We can't be sure, but we have to admit the possibility they might be, together with the increased numbers of hurricanes, typhoons and storms that have been noted in recent years. As a consequence of global industrial development, we may have altered the world's climate, and damaged a great deal more of our earthly habitat besides. We don't know what further changes will result, or the dangers they will bring in their train.

The theme of my lecture today is risk. I hope to persuade you that this apparently simple notion unlocks some of the most basic characteristics of the world in which we now live.

At first sight, the concept of risk might seem to have no specific relevance to our times, as compared to previous ages. After all, haven't people always had to face their fair share of risks? Life for the majority in the European Middle Ages was nasty, brutish and short - as it is for many in poorer areas of the world now.

But here we come across something really interesting. Apart from some marginal contexts, in the Middle Ages there was no concept of risk. Nor, so far as I have been able to find out, was there in most other traditional cultures. The idea of risk appears to have taken hold in the 16th and 17th centuries, and was first coined by Western explorers as they set off on their voyages across the world. The word 'risk' seems to have come into English through Spanish or Portuguese, where it was used to refer to sailing into uncharted waters. Originally, in other words, it had an orientation to space. Later, it became transferred to time, as used in banking and investment - to mean calculation of the probable consequences of investment decisions for borrowers and lenders. It subsequently came to refer to a wide range of other situations of uncertainty.

The notion of risk, I should point out, is inseparable from the ideas of probability and uncertainty. A person can't be said to be running a risk where an outcome is 100% certain.

There is an old joke that makes this point rather neatly. A man jumps from the top of a hundred-story skyscraper. As he passed each floor, on his way down, the people inside hear him saying: 'so far so good', 'so far so good', 'so far so good', … He acts as though he is making a risk calculation, but the outcome is in fact determined. Traditional cultures didn't have a concept of risk because they didn't need one. Risk isn't the same as hazard or danger. Risk refers to hazards that are actively assessed in relation to future possibilities. It only comes into wide usage in a society that is future-oriented - which sees the future precisely as a territory to be conquered or colonised. Risk presumes a society that actively tries to break away from its past - the prime characteristic indeed of modern industrial civilisation.

All previous cultures, including the great early civilisations of the world, such as Rome, or traditional China, have lived primarily in the past. They have used the ideas of fate, luck or the 'will of the gods' where we now tend to substitute risk. In traditional cultures, if someone meets with an accident, or conversely, prospers - well, it is just one of those things, or it is what the gods and spirits intended. Some cultures have denied the idea of chance happenings altogether. The Azande, an African tribe, believe that when a misfortune befalls someone it is the result of sorcery. If an individual falls ill, for example, it is because an enemy has been practising black magic.

Such views, of course, don't disappear completely with modernisation. Magical notions, concepts of fate and cosmology still have a hold. But often they continue on as superstitions, in which people only half believe, and follow in a somewhat embarrassed way. They use them to back up decisions of a more calculative nature. Gamblers, and this includes gamblers on the stock exchange, mostly have rituals that psychologically paper over the uncertainties they must confront. The same applies to many risks that we can't help running, since being alive at all is by definition a risky business. It isn't in any way surprising, that people still consult astrologers, especially at vital points of their lives.

Yet acceptance of risk is also the condition of excitement and adventure - think of the pleasures some people get from the risks of gambling, driving fast, sexual adventurism, or the plunge of a fairground rollercoaster. Moreover, a positive embrace of risk is the very source of that energy which creates wealth in a modern economy.

The two aspects of risk - its negative and positive sides - appear from the early days of modern industrial society. Risk is the mobilising dynamic of a society bent on change, that wants to determine its own future rather than leaving it to religion, tradition, or the vagaries of nature. Modern capitalism differs from all previous forms of economic system in terms of its attitudes towards the future. Previous types of market enterprise were irregular or partial. The activities of merchants and traders for example, never made much dent in the basic structure of traditional civilisations, which all remained heavily agricultural and rural. Modern capitalism embeds itself into the future by calculating future profit and loss, and therefore risk, as a continuous

process. This wasn't possible until the invention of double entry bookkeeping in the 15th Century in Europe, which made it possible to track in a precise way how money can be invested to make more money. Many risks, of course, such as those affecting health, we do wish to reduce as far as possible. This is why from its origins, the notion of risk is accompanied by the rise of insurance. We shouldn't think only of private or commercial insurance here. The welfare state, whose development can be traced back to the Elizabethan poor laws in England, is essentially a risk management system. It is designed to protect against hazards that were once treated as at the disposition of the gods - sickness, disablement, job loss and old age.

Insurance is the baseline against which people are prepared to take risks, it is the basis of security where fate has been ousted by an active engagement with the future. Like the idea of risk, modern forms of insurance began with seafaring. The earliest marine insurances were written in the 16th Century, a London company first underwrote an overseas risk in 1782. Lloyds of London took a leading position in the emerging insurance industry, which it has sustained for two centuries. Insurance is only conceivable where we believe in a humanly engineered future. It is one of the means of doing that engineering. Insurance is about providing security, but it is actually parasitic upon risk and people's attitudes towards it. Those who provide insurance, whether in the shape of private insurance or state welfare systems, are essentially simply redistributing risk. If someone takes out fire insurance against his or her house burning down, the risk doesn't go away. The householder trades off the risk to the insurer in exchange for payment. The trading and offloading of risk isn't just a casual feature of a capitalist economy. Capitalism is actually unthinkable and unworkable without it.

For these reasons, the idea of risk has always been involved in modernity, but I want to argue that in the current period risk assumes a new and peculiar importance. Risk was supposed to be a way of regulating the future, of normalising it and bringing it under our dominion. Things haven't turned out that way. Our very attempts to control the future tend to rebound upon us, forcing us to look for different ways of relating to uncertainty.

The best way to explain what is going on is to make a distinction between two types of risk. One I shall call external risk. External risk is risk experienced as coming from the outside, from the fixities of tradition or nature. I want to distinguish this from manufactured risk, by which I mean risk created by the very impact of our developing knowledge upon the world. Manufactured risk refers to risk situations which we have very little historical experience for confronting. Most environmental risks, such as these connected with global warming, fall into this category. They are directly influenced by the intensifying globalisation I discussed in my opening lecture.

The best way I can clarify the distinction between the two kinds of risk is as follows. In all traditional cultures, one could say, and in industrial society right up to the threshold of the present day, human beings worried about the risks coming from external nature - from bad harvests, floods, plagues or famines. At a certain point, however - very recently in historical terms - we started worrying less about what nature can do to us, and more about what we have done to nature. This marks the transition from the predominance of external risk to that of manufactured risk.

Who are the 'we' here, doing the worrying? Well I think now it is all of us, regardless of whether we are in the richer or poorer areas of the world. At the same time, it is obvious that there is a division that by and large separates the affluent regions from the rest. Many more 'traditional' risks, of the sort just mentioned - such as the risk of famine when the harvest is bad - still exist in proper countries overlapping with the new risks.

Our society lives after the end of nature. The end of nature doesn't mean, obviously, that the physical world or physical processes cease to exist. It refers to the fact that there are few aspects of our surrounding material environment that haven't been in some way affected by human intervention. Much of what used to be natural isn't completely natural any more, although we can't always be sure where the one stops and the other begins. Last year there were big floods in central China, in which many people lost their lives. The flooding of the major rivers has been a recurrent part of Chinese history. Were these particular floods more of the same, or were they influenced by global climate change? No one knows, but there are some unusual features of the floods that suggest their causes were not wholly natural.

Manufactured risk doesn't only concern nature - or what used to be nature. It penetrates into other areas of life too. Take, for example, marriage and the family, now undergoing profound changes in the industrial countries and to some extent world-wide. Two or three generations ago, when people got married, they knew what it was they were doing. Marriage, largely fixed by tradition and custom, was akin to a state of nature - as of course remains true in many countries. Where traditional cultures are dissolving, however, when people marry, or form relationships, there is an important sense in which they don't know what they are doing, because the institutions of marriage and the family have changed so much. Here individuals are striking out afresh, like pioneers. It is inevitable in such situations, whether they know it or not, that people start thinking more and more in terms of risk. They have to confront personal futures that are much more open than in the past, with all the opportunities and hazards this brings.

As manufactured risk expands, there is a new riskiness to risk. The rise of the idea of risk, as I pointed out earlier, was closely tied to the possibility of calculation. Most forms of insurance are based directly upon this connection. Every time someone steps into a car, for instance, one can calculate that person's chances of being involved in an accident. This is actuarial prediction - there is a long time-series to go on. Situations of manufactured risk aren't like this. We simply don't know what the level of risk is, and in many cases we won't know for sure until it is too late. Not long ago was the 10th anniversary of the accident at the Chernobyl nuclear station in Ukraine. No one knows what its long-term consequences will be. There might or might not be a stored-up disaster to health due to happen some while from now. Exactly the same is true of the BSE episode in the UK - the outbreak of so-called mad cow disease, in terms of its implications for humans. At the moment, we can't be sure whether at some point many more people than at present will fall ill.

Or consider where we stand with world climate change. Most scientists well versed in the field believe that global warming is occurring and that measures should be taken against it. Yet only about 25 or so years ago, orthodox scientific opinion was that the world was in a phase of global cooling. Much the same evidence that was deployed to

support the hypothesis of global cooling is now brought into play to bolster that of global warming - heat waves, cold spells, unusual types of weather. Is global warming occurring, and does it have human origins? Probably - but we won't, and can't, be completely sure until it is too late.

In these circumstances, there is a new moral climate of politics, marked by a push-and-pull between accusations of scaremongering on the one hand, and of cover-ups on the other. If anyone - government official, scientific expert or researcher - takes a given risk seriously, he or she must proclaim it. It must be widely publicised because people must be persuaded that the risk is real - a fuss must be made about it. Yet if a fuss is indeed created and the risk turns out to be minimal, those involved will be accused of scaremongering.

Suppose, on the other hand, that the authorities initially decide that the risk is not very great, as the British government did in the case of contaminated beef. In this instance, the government first of all said: we've got the backing of scientists here; there isn't a significant risk, we can continue eating beef without any worries. In such situations, if events turn out otherwise - as in fact they did - the authorities will be accused of a cover-up - as indeed they were.

Things are even more complex than these examples suggest. Paradoxically, scaremongering may be necessary to reduce risks we face - yet if it is successful, it appears as just that, scaremongering. The case of AIDS is an example. Governments and experts made great public play with the risks associated with unsafe sex, to get people to change their sexual behaviour. Partly as a consequence, in the developed countries, AIDS did not spread as much as was originally predicted. Then the response was: why were you scaring everyone like that? Yet as we know from its continuing global spread - they were - and are - entirely right to do so.

This sort of paradox becomes routine in contemporary society, but there is no easily available way of dealing with it. For as I mentioned earlier, in most situations of manufactured risk, even whether there are risks at all is likely to be disputed. We cannot know beforehand when we are actually scaremongering and when we are not.

Our relationship to science and technology today is different from that characteristic of earlier times. In Western society, for some two centuries, science functioned as a sort of tradition. Scientific knowledge was supposed to overcome tradition, but actually in a way became one in its own right. It was something that most people respected, but was external to their activities. Lay people 'took' opinions from the experts.

The more science and technology intrude into our lives, and do so on a global level the less this perspective holds. Most of us - including government authorities and politicians - have, and have to have, a much more active or engaged relationship with science and technology than used to be the case.

We cannot simply 'accept' the findings which scientists produce, if only because scientists so frequently disagree with one another, particularly in situations of manufactured risk. And everyone now recognises the essentially sceptical character of science. Whenever someone decides what to eat, what to have for breakfast, whether

to drink decaffeinated or ordinary coffee, that person takes a decision in the context of conflicting and changeable scientific and technological information.

Consider, for instance, red wine. As with other alcoholic drinks, red wine was once thought harmful to health. Research then indicated that drinking red wine in reasonable quantities protects against heart disease. Subsequently it was found that any form of alcohol will do, but it is only protective for people above age 40. Who knows what the next set of findings will show?

Some say that the most effective way to cope with the rise of manufactured risk is to limit responsibility by adopting the so-called 'precautionary principle'. The notion of the precautionary principle first emerged in Germany about 15 years ago, in the context of the ecological debates that were carried on there. At its simplest, it proposes that action on environmental issues (and by inference other forms of risk) should be taken even though there is insecure scientific evidence about them. Thus in the 1980's, in several Continental countries, programmes were initiated to counter acid rain, whereas in Britain lack of conclusive evidence was used to justify inactivity about this and other pollution problems too.

Yet the precautionary principle isn't always helpful or even applicable as a means of coping with problems of risk and responsibility. The precept of 'staying close to nature', or of limiting innovation rather than embracing it, can't always apply. The reason is that the balance of benefits and dangers from scientific and technological advance, and other forms of social change too, is imponderable. We may need quite often to be bold rather than cautious in supporting scientific innovation or other forms of change. After all, one root of the term risk in the original Portuguese means 'to dare'. Take as an example the controversy over genetically modified foods. Genetically modified crops are already growing on 35 million hectares of land across the world - an area 12 times the size of Britain. Most are being grown in North America and China. Crops include soya, maize, cotton and potatoes.

No more obvious situation could be found where nature is no longer nature. The risks involve a number of unknowns - or, if I can put it this way, known unknowns, because the world has a pronounced tendency to surprise us. There may be other consequences that no one has yet anticipated. One type of risk, is that the crops may carry medium or long-term healthy hazards. After all, a good deal of gene technology, is essentially new, different from older methods of cross-breeding.

Another possibility is that genes incorporated into crops, to increase resistance to pests might spread to other plants - creating 'super weeds'. This in turn could pose a threat to biodiversity in the environment.

Since pressure to grow, and consume, genetically modified crops is partly driven by sheer commercial interests, wouldn't it be sensible to impose a global ban on them? But even supposing such a ban were feasible, things - as ever - are not so simple. The intensive agriculture widely practised today is not indefinitely sustainable. It uses large amounts of chemical fertilisers and insecticides, destructive to the environment. We can't go back to more traditional modes of farming and still hope to feed the world's population.

Bioengineered crops could reduce the use of chemical pollutants, and hence resolve these problems.

Whichever way you look at it, we are caught up in risk management. With the spread of manufactured risk, governments can't pretend such management isn't their business. And they need to collaborate, since very few new-style risks, have anything to do with the borders of nations.

But neither, as ordinary individuals, can we ignore these new risks - or wait for definitive science evidence to arrive. As consumers, each of us has to decide, whether to try to avoid genetically modified products or not. These risks, and the dilemmas surrounding them, have entered deeply into our everyday lives.

Let me move towards some conclusions and at the same time try to make sure my arguments are clear. Our age is not more dangerous - not more risky - than those of earlier generations - but the balance of risks and dangers has shifted. We live in a world where hazards created by ourselves are as, or more, threatening than those that come from the outside. Some of these are genuinely catastrophic, such as global ecological risk, nuclear proliferation, or the meltdown of the world economy. Others affect us as individuals much more directly, for instance, those involved in diet, medicine, or even marriage.

An era such as ours will inevitably breed religious revivalism and diverse New Age philosophies, which turn against a scientific outlook. Some ecological thinkers have become hostile to science, and even to rational thought more generally, because of ecological risks. This isn't an attitude that makes much sense. We wouldn't even know about these risks without scientific analysis. However, our relationship to science, for reasons already given, won't and can't be the same as in previous times.

We do not currently possess institutions which allow us to monitor technological change, nationally or globally. The BSE debacle in Britain and elsewhere, might have been avoided, if a public dialogue had already been established about technological change and its problematic consequences. More public means of engaging with science and technology wouldn't do away with the quandary of scaremongering versus cover-ups, but it might allow us to reduce some of its more damaging consequences.

Finally, there can be no question of merely taking a negative attitude towards risk. Risk always needs to be disciplined, but active risk-taking is a core element of a dynamic economy and an innovative society. What more appropriate place could there be to emphasise this than here in Hong Kong?