

Social Problems of the Future

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Abstract

By making better predictions, we can prepare better for the future. We cannot even hope to prepare perfectly, no matter how good our predictions may be. However, where social organization is concerned, preparing is always better than being taken by surprise. Like much else in the past hundred years, the problems of the future will probably involve science and technology, travel and communication, war and inter-group conflict. Since we will likely continue to live in a global society, humanity's problems will be increasingly global in scope.

Cyberspace---the notional location of most of our information in the future---will be the source of many new social problems, especially problems of social control and misinformation. Of all the changes that will bear on the future of societies, and on the future of social problems, none is likely to have more impact than cyberspace and the information that resides there.

Five centuries ago, scholars could decide what was the appropriate body of knowledge within any literate society, be that society Chinese, Western European, or another. This idea of the demarcated body of knowledge---of what educated people should know---has also been produced by technology of the day, as has the question of 'knowledge ownership'.

The Internet affects the relationship between consumers and producers of knowledge, changing the whole way we view information and changing the relations of its production. Not only does the Internet ease information sharing, commerce, and social support, it also allows people to create and try out new identities. This issue leads, necessarily, into a discussion of information diffusion and two particular forms of diffusion: rumours and contagion. In an information society, all social, economic, and political life depends on the quality of the information available. One foreseeable social problem of the future concerns rumours and contagion, two deviant forms of information flow that can have powerful consequences for societies of the future.

Introduction

If we are going to think about the future in useful ways, we need to avoid the mistakes people made in the past--today we know the mistakes they made in thinking about the future. If we can avoid their mistakes, we can make better predictions. By making better predictions, we can prepare better for the future.

This is not to say that we can hope to predict the future perfectly. The bad predictions of the past suggest that we cannot. Moreover, we cannot even hope to prepare perfectly, no matter how good our predictions may be. However, where social organization is concerned, preparing is always better than being taken by surprise.

As we shall see, some social problems of the past will likely persist and new problems will emerge in the future. A future without problems is inconceivable, if only because we humans continue to construct new problems as we go along. A few likely types of problems come to mind rapidly. Like much else in the past hundred years, the problems of the future will probably involve science and technology, travel and communication, war and inter-group conflict. Since we will likely continue to live in a global society, humanity's problems will be (increasingly) global in scope. Though we are an increasingly healthy species, concerns about health will continue to grow. Medical technology will continue to improve, but new illnesses will continue to develop.

Most important, since we are increasingly reliant on information and technology, our problems will be increasingly concerned with information flow, the abuse of technology, and the malfunctioning of, technology. **Cyberspace**-the notional location of most of our information in the future-will be the source of new social problems, especially problems of social control and misinformation. **Rumours** and **contagion**, especially where they spread troublesome misinformation, will pose critical problems-even (possibly) creating problems of war and panic.

We call for modest optimism about the future of humanity and the future of social problems. Like hamsters on treadmills, we might continue to move ahead in absolute terms. However, we will stay more or less where we are in relative terms, since our expectations will rise with our abilities to meet them. Our ability to solve social problems-to improve society in absolute terms-will require better social science. This, in turn, will require a reassessment of what we think sociology can do and of how it should do it. The paper ends with a call for better measurements of basic social processes.

Past Futures

The future is always before us yet always a day away from being the past. Think how much the world has changed in the last half-century. As we moved out of the shadow of possible all-out

nuclear war with the Soviet enemy in the 1950s and 1960s, national concern over military conflict declined. Then people worried increasingly about domestic concerns such as the economy and unemployment, health and aging, and the environment. There has been no 'peace dividend' as far as worrying is concerned. We continue to imagine, find, and create new social problems.

With better science comes better prediction. As time has progressed and we came nearer to the target, predictions about life in the year 2000 became more accurate. Interestingly, however, the first and most powerful piece of future forecasting was carried out over two centuries ago. The first systematic futurist was Thomas Malthus ([1798] 1959). His predictions about overpopulation have turned out to be mainly wrong, at least as they apply to the developed world. Malthus failed to foresee the degree to which humans were able to improve food production and limit their birth rates. However, overpopulation, starvation in the developing world, and the depletion of natural resources continue to be serious social problems today. So Malthus was not entirely off base.

Some thinkers in the past imagined something like the current **Information Age**, in which data is available almost immediately over the Internet. Still, many predictions made by futures researchers even as recently as the mid-twentieth century have proven stunningly wrong. These misfires draw attention to an important lesson about futures studies: radical, unpredictable changes in human progress can and will occur. Entire generations of future forecasters will suddenly look absurd for their lack of insight and moderation.

Having said that, we can venture a few guesses without too much risk. In the future, as society adjusts to the increased role of women in the workforce and to changes in family life, many of today's problems with work and family will likely diminish. However, some things are less likely to change drastically. For example, economic inequality will not disappear. Ethnic and regional differences in thinking will not disappear. Religion itself will not disappear. These are all too firmly rooted in social organization. Put

another way, there have never been large or 'complex' societies without these features, so we have no reason to think that there will be in the future.

The single biggest influence on societies to emerge in recent years has been the invention of computers. Hundreds of millions of personal computers are in use around the world today. Other important developments have occurred in genetic technology. Never before have humans been able to control the future of their species as much as we can now. Finally, consider the process of **globalization**. Globalization seems likely to shrink the world and bring people ever closer together. The future economic and social consequences of this trend are vast and complex.

Thinking About the Future

Social problems are interconnected. No social problem stands alone; each is related to other problems. What this complexity suggests, in part, is that a change in one area of social life will affect other areas. Another important aspect of social problems is their historical basis. Most problems today are the result of long-standing neglect and simmering conflict.

Consider as an example the current problem of conflictual relations between Quebec and the other provinces in Canada. We can trace this particular conflict back to the early history of relations between the French and English in Canada, three centuries ago. Or consider the problem of race relations between blacks and whites in the United States, which we can trace back 400 years to that country's practice of slavery. Even today, echoes of these earlier periods in Canadian and US history are heard in the relationships between ethnic and racial groups in the two countries. These examples clearly suggest, as do many other social problems, that effective solutions to social problems will often be slow in coming.

At the same time, social problems are dynamic and changeable. For example, what people consider an unlawful substance, whose use is therefore a social problem, can shift markedly over time. Cocaine and opium were

once considered legitimate medicinal and recreational drugs but now are strictly banned by the criminal justice system. Public officials deemed marijuana use legal, then illegal; today we have tight limits on legal access to marijuana for strictly therapeutic purposes and the prospect of the effective decriminalization of marijuana use. Not all social problems have a long history, however. On the contrary, people are, for various reasons, always creating or constructing new problems.

The dynamic nature of social problems—a result of their relationship with one another and with the past—poses difficulties not only for people actively working to improve social conditions, but also for researchers trying to foresee the social problems of the future. And, as we shall see later in this paper, the organization of sociological research also makes precise forecasting unlikely if not impossible, though there are ways we can improve that situation. Our goal in thinking about the future is not strictly speaking to foresee the future (this is impossible) but to map out alternative futures. This, ultimately, is what futures studies are about. However, looking back on past efforts to imagine the future is a chastening but invigorating experience.

What Past Experts Predicted About the Future

History has recorded many instances in which highly regarded thinkers made wildly inaccurate guesses about the progress of human society. The Roman engineer Sextus Julius Frontinus, for example, confidently declared in the late first century that 'inventions have long since reached their limit, and I see no hope for further development'. Nor is this form of thinking limited to the pre-modern era. In 1899, Charles Duell, the commissioner of the US Patent Office, seriously considered closing down the Office to save the government money, reasoning, 'everything that can be invented has been invented' (Wilson, 2000: 21).

Any discussion of systematic futures research in the modern sense must start with the work of Thomas Malthus ([1798] 1959). Malthus foresaw population problems in the future based on the premise that populations grow exponen-

tially while food supplies grow additively. He pointed out that any exponential series, however slowly it grows, eventually overtakes any arithmetic series, however quickly it grows. Malthus did not anticipate the current dwindling and even negative birth rates in industrialized nations. However, as Malthus predicted, world population, starvation in the developing world, and the depletion of natural resources have become serious problems.

Malthus was not the only thinker to make accurate guesses about the future. In 1888, newspaper columnist David Goodman Croly predicted with remarkable insight that by 2000, 'women throughout the world will enjoy increased opportunities and privileges. Along with this new freedom will come social tolerance of sexual conduct formerly condoned only in men. In addition, because of the availability of jobs, more women will choose not to have children' (cited in Margolis, 2000: 35).

Similarly a British *Daily Mail* writer accurately prophesied in 1928 that by century's end, the prime minister would be female, women would wear trousers and act as power-brokers, the average life expectancy would be 75, and home cooking would be accomplished by a machine that, as described in the late 1920s, sounded much like the modern microwave oven (Margolis, 2000).

Other early writers predicted that by the twenty-first century, 'the U.S. population will have risen to about 330 million [the actual figure is currently around 285 million], and nine out of ten Americans will be living in supercities or their suburbs'. With respect to communications technology, they wrote, 'cities, like industry, will tend to decentralize; with instant communications, it will no longer be necessary for business enterprises to cluster together' ('The Futurists', 1966: 42). Futurists also anticipated the current Information Age, in which data are available almost immediately over the Internet: 'One thing that they almost all will want is electronic information retrieval: the contents of libraries and other forms of information or education will be stored in a computer and will be instantly obtainable at home by dialing a code' ('The Futurists', 1966: 33).

Still, even as late as the mid-twentieth century, many futures researchers made predictions that were wildly off target. In the 1960s, futures researchers imagined that work would be almost non-existent by the year 2000. They even believed that people at the turn of the millennium would have so much leisure time at their disposal and the need for workers would be so small that people would have to be paid not to work. The logic was simple and, at the time, compelling. Only 40 per cent of the US population worked outside the home in the 1960s. Expecting that figure to decline further as automation increased and production processes became more efficient seemed logical.

Researchers then expected that Americans would nearly eliminate poverty and class inequality by the twenty-first century, and that everyone would live in modest financial comfort. In large part, they relied on technological innovations to bring about such radical social change: with machines fully developed, there would not be enough work to go around for humans. 'Moonlighting will become as socially unacceptable as bigamy', they wrote ('The Futurists', 1966: 33). People would solve the problems of a growing world population, too, through the magic of technology.

Faith in technology has been a staple of the modern world for at least two centuries. Regarding Third World famines, some futurists imagined the following solution: 'Huge fields of kelp and other kinds of seaweed will be tended by undersea "farmers". Frogmen who will live for months at a time in submerged bunkhouses. The protein-rich undersea crop will probably be grounded up to produce a dull-tasting cereal that eventually, however, could be regenerated chemically to taste like anything from steak to bourbon' ('The Futurists', 1966: 32). In home economics, an 1950 illustration in *Popular Mechanics* predicted that the 'housewife of 2000' would 'happily be doing her daily housecleaning with a garden hose, since everything would now be made of plastic' (Wilson, 2000: 236). Not only did this picture overestimate a love of polymer furniture at the turn of a new century, it also importantly failed to anticipate the vast changes in views about 'women's work'.

One researcher in the past even predicted that a giant nuclear power station built on Mount Wilson, overlooking Los Angeles, could probably heat the surrounding air and raise it, along with the infamous LA smog layer, safely into the upper stratosphere, while at the same time drawing sea winds and rainfall onto the mainland to irrigate the desert and transform it into arable greenspace ('The Futurists', 1966).

One of the best, and least-known, sets of predictions was made by H.G. Wells shortly after the beginning of the twentieth century. In his book of 'anticipations' about the new century, Wells (1902) correctly predicts that much that occurs in the century would be connected with new marvels of transportation (trains, cars, and airplanes) and communication (the wireless, radio, and telephone). With speedier transportation and communication will come decentralization—for example, the growth of suburbs, long-distance shopping, and more contact over distances for business and pleasure.

It is difficult to predict new technological inventions and their likely social effects. Yet these are easier to predict than changes that are entirely unconnected to technology. Said another way, the effects of people on other people are harder to predict than the effects of machines. Generally, machines that save time or labour or that reduce the cost of a good or service are quickly adopted by people who can afford it. In recent centuries, this has been true of electricity, telephones, automobiles, and, most recently, computers.

Harder to predict are trends in personal beliefs—in religion or politics, for example. H.G. Wells, who foresaw suburbs and air travel, could not foresee the Nazi Holocaust or the emancipation of women, for example. Without the Holocaust, there would have been no state of Israel. Without the emancipation of women, there would have been no work-family conflict. Until the Berlin Wall had fallen and the Soviet Union had imploded, people could not imagine these things happening.

Our failures to make accurate predictions teach us an important lesson about futures studies, which is that radical, unpredictable changes in human life can occur. When they do, entire

generations of future forecasting suddenly look absurd for their lack of insight. While often futures researchers err on the side of wild abandon in their predictions, just as often they err on the side of timidity and lack of imagination. This was the point that Yogi Berra made so eloquently (if unintentionally) when he stated, 'The future ain't what it used to be'. As a species, we are not very good at predicting our future.

Changes in What the Public Sees as Social Problems

What people consider a serious social problem can also change over time, often in response to changes in social, political, and economic conditions. A social problems textbook from 1898, for instance, listed 'Dumping Garbage', 'Over-Production', 'Public Debts and Indirect Taxation', and 'Slavery' among its chapter headings (George, 1898). Another text, published only 18 years later, already indicated concern over some of the harmful social conditions that continue to affect the world today, including 'Unemployment', 'Crime and Punishment', 'The Liquor Problem', 'Poverty', and 'The Conservation of Natural Resources' (Towne, 1916). Obviously, many of these problems are still with us today.

From the time of the Russian Revolution in 1917 onward, Western capitalist societies worried about Soviet communism and the dangers of subversion and war. Soviet communists worried about Western capitalism and the dangers of subversion and war. Between 1917 and 1967, through two world wars and two minor wars (Korea and Vietnam), a global depression, and hunts for traitors in the Soviet Union (in the 1930s) and the United States (in the 1950s), people on both sides waited for the worst-all-out war-to happen. It did not happen, and as the risk of all-out nuclear war with the Russians receded, national concerns over military conflict declined. Growing domestic considerations like the economy and unemployment replaced them. North America rode a technology-driven, record-breaking boom in the marketplace through the 1990s, and at that time crime and other social issues became the main social problems in the eyes of the public.

Since the widely publicized major terrorist events of September 2001, concerns about war and subversion have surfaced again, especially in the United States. In the foreseeable future, we can expect to see high prominence given to terrorism, treason, and national security in the public mind.

Social Problems Trends Projected to the Near Future

Many predictions by today's leading futures researchers will be proven, a century down the road, to have been wrong. Others will have come close to the reality of 2100, and a few may even have hit the bull's eye.

Noted thinker Noam Chomsky is pessimistic about the prospects of futures research: 'The record of prediction in human affairs has not been inspiring, even short-range. The most plausible prediction is that any prediction about serious matters is likely to be off the mark, except by accident' (Chomsky, 1999: 30). However, the goal of futures studies is only partly to paint a picture of what life may be like for subsequent generations. Its more important task is to imagine a desirable alternative future for people to work toward, a future that is actively shaped by the decisions of people living today. With this goal in mind, let us consider the likely future of several different categories of social problems.

Problems of Family and Work

As society adjusts to the increased participation of women in the workforce and to changes in family structure (such as fewer children and higher rates of divorce), some specific social problems we have discussed—for example, balancing family responsibilities with career ambitions and the time constraints of mothers—may be better worked out. We will need to think more creatively about ways of resolving work-family conflicts within the context of marital arrangements that are flexible and constantly changing.

To reduce family conflict, the socialization of men and women will need to continue to change, as will the organization of workplaces. Change in the latter, in particular, may require strong political will by lawmakers to extend pay- and employment-equity legislation to cover more types of workplaces and to develop stronger sanctions against employers who treat their workers unfairly. Change of this kind, however, is complicated by an increasingly tough global market that has the tendency to drive pay and working conditions downward, leaving little room for creative workplace solutions to home problems.

Said another way, capitalists have little motivation to improve working conditions in Canada when they can move the workplace to South America or Asia and pay less for the same work. They do not do so en masse because they need consumers at home who can afford to buy their product.

Problems of Class Inequality

For a variety of reasons, it seems unlikely that social equality will be attained in the foreseeable future. Inequality is firmly entrenched in our society. As well, many of our political and ideological beliefs encourage vastly unequal economic statuses, and economic inequality (like religion, ethnicity, and regionalism) has a long history in our culture. Thus, it would seem unreasonable to work toward the elimination of all social or economic inequality. Given that such inequality exists everywhere and that outside of hunter-gatherer societies it has always existed, a war against inequality seems unlikely to succeed.

Thus, inequality and its associated problems are likely to continue for a long time to come, albeit continuously challenged and modified. As to how much inequality can be changed, the political will of governments or lawmakers to legislate change is central. The legislation of greater equality will meet strong objections from the wealthy, who make out well under the present system. However, taking our lead from futures research, work in the present can influence the future, and people who value equality must continue to work hard on such problems.

Problems that remain on the horizon as contributing to class inequality include the rise to power of multinational corporations and the effects of these corporations on Third World labourers. The migration of jobs from North America and Europe to Latin America, Africa, and Asia represents an improvement in the incomes of local Third World people. However, it also spreads sweatshop conditions around the world, creates global dependency on industrial capitalism, and pits Third World labourers against workers in the industrialized world.

Environmental Damage

The destruction of the environment is a growing social problem. Many scientists and theorists believe that unless changes are made today, environmental problems will become more severe and their consequences more intense in the future. Already, the world's temperature has increased, particularly in the 1990s and since. This has led to more frequent droughts and famines in the Third World, higher rates of skin cancer, and more extreme weather conditions throughout the year.

F. Sherwood Rowland, whose early warnings of the effects of CFCs on ozone depletion in 1974 earned him a Nobel Prize in chemistry, hypothesizes that the global prevalence of smog will rise in the next century because more and more people will use cars. The twenty-first century will therefore begin with three major atmospheric problems firmly entrenched on a global basis: stratospheric ozone depletion, the greenhouse effect from increasing carbon dioxide and other trace gases with accompanying global warming and urban and regional smog. (1999: 209)

Rowland goes on to say, 'My expectation in the coming decades is that the climatic consequences from continued greenhouse gas emissions will be more and more noticeable, and much more ominous' (1999: 209-210).

Technological Haves and Have-Nots

In 1943, Thomas J. Watson, Sr, then chair-

man of IBM, foresaw a world market for only five computers. His underestimation of the demand for computers is understandable, given that at the time the US military was in the process of building one of the world's first computers, the ENIAC (Electronic Numerical Integrator and Computer). When completed in 1945, that computer cost nearly \$500,000 (US) and weighed 30 tonnes. No one foresaw the use of semiconductors for miniaturization. Today, people carry enormously powerful computers in their briefcases or backpacks.

This change is just one dramatic demonstration that technological inventions are almost always initially inaccessible to the average person. Gradually, as demand for the new product becomes evident and production methods become cheaper and more efficient, costs decline to the point where the invention becomes widely available to most, if not all, people. Often supply comes to drive demand for the new technology. (No one 20 years ago would have imagined how much our lives would be controlled by e-mail and voice mail, for example. Yet here we are, working faster and living faster because of these new technologies and the expectation that we will use them.)

Around the world, the benefits of technological innovation are enjoyed first by the most affluent in the most affluent nations. Then, slowly, the new technology spreads to the lower social classes and the rest of the world's population. Thus, the number of personal computers being used in the world today ranges in the hundreds of millions, yet people in poorer societies have few computers per capita. The most advanced machines continue to be available to only a small percentage of privileged buyers.

With computers as with other technologies in the past, those in power steer the spread of technologies in ways that will further improve the quality of their own lives and the lives of others in the privileged social classes. Significant funding is directed at research and development for the latest in technical gadgetry, while technological solutions for poverty and homelessness (for example, affordable housing) remain largely unexplored. As technological development continues, the **digital divide** between the techno-

logical haves and have-nots continues to widen.

One application of technology that will likely gain popularity in the future is the use of *cyberterrorism* and cyberwarfare, particularly by rogue nations and militant groups lacking the military firepower to threaten their adversaries on a traditional battlefield. Specific tactics may include hacking or electronically jamming the enemy's computer and communications systems; using electromagnetic-pulse weaponry to destroy electronic devices; and infecting computer equipment with viruses (World Future Society, 2001).

Genetic Manipulation

Some predictions about the future of humanity hinge on the use of **genetic manipulation** to improve the quality of human life. Already, scientists have mapped out the human genome, the DNA material that contains the genetic instructions that determine hair, eye, and skin colour, height, physical build, predisposition to various diseases, and, possibly, basic personality or temperament.

Many ethicists and researchers are worried about human cloning and the use of embryos made expressly for research purposes. The dominant concern is that without adequate government and institutional guidelines for ethical behaviour in genetic research, humanity risks abusing the new technology in as-yet-unforeseen ways. This concern is justified: over the past century, every powerful technology has been used at one time or another to dominate, terrorize, or obliterate political enemies.

Never before have humans been able to control the future of their species to such a degree. This is a social problem because the manipulation of a person's genetic code not only changes how that individual develops, but can also potentially alter the human gene pool permanently for future generations. So decisions that people make today about the application of genetic research to the general population can have unforeseen effects on future members of the human population. The consequences could extend to the ways in which parents control the sex and racial characteristics of their unborn chil-

dren, or how genetically altered individuals interact with non-genetically altered people. Health issues may include redefinitions of illness and disability to take into account such characteristics as height, body type, skin colour, and clarity of vision.

Families, Communities, and Governments

Families can be defined in a variety of ways: narrowly, as in the nuclear family (husband, wife, and young children), or broadly, as in the extended family, which includes everyone related by blood, marriage, or adoption. By family, we can mean people of common ancestry, those living under one roof, or those having common characteristics or properties.

As sociologist Neena Chappell (2002) points out in a revealing analysis, the essential features of families—their nurturing and supportive roles as well as their socialization functions for the next generation—have remained intact into the twenty-first century and are likely to do so in the foreseeable future. Families remain a basic social institution of society, providing emotional support, identity confirmation, and socialization. In fact, the core family functions have become even more important given recent changes that have tended to reduce the role of government in the economy. New family forms are evolving to permit the continuation of these essential roles under new circumstances.

Even in our individualistic and materialistic Western society, family members care for one another. For example, roughly 75 per cent of the care provided to elderly people in industrialized Western societies comes through informal networks, primarily from family members: spouses and children—especially wives and daughters. Despite trends that work against family support—increased proportions of women working for pay, smaller families, increased divorce and remarriage rates, geographical mobility—families overwhelmingly continue to provide care to their members.

To accomplish this, family caregivers give up their own leisure time and sometimes sacrifice jobs and careers. There is no evidence that

shows that families are moving away from providing this care. Indeed, societal changes such as globalization and neo-liberalism have strengthened the traditional role of the family. Families continue to offer a refuge from the demands of work life, particularly families facing a variety of difficult economic and political circumstances.

Advanced technology extends the options individuals and families have for becoming involved with one another in spite of distances. While a segment of society now has families and communities at tremendous geographical distances, many others live their entire lives within narrow geographical confines. The family can become more important in this environment, as a haven from the harsh world.

Globalization makes it possible to help more people, but it also increases the danger that an inequality between citizens will grow. We saw this problem in relation to the digital divide: where computers are concerned, the haves and the have-nots are gaining social and economic benefits at increasingly different rates. More government involvement is needed to ensure strong human and social capital for all Canadians. One critical issue facing governments is how to fight vested interests and create policies that are in the interests of all citizens. However, money alone will not be enough; governments need to provide imagination and organization as well. The Commission on the Future of Health Care in Canada (2002)—the Romanow Commission—for example, showed that the health care system requires reorganization, coordination, and a redistribution of funds, not more dollars per se.

Governments also have a role in both national and individual identities, especially during a period of globalization when there is concern that nations' identities become diluted and individual lives become determined by global forces outside of their own and their country's control.

With globalization and the spread of American media, Canadian cultural values and attitudes may be less different from American values and attitudes than they used to be. This need not be interpreted as an Americanization of Canadians. Nonetheless, Canadian culture has always been at risk because of the proximity and

the relative size, wealth, and power of our neighbour to the south. A major challenge for Canadian governments is ensuring authentic public participation in order to increase the likelihood that Canadian values will be heard and represented. Ways must be found to capitalize on citizens' increased political skills. To ensure particularly identifying Canadian institutions, such as universal health care, governments must find new ways of working with citizens who are substantially different than in the past.

Problems Associated with Aging

Aging itself is not a problem; it is preferable to the alternative, dying. However, some social problems are associated with personal aging and population aging.

One thing that can be predicted with reasonable certainty is the continued aging of human populations. Even today there is concern about a shrinking base of workers will be able to support the growing elderly population in Canada. With aging, the population distribution takes on the shape of an inverted pyramid and the ratio of dependent elderly people to working-age people increases. This aging is the result of continued reductions in fertility and, secondarily, of increased longevity. Whether the younger generations can continue to support an aging population and whether the health care system can cope with demands for better care for everyone remain to be seen.

How society deals with the aging population will determine the future social problems that will be associated with it. Several possibilities present themselves. First, the childbearing population could be encouraged to increase the number of children they produce. This policy would be unlikely to have much effect given continuing declines over the past century, as well as social values (such as individualism) and opportunities (such as urban careers) that work against large family sizes. Second, Canada's immigration laws could be loosened to allow more young immigrants from countries with high fertility. Such a policy, however, would not be likely to win support from Canadians currently in the workforce,

who would see it as increasing competition for jobs. Third, a larger fraction of the national budget could be invested in health care. This policy would require either higher taxes (which are unpopular) or reduced spending in other areas, such as education (also unpopular and, in the long run, harmful to the nation's productivity).

Fourth, new ways to raise money might be found—for example, by selling land or water to the United States. However, this policy only works for a short time, as you can sell your inheritance only once. Fifth, through ingenuity or sheer good luck, wonderful new drugs or technologies might be invented; patents for their use would provide long-term wealth to support health care. However, this is not as much a policy as it is a wish. We cannot rely on good fortune. So in the end, it may be necessary for people to lower their health care expectations or pay more of the cost of their own care. This may require the elimination of mandatory retirement so that elderly people can earn enough for their own health care. Governments, for their part, may have to reject demands for further health care improvement out of public funds.

The Uses and Misuses of Information

Of all the changes that will bear on the future of societies, and on the future of social problems, none is likely to have more impact than cyberspace and the information that resides there. In that sense, in shaping social problems of the twenty-first century, nothing will be more real in its effect than virtual reality. This is because in an **information economy** such as ours, information is a major source of wealth and power, and more and more information is coming to reside in cyberspace. (See Figure 12.1 on the scale of the information technology industry in Canada.)

The Rise of Cyberspace

We are now living in what some have called the Information Age. As a species, we have more information about more ideas than at any other

time in history. We use this information and exchange it. Information is a commodity, to be bought and sold. Five centuries ago, scholars could decide what was the appropriate body of knowledge within any literate society, be that society Chinese, Western European, or another. It was still possible for someone to imagine becoming an expert—a knowledgeable person-in-everything. (People have thought of the Renaissance scholar Erasmus of in these terms, and some would speak of Leonardo da Vinci the same way.) Even 50 years ago, scholars could still distinguish the boundaries of knowledge—what was known and knowable from what was not.

However, today the demarcated body of knowledge is far beyond the reach of a single person, so that we require detailed specialization even within fields (for example, within chemistry, anthropology, or literature). This idea of the demarcated body of knowledge—of what educated people should know—has also been produced by technology of the day, as has the question of 'knowledge ownership'.

Until the invention of the printing press, people did not have an idea of authorship in the modern sense. In Europe, monks spent lifetimes copying ancient manuscripts (many deemed to be the word of God). However, most knowledge or information—information about growing crops, doing blacksmith work, weaving, or any of the other activities that were part of everyday life—was transmitted orally from person to person. The printing press changed this by making possible the rapid copying of what had previously taken months or years. Knowledge was now a thing that people could distribute among strangers, and printers sought material to print. Still, the idea of authorship took several centuries before it gained its modern form (Eisenstein 1979; Rose 1993). With the notion of authorship, or of the ownership of knowledge, came ideas about standards for knowledge. Eventually the standard, in the popular mind, became what was printed.

The ownership of knowledge is important, both for its own sake and for its market value. Increasingly, technology has made the borrowing, stealing, sampling, and reproduction of knowledge possible for everyone, through com-

puters, scanners, photocopiers, fax machines, and, of course, printing presses. The Internet further affects this relationship between consumers, producers, and knowledge, changing the whole way we view information and changing the relations of its production.

Business use of the new technology permits a shift in the location of 'work' to 'home' and allows companies to further spread their functions among many locations, whether these are towns, regions, or countries. The new electronic marketplace is made up of people who have probably never physically met each other but who share beliefs and ideologies, give mutual support, and exchange ideas regularly. The result is a creation of worldwide virtual communities - communities of interest and shared viewpoints that are unhampered by distance or by many social factors (age, race, gender, class) that often keep otherwise similar people from meeting or interacting with one another.

The Internet, unlike other information media, is not centralized and not restricted: anyone who can gain access to a computer and modem can participate. Community nets (or 'freenets') are developing in many towns and cities, often with terminals installed in public libraries, to give access to those who do not have computers at home or work. Pages for specialized groupings - women, African-Canadians, bikers, and so on -- are rapidly increasing in number. However, centralization, censorship, and monitoring of the Internet - always possibilities on the horizon. Without vigilance by users, the Internet could go from being an anarchic network of information providers and communicators to a means of surveillance.

The Social Organization of Cyberspace

Not only does the Internet ease information sharing, commerce, and social support, it also allows people to create and try out new identities. The capacity to generate real or virtual identities, in turn, is an essential aspect of postmodern relationships.

The virtual community, mediated by computers and populated by real and constructed

identities, provides cybersurfers with a new sense of community. In virtual associations, people may have multiple selves but they share a common goal and common identity. New technologies enable more fluid changes in language use that are largely free of indicators (for example, age, sex, or physical appearance) that limit self-expression. For example, women can experience ungendered interaction for the first time. In turn, this means people in Cyberspace can create new social and sexual relationships.

For example, people on-line can switch genders and, in this way, disrupt previously held beliefs about gender. Bodily attributes, such as sex or physical attractiveness, are simply irrelevant in cyberspace - at least in principle.

Cyberspace has the potential to blur the distinction between reality and fantasy. However, strange to say, people in cyberspace often behave just the same as ever. For example, many Internet communicators still behave in traditionally gendered and even sexist manners when they have information about the gender of the people with whom they are interacting. Likewise, the 'sexpics' trade over IRC (Internet relay chat) links provides sexual acts and identities that are conventional compared to offline heterosexual norms and (pornographic) representations.

Beyond that, people in cyberspace are just as immature and unkind as they are in real life. Internet relationships are characterized by an increased control of self-information (that is, impression management), short-term and easily forgotten relations, illusions of omnipotence, and avoidance of responsibility and commitment (Gerlander and Takala, 1997).

The ability to depict oneself in a variety of identities and personalities creates a 'zone of confusion' between reality and common-sense notions of the imaginary. There is a danger the Internet promotes emotionally disconnected or superficially erotic contacts. Although anonymity in Internet communication can encourage the development of meaningful personal relationships and allow less powerful users to challenge authority figures, such anonymity also allows malicious communicators to depersonalize others for amusement, and more powerful users to distance themselves from responsibility.

Participants online may experience ambivalent feelings about self-presentation. On the one hand, they may wish for involvement and a presentation of real, and not merely realistic, selves. On the other hand, they may fear self-revelation and lack an ability to trust those whom they contact. The exercise of social control is almost impossible in cyberspace. Online communities develop with more free riders; problems arise in establishing boundaries and defining membership. Conflicts develop between competing communities, and even among members of the same community. Internet technology, some believe, is resulting in decreased human interaction and community cohesion.

At the same time, the growing influence of cyberspace has resulted in increased power for large corporations and larger power disparities between races, classes, and gender. Commercial, military, and professional contexts are driving virtual technology toward better uses in entertainment and military training. However, few benefits are being seen for the majority of ordinary people. Concentration and commercialization undermine the democratic potential of new communications systems. And outside the Internet, life goes on as it did before. A politics of digital inequality is now surfacing, and questions are arising about the basic conditions of access, capability, and distribution in cyberspace.

The creation of the Internet led to utopian fantasies of citizen empowerment and the revitalization of democracy. Some observers call it the 'Californian ideology'—the belief that the use of new information technologies will create a new democracy that allows everyone free expression in cyberspace. However, dominant economic, social, and political forces in society are struggling, with some success, to capture and regulate the Net. Virtual reality has come to resemble the real world; ordinary, everyday politics have captured cyberspace. Today, every variety of human is found in cyberspace, flogging every type of idea and product. Humanity is no better than before, just more virtual.

The new forms of virtual community, and the technological and cultural resources required for participation in them, are likely to create new forms of stratification and, therefore, barriers to

universal access. Given society's social and racial polarization, only some people have access to the new technologies. A reliance on unregulated market forces will create social distance between the 'information rich' and the 'information poor'. Global inequalities of access to information technology mean an increase of Third World disadvantage, reinforcing existing power structures. To avoid even wider inequalities of power and wealth, we must address concerns of territorial sovereignty, unequal access, and guarantees of privacy and security.

What sort of interaction occurs now, and will occur in cyberspace in the future? What kinds of social classes exist there? What sociological ideas should be used to explain this phenomenon? We can probably apply existing knowledge to understand what is going on. Imagine cyberspace as a new frontier in which strangers exchange information and practise impression management on one another in a context rooted in three ways. First, the strangers are themselves the members and products of certain genders, classes, races, and childhood experiences. Second, their interactions are all rooted in a particular historical moment. Whatever they may fantasize, the interactants live at a particular time and place that offers particular opportunities and constraints.

Third, and more specifically, the interests, goals, and technologies of large organizations—chiefly, states and private enterprises—bound their interactions. These organizations have no interest in supporting the creation of a mass democracy based on universal equality. Everything depends on what kind of information people are able to get. And, as we have said, the powerful and wealthy will attempt to control what people know. This issue leads, necessarily, into a discussion of information diffusion and two particular forms of diffusion: rumours and contagion.

Rumour, Contagion, and Moral Panics

In an information society, all social, economic, and political life depends on the quality of the information available. This makes the with-

holding, piracy, and distortion of information more problematic than ever. In this context, one foreseeable social problem of the future concerns **rumours** and **contagion**, two deviant forms of information flow that can have powerful consequences for societies of the future.

Rumour

In the summer of 1986, during an intense drought, rumours spread through the Dordogne region of France. Allegedly, cloud seeding that was intended to prevent hail and was sponsored by large agricultural enterprises—by Spanish 'tomato barons'—had miscarried, and this had caused the drought. Similar rumours about the Spanish 'tomato barons' had surfaced in 1985 and earlier, during equally severe droughts (Brodu, 1990).

The rumours contained inaccurate information. While cloud seeding is notoriously ineffective at producing rain, there is no evidence that it can prevent rain. Such rumours appeal to people in a time of drought because of popular superstition and the general unreliability of techniques for controlling the weather. Nevertheless, other factors enter in as well. These rumours have a political content that is just barely hidden below the surface. There is a reason the French rumour-mongers blamed Spanish 'tomato barons'. After all, the French and Spanish people have been military and economic rivals for over 500 years. Moreover, the alleged wrongdoers were barons—people of wealth and standing. Rumours often contain allegations of wrongdoing by the powerful against the powerless. By studying rumours, we learn something valuable about the organization of society, and about the organization of people's fantasy lives.

Sociologists view rumours as 'improvised news' (Shibutani, 1966). From this standpoint, rumours are closer to other forms of individual and collective information seeking than they are to dreaming and escapism: a rumour is information provided to solve to an ill-defined problem. In creating a rumour, members of society draw on their limited stock of cognitive resources, but in a purposeful manner. Rumours that convey stereotypes or archetypal images are more likely

than other rumours to gain currency in the media and in public discourse and are more resistant to denial. The most 'successful' rumours correspond to what people hope or fear will come true rather than to what has really happened. The power of the rumour is not in its outburst, but in its making visible otherwise invisible relations.

Contagion

Like rumours, popular anxieties can spread rapidly. Often they reflect anxieties about immoral behaviour. For example, during World War I, across Great Britain, young women were seemingly so attracted to men in military uniform that they behaved in what people considered immodest and sexually dangerous ways. People called the outbreak of licentiousness 'khaki fever'. This wartime loss of social control caused public anxiety over young women's social and sexual behaviour. 'Khaki fever' appeared to infect not only the morally lax poor, but even girls from the normally upstanding middle class. Today, we understand that this fear of 'khaki fever' was symptomatic of a change from the secretiveness of the nineteenth century to a more open public display of feminine sexuality in the twentieth century. In turn, the growing openness of sexual display went along with a growing social and sexual independence for women (Woollacott, 1994).

This supposed outbreak of female sexuality illustrates many elements of contagion that need discussion. Most important, with contagion a new behaviour spreads rapidly. People fear that immorality is 'catching', or infecting everyone. The fear is itself contagious, producing what sociologists now call a *moral panic*.

Contagion, like contact, comes from the Latin word for 'touching'. It refers to the passing on of something—whether information, behaviour, or disease—by direct contact or touch. In this respect, contagion is merely one form of diffusion. It is also a form of diffusion about which people have old and deep beliefs. The magical law of contagion, a traditional belief, holds that properties, both physical and moral, can be transferred through contact, so that some

essence passes from source to recipient. Andrey D. Mikhailow (at <http://www.itee.uq.edu.au/~bof/Variou/magic.html>) reports "Objects or beings in physical contact with each other continue to interact after separation. Everyone you have ever touched has a magical link with you, though it is probably pretty weak unless the contact was intense and/or prolonged or repeated frequently. Magical power is contagious. Naturally, having a part of someone's body (nails, hair, spit, etc.) gives the best contagion link."

Even today, some people act as though they fear that poverty or mental or physical deformity may be catching. This helps to explain the stigmatization and marginalization of some groups.

All forms of diffusion, contagion included, have certain common features. As compared with information that is broadcast, information that is diffused relies on personal connection. For diffusion to occur, a relevant exposure link must connect the people involved. The person receiving it must accept the object of diffusion—for example, a rumour. Having once received the rumour, the recipient continues to have it indefinitely. The same rumour (or other object of diffusion) cannot diffuse twice to same person. These basic features of diffusion are also basic features of contagion, and, like diffusion, contagion is strongly locational. It spreads information spatially, from near the source to farther away. Therefore, the object of contagion shows concentration in space. Over time, the concentrations gradually grow, spread out, and move.

Many view contagion as the unreflective, irrational adoption of a trivial or worthless new behaviour. In this respect, contagion is a disparaging view of diffusion and innovation, associated with mass or popular rather than elite behaviour. Unlike much other innovative behaviour, contagious behaviours are supposedly impulsive (not rational), possibly destructive (not adaptive), ambiguous (not predictable), and group-driven (not fitted to individual needs). In this view, contagion relies on what we might call a snowball effect. A mass or crowd of undifferentiated, irrational actors collects through contagion and then behaves in mindless ways.

Thus, contagion is a form of diffusion that produces group activity that is disapproved of. This is largely how people viewed 'khaki fever' at the time. Like a contagious disease—measles or the common cold—a contagious behaviour follows special rules. First, it requires the simultaneous actions of multiple senders in order to build up a critical mass of influence on the receiver. Second, receivers vary in their openness to the message; some are not merely indifferent, they actively resist it. This not only prevents their adoption of the information, but may even discourage the information sender from making further attempts. Senders are likely to stop their efforts after a certain time. The message 'dies out'—that is, loses its currency—or the sender becomes discouraged and does not attempt to send the message. Said another way, people stop trying to change other people's behaviour when they feel they have made themselves look like idiots.

Some flow processes—epidemics, protest movements, popular fads, high divorce rates—only happen if a few people become involved and remain involved. If the new information or behaviour does not catch on, the spread will decline and die out. Epidemics are most common in populations in which uninfected people have a high average vulnerability and a frequent rate of contact with infected (or information-bearing) individuals.

What is remarkable about collective behaviour is that different people with different motives may generate the same behaviour. Moral panics arise when people come to believe in the existence of a threat from new forms of deviance. However, irrationality is not essential or primary to collective behaviour; outsiders often wrongly assume it. For example, ordinary people respond effectively when people in authority fail to do so. Formal organizations and government often fail to mobilize as quickly as expected because of flaws in emergency response planning. Typically, communication deficiencies, not motivational deficiencies, undermine response efficiency and lead to coordination problems.

There are good sociological (that is, organizational) reasons for seemingly irrational behaviour. Take the crowd crush at Hillsborough

Stadium in Sheffield, England, in 1989. A belief that gaining access to the soccer game being played there was both possible and desirable motivated this crush, despite a shortage of space and tickets. Structural conduciveness was created through media hype, poor distribution of tickets, and a market differentiated between ticket-holders and non-ticket-holders. Uncertainty about the possibility of gaining access to the match contributed to the general belief that access could be gained by force. Media hype, poor organization, and aggressive peers all pushed towards action. Poor police and stadium security weakened social control (Lewis and Kelsey, 1994).

Another explanation of the coincidence of irrationality and catastrophe is not that normal people become beastly, but that beastly people come to appear normal. At the outbreak of wars, for example, psychopaths and other social outcasts are able to shift attention away from their personal problems and express violent emotions against internal and external enemies. Likewise, disasters and emergencies of other kinds are likely to bring the beasts out of the woodwork without turning normal people into beasts.

Contagion, then, is a process of diffusion that is especially important to sociologists, particularly in an information society, because it addresses the question of how individuals link together and eventually form large groups capable of collective action. Out of pairs—through aggregation—come networks, movements, parties, and other large organizations. Central to this transformation is the flow of information, which we have been calling diffusion, and the aggregative process that is contagion. Like other forms of diffusion, contagion passes information through networks of personal contact, although important information may also pass by means of broadcast.

This change, like others we have discussed, often passes through stable networks of personal relations. As we have seen, wrong information, in the form of stereotypes and rumours, can produce a great deal of social harm. It is our job as educated people to learn the difference between facts and fantasies. It is our job as sociologists to learn how to understand and, if possible, control

the creation of fantasy. If we fail to do so, the information society will become a misinformation society, and moral panics will be more common than not. Eventually, all information will lose credibility.

The Need for Modest Optimism

It would be appropriate to end this paper on a note of optimism that we will eventually be able to foresee and solve our social problems better than we can today. What are the chances that we will be able to do this in future, and what do we need to do as sociologists to make this possible?

The answer to this question becomes clearer when we consider our knowledge, or lack thereof, in relation to the basic social processes that underlie social problems. Consider, for example, our understanding of the flows-diffusion, migration, mobility, renewal (or turnover), for example—that are the basis of all social organization. We know that these flows have certain common elements: source, length, volume, rate. They move through channels and, as such, are subject to flooding and damming.

We know that flow processes are locational changes over time. Sometimes they are processes of change in the social system, and sometimes they are so great that they bring about processes of change of the social system. We know that flows are both markers and makers of social structure. In effect, what we call social structure is merely frozen change-flow processes caught a moment of time.

Time is the backdrop for studying both change and structure. This fact means that as sociologists, we need to have a clear understanding of what we mean by correlation, causation, and theory. Time is of the essence in any social theory. To study flows in time is to study all of the central issues in social science. But what do we actually know about the timetable of everyday flows? We must end this paper by confessing that we know very little about the everyday processes that make up the large processes and structures that we call social problems.

Here are some of the things sociologists will, eventually, have to measure and explain:

How long it takes for

- a rumour to pass through a town
- a fad or fashion to die out
- migrant families to assimilate
- a person to find a mate
- a chat room to form in cyberspace
- a jury to decide a murder case

What the half-life is of

- a job search
- a spy network
- a household

What the age structure (or life expectancy, or average age) is of

- 100 Web sites in cyberspace
- 100 social support networks in Quebec
- 100 best-selling books in English

Here are some more difficult, but somewhat easier, problems to which we need to find the answers:

Under what conditions it will take half as much time as usual for

- a rumour to pass through a town
- a fad or fashion to die out
- a secret to be exposed

What the optimal length of time is for

- a person to find a mate
- a chat room to form in cyberspace
- a jury to decide a murder case

How we might speed up

- the completion of a job search
- the discovery of a spy network
- the building of a social support network

How we can double the rate of renewal of

- the Canadian system of beliefs
- the 100 best-selling books in English
- information technology used in British Columbia

To answer these questions, sociologists will need to go about their research in a different way. Finding the answers to these questions will take general agreement on research strategies

and research priorities. It will also demand a wider variety of reliable research strategies. We agree with Sohail Inayatullah's recent call for a causal layered analysis (CLA) that integrates empiricist, interpretive, critical and action learning modes of knowing. His method is aimed at both developing more effective, long-term policy and helping humans to create alternative futures by recognizing multiple levels of reality that Inayatullah calls *the litany, social causes, discourse/worldview, and myth/metaphor*. The research challenge, as he points out, is to move up and down these layers of analysis, employing different ways of knowing. Certainly, in light of our failure thus far to know the future by means of the traditional "scientific method," this advice is worth heeding,

Therefore, as to whether we will eventually be able to foresee and solve our social problems better than we can today, the chances are good in the near future. We know what we need to do as sociologists to make this possible, and all that remains is the doing of it.

Sociology has historically been a moral discipline. Sociologists who study social problems often think of themselves as engaged in a moral enterprise whose goal is to improve human societies through social change. Seven value preferences guide their enquiries: life over death, health over sickness, knowing over not knowing, cooperation over conflict, freedom of movement over physical restraint, self-determination over direction by others, and freedom of expression over censorship (Alvarez, 2001).

Sociology-social science more generally, and systematic research most generally of all-has made progress in each of these areas. We know more than we did a decade or a century ago. Our progress is slow and we forget some of what we knew as we move forward, so our progress is lurching, unsteady, and uncertain. Modern societies, it turns out, are not as liberating as people living 200 or 500 years ago expected they would be. Leonardo da Vinci, Erasmus, John Stuart Mill, and Voltaire would be surprised and not necessarily pleased with many of the things to see in an average Canadian city today. Some changes would seem like a parody of their hopes and aspirations.

Yet the dream of human betterment through science and knowledge remains. Although some claim that we are a postmodern society, a majority of people still look to science and technology for entertainment, comfort, safety, and reduced drudgery at work and home. Though religious fundamentalism prevails in some parts of the world, giving people there a needed sense of identity and hope for their own future, religion in the West is post-biblical. Unlike the writers of the Old Testament, we do not believe that disaster—a fall from grace and banishment from Eden—is an inevitable result of knowledge. We believe that knowledge is generally better than ignorance and that more people knowing the truth is better than fewer—only priests and gods—knowing the truth.

Fear and ignorance, as we have seen in our discussions of diffusion, are the context within which lies and errors spread. They support stigma, stereotyping, discrimination, vilification, and warfare. There are many sources of fear, not least the deprivation and violence that flow from vast social inequality. It is difficult, therefore, to do much about fear by writing or reading a book. Ignorance, however, is something we can address, and begin to remedy, by spreading information. Freedom of expression is not only a good in itself, one of our seven guiding values; it is also a means to achieving the other six.

This paper has not presented the answers or solutions to our most pressing social problems, but it has succeeded in asking many of the most pertinent questions and in giving some indication of where the relevant research is headed. Much more needs to be done, as we have seen. The readers of this paper are prime candidates for doing this needed work. We hope that you are inspired, not turned off, by the importance of the work before us. Given the hopes of humanity, we have no choice but to make the effort.

Concluding Remarks

Knowledge is, to some extent, empowering. As we have seen, wrong information, in the form of stereotypes and rumours, can produce a great deal of social harm. It is our job as educat-

ed people to learn the difference between facts and fantasies. It is our job as sociologists to learn how to understand and, if possible, control the creation of fantasy, in the belief that understanding public issues is better than not understanding them. Armed with a greater understanding of the social problems we face, we can pursue solutions through both individual and collective actions. Individual solutions are often easier to achieve, but in the end collective solutions are the only road to long-lasting changes.

As this paper has shown, there are a few master problems—in particular, inequality and exclusion, ignorance and misinformation—and they play out in many combinations and historical variations. Our future as a species will depend on our ability to understand and moderate the more harmful versions of these problems.

Cyberspace in particular offers us a variety of exciting, challenging, and dangerous opportunities: to create virtual communities that have no visible location, to participate in world events almost instantaneously, and to observe human life in every part of the world. Cyberspace reduces the constraints of space and time to nearly zero. In doing so, it plunges us mere mortals into a larger, faster-moving frog pond than any we have ever known before. Can we handle the challenge?

As with all technological advancement in the last two centuries, the development of cyberspace makes it more likely that we can build a better mousetrap and a better gas chamber; we can cure our deadly diseases and create new ones; we can tell each other more truths and more lies—more quickly (and persuasively) than ever before. How we will survive this ordeal by information remains to be seen.

Nothing shows more clearly than cyberspace the opportunities and dangers that face humanity when new information technology produces 'new societies' without tradition or regulation. Nothing shows more clearly than futures studies the desire of humanity to imagine and, through imagination, to control the future.

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