

1994

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### Recommended Citation

Jack R. London *Exponential Change: Today Is Already Tomorrow*, 3 *Annals Health L.* 153 (1994).  
Available at: <http://lawcommons.luc.edu/annals/vol3/iss1/12>

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# Exponential Change: Today is Already Tomorrow\*

*Jack R. London\*\**

For those of you who are of the new age, that is, the age of exponential change, let me give you a brief, inevitable executive summary of my remarks today. From a lay perspective, the medical profession is stuck in the past. The reality of exponential change is being denied. Paradigm shifts are required. Because the profession stays rooted, it is losing the public battle of professionalism. It has not internalized the influence of change, personally or institutionally. The balance of this address is simply intended to put flesh on the bones of that executive summary.

Once upon a time, scientific, social, and intellectual developments took place over many years. We thought in terms of eons of time. People had time to adjust. For example, fire was the big number for hundreds of thousands of years, tools for tens of thousands, shelter for tens of thousands, and then, the printing press, machines, and energy, all of which were expressed in terms of centuries. And, basically, during all that time, moral principles wavered almost not at all. Right was pretty easily delineated from wrong. Your lifestyle was pretty much summarized by that of your great-great-grandparents. There clearly was a God (sometimes even several). And young people were disciplined by and obedient to older people.

Consider, for example, that it took the Catholic Church 383 years to acknowledge, as the Pope did in 1985, that it, not Galileo and Copernicus, was wrong; that the earth revolved around the sun; that the earth itself revolved; and that God had not created us as the centre of the universe. Three hundred

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\* This speech was delivered at the Fourth Annual Comparative Health Law Conference, "Medical Malpractice: A Comparative Analysis," sponsored by Loyola University Chicago School of Law Institute for Health Law in October of 1993. It is a revised and updated version of a speech originally presented to the British Columbia Medical Association Annual Meeting at Harrison Hot Springs on June 4, 1993.

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eighty-three years. For some time, it is true, it was known that Galileo had been right and the Catholic Church wrong. But the Church was not moved for hundreds of years to acknowledge its error. There was no crush of time, and in the battle between Galileo and the Church, that is in the battle between reason and faith, there was no hurry. In the contest between every person's right to think for him or her self, as represented by Galileo, and the need to maintain discipline, obedience, and order through uncritical acceptance of dogma, the power of orthodoxy prevailed, as always.

Until now, in fact, time has been the ally of the status quo. Slow change has been the pillar of support for those who believe that order can be maintained simply by denying the evidence of change or changing perceptions.

But all of that has changed so quickly that we have yet to blink. It is as though we live in a world immersed in a strobe light; we might call it the staccato life.

With some help from an anonymous source, let me ask you to consider the changes witnessed by those of us who were born after World War II:

We were born before television, before penicillin, before polio shots, frozen foods, Xerox, contact lenses, frisbees and scanners. The pill was aspirin, . . . satellites were baseball teams, . . . space stations were fiction; and, even Jackie Gleason had not yet heard of a trip to the moon . . . [I]n fact, we had not yet heard of television. We were before radar, credit cards, split atoms, laser beams and ballpoint pens; before pantyhose, dishwashers, clothes dryers, electric blankets, air conditioners, drip-dry clothing . . . and before actors were allowed to be politicians. We got married first then lived together, how quaint can you be? In our times, closets were for clothes, not for "coming out of," . . . bunnies were small rabbits and rabbits were not Volkswagens. We thought fast food was what you ate quickly, outer space was the back of the local theatre and having a meaningful relationship meant getting along well with your cousins. We were before househusbands, gay rights, computer dating, dual careers and commuter marriages. We were before daycare centres, group therapy and nursing homes. We never heard of FM radio, tape decks, electric typewriters, artificial hearts, word processors, yogurt . . . and guys wearing earrings. For us, time sharing meant togetherness . . . not computers or condominiums; a "chip" meant a piece of wood or a French fry; hardware meant hardware and software wasn't a word! You could buy a new Chevy coupe for \$600, but who

could afford one; a pity too, because gas was only 11 cents a gallon . . . . That's anachronistic language for a volume of four litres! [I]n our day, cigarette smoking was fashionable, grass was mowed, coke was a cold drink and pot was something you cooked in. Rock music was grandma's lullaby and aids were helpers in the principal's office. We come from a time when the third world wasn't, the iron curtain had yet to fall, . . . let alone be raised again, . . . open marriage meant talking to each other, CDs were someone's initials, Madonna represented a religious experience and only men wore pants . . . .

The new exponential change, ever multiplying by itself, has produced much that is good. We lead easier physical and material lives. We live longer. We have greater personal autonomy. This change has given us undreamed of social, economic, spiritual, sexual, and psychological freedoms. We are the envy of the ages. But we have paid for those freedoms with ever-increasing frustration, anger, and disorientation.

Institutionally, we have taken the route not of adaptation, but the one best expressed by that wonderful senior citizen in the southern United States who simply refused to believe that men were walking on the moon. Institutionally, educationally, legally, medically, politically, environmentally, and economically, that is what we have been doing: we have been denying the changes around us not only at our own peril but, more importantly, at the peril of our children.

In education, we tinker when we must make paradigm shifts. In law, we are using horse-and-buggy doctrines to deal with mega-disasters on the order of the Exxon Valdez, Bhopal, and Chernobyl. Think about that for a second: the principles that are being applied in attempting to cope with the regulation and resolution of disputes surrounding Chernobyl, Bhopal, and the Exxon Valdez essentially flow from the breadth of mind that considered what was to happen in merry old England if your dog crossed onto someone else's property. In medicine, we live with the technology of the future but the ethical parameters of the past.

Obviously, we are incapacitated for we have not yet recognized that, for the first time, it may well be true that merely perusing the annals of history will not assist us in coping with the present, let alone the future.

The fact is that we all say more often now than we ever did before: "I just don't know anymore." We say that because there is so much more to know. Our ethics, values, and princi-

ples are situationally dependent on the last piece of information we received, which we received simply an instant ago. Yesterday's tradition no longer has relevance. In fact, tradition now depends on what will happen tomorrow.

Through the efforts of many authors, notably Alvin Toffler and Marshall McLuhan, we have been aware, intellectually, for some time that the very concept of "change," qualitative and quantitative, has been transformed. We know that in both volume and pace our lives are profoundly affected by new orders of understanding, information, and technology. However, although we grasp the concept of exponential change intellectually, we have not yet come to comprehend its effects on us at the emotional level. We have not integrated mechanisms for dealing with the instability that change of this kind introduces into our political, social, economic, and personal systems and institutions. We continue to live as we did before without realizing that the status quo really no longer exists, or at least that it has been so compressed in duration that the term "status quo" is now a misnomer.

More concretely, we can look at five areas of concern in our lives that demonstrate the challenges of exponential change and the current failure of our society to cope. First, in education, we continue to develop systems based on models of passive rather than active or student-centered learning; the transmission of substantive information as opposed to process; details rather than learning both how to access information and to develop abstract thought skills. Yet, all of these will be required in the information age.

In the world of law, we have to prepare ourselves for the age of jurimetrics (that is, decision making by artificial intelligence, by computer), legal services by remote, and the effects of an increasingly conflicted, rights-oriented, litigious society (everyone suing everyone else). We have yet to develop a general theory of "fairness," to question the survival of what once were fundamental democratic notions, for example, the presumption of innocence.

At the ethical level, we can identify the continuously widening gulf between technological advances and basic ethical and moral values development. In bioethics, the development of technology has far outstripped our ability to respond to matters of euthanasia, genetic engineering, the new reproductive technologies, surrogate mothering, the tracing of lineage, the al-

location of scarce financial and medical resources, and the interaction of the commercial marketplace and the delivery of medical services. If there is one kidney around to transplant and three who need it, who gets it: the genius, the affluent individual, or the convict?

In the world of business, technological advances and the demand of the have-nots run in constant conflict with environmental concerns and the need to deal with finite resources, let alone world ecology. How can the affluent of the Western World continue to deny the developing Third World its right to material riches, even if they base it on the inevitable industrial pollution that may destroy the earth?

Lastly, in terms of information acquisition, what will be the impact on our lives of personalized news programming, that is, customized daily news programming at our fingertips, decreased reliance on reading as a source of information or gratification, and, perhaps most challenging of all, the notion of what we will do in the day of, what I call, the “knowledge implant”: the time when each of us, at birth, metaphorically at least, will be implanted with a chip through which we will always know all there is to know. If religion felt challenged by Galileo, how will it deal with all-knowing human life? Where will God be then?

We are bombarded on all fronts. As the technology of science has extended our life expectancies, which now for the first time in history exceed the age of eighty for women in Iceland and Japan, we find ourselves faced with moral and ethical issues with which we have tinkered in the past but which have now become an avalanche of conflict. The morality, legality, and methodology of euthanasia are classic examples.

Take the following everyday realities and test your understanding of whether the principles of your community have kept up with the realities of the technological revolution.

An Alzheimers patient, her life extended indefinitely by biotechnical breakthroughs, in the middle throes of the disease, racked with fleeting consciousness and, in those moments, aware of and disgusted with the changes taking place in her life, begs you to terminate her life. If you do so actively, you will be guilty of murder and may face incarceration for many years. Our law now says that. The motive of a person causing the willful death of another is irrelevant in determining guilt. Given an aging population and the manifold increase in situations of this kind, where both mental and physical health are impaired to the

point of reducing the quality of one's life below a level acceptable to that individual, must we amend our criminal laws and our medical-ethical standards in order to account not for a principle of absolute sanctity of life, which is where we now are, but one of reverence for the quality of life?

Take the case of an infant born with a congenital heart disease. Uncorrected, the disease will lead to certain death. But the child is also born severely retarded or dysfunctional or disabled. What are the ethics of not providing corrective surgery to that infant? Now that medical science is able to sustain that child, should it? Who ought to make the decision: the parents, the physicians, the clergy, a judge, or a government tribunal? If the parents are not prepared to care for the child, should the state support that child's life?

Take a third example from the increasingly intertwined worlds of medicine and law. Medical science has now developed to the point where surgery can be performed on an embryo *in utero*. Assume, once again, an embryo with a congenital defect that, if not corrected *in utero*, will lead to death. Assume further that the mother refuses to allow invasive surgery on herself in order to correct the defect. Should our moral principles and our legal system require the mother to submit to the surgeon's knife to protect that other life form? Or, if the mother is unconscious, is it permissible for the surgeon to perform the procedure without the mother's consent? If your answer is yes, take but a short hop, skip, and jump from there: is it the right of the state to incarcerate a pregnant woman who is guilty of gross substance abuse in order to ensure that the fetus is not affected by the mother's abuse? Is it proper for the state to put the mother to an election: either abort the fetus or be incarcerated?

Issues of whether or not to permit surrogate mothering, whether frozen embryos have the right to inherit property from deceased donors, who owns frozen pre-embryos in the event of a divorce, whether individuals threatened by death should be allowed to take experimental but unproven drugs, whether assisting in suicide should continue to be a criminal offence, and the like, all demonstrate the extraordinary pressures that technological advances and the explosion of information have wrought on our individual and collective psyches.

All of these cases, the arguments that they engender, and their ultimate resolution share a certain number of common themes. The first is that once one gets beyond the dogma and

structure of faith, the resolution of each of these dilemmas is dependent on the struggle of human and political values, which have no homogeneous, central, consistent, and inevitable core from which answers will flow. We are constantly adrift without the rudder of absolute truth. Second, because responses inevitably will be situational and rational, the responsibility for making those decisions falls ever more heavily on those who are in control, whether at collective or individual levels. With that control comes responsibility and with responsibility comes anxiety, resulting in a yearning for structure that will relieve the anxiety, a willingness to trade freedom of thought and conscience, notions of individual autonomy and independent action in favour of regulation, subservience, or at least compromise, and a concession to orthodox authority.

Once we could retreat into specialty. But even there the change is now prolific and, more importantly, the community of specialists suffers from a lack of generalist connection. As lawyers, physicians, or educators, we once had a sense of paradigms that were relatively coherent, known, and around for long enough periods of time that organizational planning actually could take place. I am not sure that is still the case.

Essential to our understanding is the notion that massive and rapid change is the antonym of structure and stability. Whether the function of structure is a matter of personal discipline, that is, intellectual, emotional, sexual, or interpersonal, or systemic discipline, whether professional, educational, regulatory, or scientific, the function of structure in each of those cases is to produce an orthodoxy, a method of answering questions and resolving dilemmas quickly, efficiently, easily, and, perhaps most importantly, without taking personal responsibility for the outcome. That is the wonder of orthodoxy: you do not have to think. Too much responsibility, after all, breeds anxiety and, in turn, widespread self-recrimination, doubt, and fear, and those, in turn, breed certain dysfunction or disability. As parents, we instinctively know this and so we attempt to build structure into the lives of our children so as to relieve them of the responsibility of decision making. If everything is always on the table for decision and each of us is responsible to make those decisions individually, unless we are super-matured we often will stumble and fall and feel bad.

Massive and rapid change breaks down those structures of orthodoxy because the information that is delivered to each of us

and the technologies that are at our disposal effectively empower each of us to dispense with structures and do as we choose to do rather than as we are told to do. It is a cliché that knowledge is power. It is equally trite to say that knowledge together with technological capacity can give each of us the sense of being empowered—empowered to seek our own level, our own values, our own ethics, our own paradigms, our own style. (Notice the emphasis on “self.”) In other words, the changes wrought by the information and technological explosion massively and rapidly deliver the possibility of real “choice” to each of us as individuals. That, in turn, not only requires new systems so that the community can continue to function well and as a whole, but also new ways of coping with the anxiety that that kind of responsibility produces in our still relatively immature evolutionary stage as a species.

Some of us do just fine. Some cope with the responsibility by choosing suicide: witness the rapid growth of that phenomenon, particularly among the young and the disadvantaged. Some cope by excess: witness the conspicuous consumption of the yuppie generation and the “me” decade. Some turn to violence or other forms of antisocial behavior: witness the incredible increase in substance abuse in the professions and of criminal behaviour within our community. Most, however, try to find comfort, solace, the “answer” in familiar structures, usually older structures but sometimes new.

The fact is that even these returns to structure, for which we yearn, do not work because, once again, the volume and rapidity of change will re-empower us and, inevitably, will cause us to break out of those structures to quickly move forward yet again.

So what is new? What is new is the “strobe effect,” the quickness of the cycle. What is really happening is that the pendulum swinging forward and back, individualism and structure, responsibility and irresponsibility, is being narrowed into an ever more rapid cycle that resembles the passion of a percussionist issuing an ever more rapid beat on the drum. At some point, the cycle becomes exhausting.

We simply will not stay in the old structures because we will always have very recent memories of the freedom from structure, which, notwithstanding the anxieties it produces, will always be attractive to us, as freedom always is. But we will continue to have extraordinary difficulty in assembling and comprehending the new flood of information and technology, which,

in turn, will take us back to the structure, which, in turn, will feel uncomfortable and unacceptable.

The image of the new world is such that the words “new world” must be followed by an exponent of massive disorder. For example, the role of women in this society has been revolutionized in only twenty-five years; the effect is that women are exhausted and men are anxiously dysfunctional. Women are double-loaded and men are not helping. Liberation is “correct,” to use the new jargon, but we are lousy at coping.

Let me finally take us back, then, to the world of medicine. The anxiety, confusion, and disorientation resulting from exponential change have impacted medicine and its practitioners, so as to produce a kind of siege-like state in which they, both as individuals and as institutions, can best be characterized as “defensive.” Both are in a defensive mode on at least four grounds: 1) proprietary rights (territoriality), 2) ethics and morality, 3) the practice of medicine, involving sometimes inappropriate and costly medical practices and testing, and 4) fiscal responsibility.

I would suggest that more and more frequently, doctors are now asking: “Who am I?” “What am I doing?” “How am I doing it?” “Why am I doing it?” “What in the world are my real obligations and responsibilities?” Answers that once were clear are now quite obscure and dissatisfying.

On the issue of territoriality, physicians seem to be demonstrating quite incredible resistance to notions of teamwork and paraprofessional equivalence. The notion of the nurse as the front-line general practitioner of the future strikes quite an unresponsive chord. The common defense is that only the physician has the power, education, or experience to be in control, control that is a necessary function of the proper delivery of health care services. Maybe so. I am unprepared and uninformed to deal with that defense in detail. However, since it appears that networking, integration, teamwork, part-time physicians, and the dominance of paraprofessionals (including nurses) are ever-increasing realities, one must suspect that the defense is simply that—a defense, brought on by the disorientation of so rapid and voluminous a change in the medical landscape, quite different from a practice that might have been expected by one trained, say, in the fifties or sixties.

In fiscal terms, it does not take, as Don Cherry, a Canadian hockey commentator, would say, “a rocket surgeon” to see the handwriting on the wall. Capitation, income limitations for the

young and the specialized, scrutiny of procedures, the decline and fall of universal medicine in Canada, restrictions on licencing, reduction of classroom seats and hospital beds, increases in community-based health organizations (the list is endless) foretell the end of an era. And how quickly it has all happened. How rapid has been the rise in cost of the utilization of the system and the convenient labelling by governments of the physicians as the scapegoats. In a time of exponential change, particularly technological change, the growth in utilization of the medical system, and the magnitude of its ultimate cost, would not and could not have been predicted in Canada by Canadian politicians such as Tommy Douglas,<sup>1</sup> Lester Pearson,<sup>2</sup> or perhaps even Pierre Trudeau.<sup>3</sup> It has all happened so fast, and it has caught physicians off stride. Not having internalized the outcomes of exponential change, physicians have been playing catch-up politics and losing the battle of the airwaves ever since. The establishment of trade unions among physicians has been one response, a growing response, but a response that ought to have been in place long ago in order to stem the tide both of interference with the practice of medicine and fiscal restrictions on doctors. Organizations like the Canadian Medical Association and the provincial Colleges of Physicians and Surgeons need to reassess their roles and functions to switch from a reactive, defensive posture to a proactive and future-oriented posture. They must be seen as being in the vanguard and forefront of thought, indeed to control it in some ways, or the place and incomes of physicians in Canada will continue to slide. Those who simply oppose change inevitably lose. Those who influence its regulation have a chance to survive. The point about living in a time of exponential change is that control is much more difficult to attain and yet that much more important than it ever has been. If one relies simply on the trade union models of the past, one has already lost the battle of the future. Physicians must be designers, not simply defenders.

On the legal front, defensive medicine, a reaction to the increasing threat of professional discipline and suit for medical negligence, is commonplace. As technology has advanced and

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1. Former Premier, Province of Saskatchewan, who introduced the concept of universal government medicine in Saskatchewan, circa 1948.

2. Former Prime Minister of Canada, who authored the national medicine plan, circa 1960.

3. Former Prime Minister of Canada, circa 1980.

rights litigation has exploded, it was natural that the medical profession would be a primary target.<sup>4</sup>

I spoke at a conference in Cyprus in mid-1993 and was reminded by a colleague of an interesting anecdote. In 1424, a case of malfeasance, or what we would today call negligence, was heard by the mayor and aldermen of London who were sitting with the overseer of the medical faculty of London and three surgeons as assessors. The plaintiff was complaining about the results of a surgical operation on his thumb and the court found that “[t]he said William Forest, plaintiff, when the moon was dark and in a bloody sign, namely under the very malevolent constellation Aquarius, was seriously hurt in the said muscles on the 1st day of January, and lost blood enormously, even to the 9th day of February last past, the moon remaining in the sign Gemini.”<sup>5</sup> As the court found the constellations, and not the surgeon, liable for the damage, it seems unlikely that the law was duly impeding the practice of medicine in fifteenth century England.

The position is very different today. The adverse effect of tort litigation on the provision of health services has been the subject of several recent reports from, among other countries, Australia, Canada,<sup>6</sup> England, and the United States.

In Canada, few medical negligence actions were brought against members of the medical profession before the introduction of Medicare. Where actions were brought, the courts were quite reluctant to award substantial damages, particularly in those cases where patients were seen as having received their care under one or more voluntary, charitable, or academic programs.

The introduction of Medicare in Canada and the rapidity with which the frontiers of medicine have been pushed forward in the last three decades have changed the picture completely. The attitudes of patients toward an impersonal body in the form of a paid physician or health authority are very different from those

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4. The portion of my remarks on “defensive medicine” draws heavily on John Havard’s paper, *Is the Law Impeding the Practice of Medicine?*, which was published as part of the Conference Papers, 10th Commonwealth Law Conference held in Nicosia, Cyprus (1993) (on file with author).

5. CALENDAR OF PLEA AND MEMORANDA ROLLS OF THE CITY OF LONDON 1414-1437 174-5 (A.H. Thomas ed., 1943).

6. LIABILITY AND COMPENSATION IN HEALTH CARE: A REPORT TO THE CONFERENCE OF DEPUTY MINISTERS OF HEALTH OF THE FEDERAL/PROVINCIAL/TERRITORIAL REVIEW ON LIABILITY & COMPENSATION ISSUES IN HEALTH CARE (1990). The Review committee was chaired by J. Robert S. Prichard and bore his name.

in the days in which access to treatment, notably specialist treatment, was regarded as charity. Extremely complex diagnostic and therapeutic procedures that are now being carried out require very high degrees of skill. Technology has pushed the frontiers beyond comprehension. While these procedures have brought immense benefit to patients, the opportunities for bad outcomes are far greater than used to be the case. Also, the introduction of legal aid in Canada has made litigation far more widely available.

The cost of clinically unnecessary diagnostic tests carried out for fear of litigation is enormous. It has been estimated that in Massachusetts the annual cost of "defensive" radiology exceeds by fourteen times the total damages recovered in all medical negligence actions in the state.<sup>7</sup> This *must* have an adverse effect on the provision of health services.

Similar considerations apply even more tellingly to electronic fetal monitoring (EFM) during labour. The Working Group on Obstetrics and Gynaecology set up by the Prichard Review in Canada found that one third of their obstetrician respondents were "strongly influenced in their increased use of electronic fetal monitoring and caesarean section for suspected fetal distress by litigation concerns."<sup>8</sup> The Society of Obstetricians of Canada told the Committee that it was recommending the taking of cord samples at birth for all babies, a procedure, as I understand it, that is not necessarily useful in the babies' management, simply to show that babies were not asphyxiated at the time of birth.<sup>9</sup> The Society also noted an increasing demand for technology in rural hospitals even though there was no evidence that the technology would improve the outcome for low-risk obstetric cases.<sup>10</sup>

Moreover, a survey of the attitudes of doctors involved in medical negligence cases in the United States has yielded some interesting results. In one sample, forty-two percent of the doctors involved had stopped seeing particular kinds of patients, twenty-eight percent had stopped performing certain operations, nineteen percent had experienced "loss of nerve" in deal-

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7. UNITED STATES DEPARTMENT OF HEALTH, EDUCATION & WELFARE, *MEDICAL MALPRACTICE: REPORT OF THE SECRETARY'S COMMISSION ON MEDICAL MALPRACTICE* (1973).

8. Bernard M. Dickens, *The Effects of Legal Liability on Physicians' Services*, 41 U. TORONTO L.J. 168, 185-87 (1991).

9. *Id.*

10. *Id.*

ing with clinical situations, fifteen percent felt significantly less confident, thirty-four percent were considering early retirement, and thirty-nine percent reported symptoms of major depressive disorders.<sup>11</sup> None of these randomly selected doctors had been successfully sued; therefore, it seems likely that their perceptions were the result of the impact of litigation rather than of its outcome. A further survey confirmed the findings of the first survey and revealed that many physicians had decided to discourage their children from taking up medicine as a career. Although a number of them had decided to keep more detailed case notes in the future, a significant proportion in both surveys had decided to enter less information about patients in their medical records as a result of their experience of litigation.

I could go on. I do not have or offer solutions. My purpose is simply to identify causation: ever-more rapid and prolific technological innovation and an ever-increasing awareness on the part of consumers both of technical information and their rights. Unfortunately, the outcome is poor medicine.

Lastly, we must consider ethical defensiveness—the profession’s resistance to the ever-increasing demands that it change its principles and understanding of “care” to include quality and termination of life beyond palliation. I raised a number of unsolved scenarios earlier. The Sue Rodriguez case, in the Province of British Columbia, eloquently raised the issue. Ms. Rodriguez fought for the right to assisted death. She lost her case in the Supreme Court of Canada,<sup>12</sup> though there were four dissents among the nine judges. But, the loss is a simple stage along the way. I would argue that the right to assisted death, subject to necessary protections, perhaps along the model of the Netherlands, is an inevitability. Though I fear I will lose whatever kind feeling you may still have toward my remarks at this point, I will take the risk by saying that my own view is that the very notion of what constitutes “care” must change.

There are two aspects to the issue. First, the medical profession, in my view, is stuck in the mud, failing to recognize that

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11. C. Charles et al., *Physicians’ Self-Reports of Reactions to Malpractice Litigation*, 141 AM. J. PSYCHIATRY 164 (1984).

12. *Rodriguez v. Attorney Gen. of Canada*, [1993] 3 S.C.R. 519; see also Stephen Bindman, *The Case to Legalize Assisted Suicide; Rodriguez Came Closer to Winning Than 5-4 Split Indicates*, THE GAZETTE (MONTREAL), Oct. 2, 1993, at B8; *Woman Denied “Right to Die,”* THE HERALD (GLASGOW), Oct. 1, 1993, at 10; *Canada’s High Court Denies A Right to Assisted Suicide*, THE N.Y. TIMES, Oct. 1, 1993, at A8; *Protecting Life*, THE OTTAWA CITIZEN, Oct. 1, 1993, at A10.

times and events are passing it by; the issue of territoriality is an example. The way to control change in this arena is not by opposing but becoming part of the process that regulates it. In that regulatory mode, gains can be made and old, if anachronistic, principles can be safeguarded. The opposition tactic simply will lead to the profession being overtaken.

The second aspect of the issue is, however, the more important one. One branch of science, in this case, medical science, is constantly pushing the envelope of change into yet unexplored universes. Inevitably, life is prolonged, but the quality of life is not necessarily improved or maintained. Under these circumstances, technological change must lead to a change in the mechanism used to deal with the negative outcomes of its progress. To do otherwise is to sentence the innocent to unnecessary suffering. Because those like Sue Rodriguez must fear the consequences of not dying, they may kill themselves earlier to prevent suffering. The Supreme Court of Canada will not have sanctified life, it will have caused its early end.

Exponential change, as I have argued, produces massive benefits in terms of personal autonomy and individual rights and freedom, but also massive disorientation institutionally, ethically, psychologically, and spiritually. While physicians and the medical establishment must deal with the mundane—this morning's headache, this afternoon's broken ankle—they must also deal with the much larger issues that will shape the future of both ourselves and those entrusted to be our caregivers. We, and they, must learn to cope, to be adaptive and flexible rather than rooted and unyielding. Each of us individually, and the medical profession as a collective, must find a mechanism with which to deal with the impact of change on our lives, on their patients, and on our relationships. If the effect of exponential change is left at the rational and intellectual level, we will not succeed. We must internalize it and accept it emotionally as a reality.

It is not that the future is coming, it is that it just flew by us, again, and again, and again.

Thank you.