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PHILOSOPHY IN CRISIS

The Need for Reconstruction

THE PROMETHEUS LECTURES
The consensus seems to be that philosophy is currently at a low ebb. There is even some talk of the death of philosophy. I believe this talk to be silly, for no thinking person can avoid philosophy altogether. Just think of the concepts of reality, truth, and value; or of the principles that the external world is real, that some truths are attainable, and some values objective and cross-cultural. Or think of the negations of these philosophical principles.

What is true is that academic philosophy has become rather stale. It is obsessed with its own past, suspicious of radically new insights, inward-looking, largely removed from worldly concerns, and therefore of hardly any help in tackling most of the issues faced by ordinary people. Hence the word crisis in the title of this book. So much for the bad news.

The good news is that philosophy has gone through crises before, which it has eventually overcome. For example, it entered a crisis at the start of the Christian era, at the beginning of the Modern period, and during the Counter-Enlightenment. All three crises were eventually overcome by fresh insights and hard work. In the thirteenth century, Thomas Aquinas overcame for a while the first crisis, mainly by his vindication of reason and his realist epistemology. In the sixteenth century, close contact with the reborn sciences and the newly born ones gave birth to a new, secular, and proscientific worldview. And in the nineteenth century some logicians, prompted by the explosive growth of mathe-
matics, resurrected logic and forged some of the formal tools required to perform exact philosophical analyses.

Every time philosophy seemed to hit a dead end, attempts were made to reconstruct it. Suffice it to mention Cartesianism, Spinozism, Leibnizianism, classical empiricism, Kantianism, Hegelianism, dialectical materialism, pragmatism, phenomenology, logical positivism, and linguistic philosophy. Still, good work has proceeded on the margins of schools and on many limited problems. Beautiful flowers can grow among ruins. Not forests, though.

Good philosophy is worth doing because it is a vantage point for the study of anything, whether concrete things or abstract ideas. Indeed, although it may not see the world, good philosophy helps looking at it—just as bad philosophy blocks the view of ideas and things, in denying that there are any, or in claiming that they can be understood without the help of either reason or experience.

If good philosophy is both valuable and currently in short supply, then it should be reconstructed. Which materials and tools should be used to rebuild philosophy? I suggest that the materials—the substance—are provided by science and technology, as well as by the history of philosophy; and the tools—the form—by logic and mathematics. This is, at least, the kind of philosophy I care for: one capable of tackling interesting philosophical questions in the light of the best available factual knowledge, and with the help of precision tools forged by formal science. A few examples should clarify what I have in mind.

Take for instance the venerable ontological problem of the nature of space and time. There are two main views on these intangibles: the subjectivist and the objectivist ones. Since science and technology treat space and time as real features of the world, the subjectivist view may be discarded as a philosophical extravagance. However, there are two realist conceptions of space and time. One of them states that they are self-existing (absolutist theory), and the other that they constitute the basic structure of being and becoming (relational theory). This is no idle question. Indeed, consider the so-called expansion of the universe. There could be such movement of the universe as a whole only if it were finite, and if space and time were the immutable stage where the cosmic drama is being played out. But if, on the contrary, space and time only exist as relations among things and events, then the universe, even assuming it to be finite, would have nowhere to go. In this case, we should stick to the astronomical evidence, and talk of the mutual recession of the galaxies rather than of the expansion of the universe.

Our next case is the question of the most fruitful approach to the problem
of the nature of mind. Currently, the two most fashionable approaches among philosophers are through language and computers. The respective underlying assumptions are that language is the mirror of the mind, and that the latter works like a computer, that is, only with symbols and in accordance with computational rules (algorithms). These assumptions have encouraged the fusion of three fields under the name of cognitive science: cognitive psychology of the kind that ignores the brain and its development and evolution, computer science, and linguistics. Neuroscience and evolutionary biology have been excluded from this company, on the tacit traditional assumption that the mind is immaterial, the brain being at most the tool of the self: that which "subserves" or "mediates" the mental functions. I submit that this brainless and pre-evolutionary approach to the problem of mind is wrong: it is far too close to magical thinking, theology, and idealist philosophy to merit being called scientific. Which in turn accounts for its barrenness, particularly by comparison with the spectacular recent findings of cognitive neuroscience, neurolinguistics, and neurology. A major driving hypothesis of these disciplines is that mental processes are brain processes, whence they have evolved along the brain and society. Another is that language is not a separate faculty but initially a by-product, and later on also a partner, of cognition, so that it grows in the socially embedded brain rather than in the mythical immaterial mind.

Take lastly the problem of the nature of values and moral norms. Are all value judgments subjective and therefore beyond truth and error, and are all moral norms bound to particular social groups and times? The affirmative answer is of course that of common sense, as well as that of the relativist philosophers, anthropologists, and sociologists. These students point to the well-known facts that no two societies share exactly the same value system or the same moral code, and that perceptions of what is valuable and just change in time. The obvious rejoinder is that, if this is true, then how to explain that the great majority of people, at all times, have valued life, friendship, loyalty, fairness, reciprocity, good will, knowledge, liberty, peace, and more? And why is it that, at times, some people have risked social standing, liberty, or even life, to defend, promote, or expand such values? For example, what, if not belief in certain basic universal values and norms, motivated or at least justified the American and French revolutionaries? Did they not regard those values and norms as objective and universalizable? In other words, who is right: the relativist or the universalist? Whom should we follow in this matter: the Romantics, Nietzsche, Mussolini, and the postmoderns, or else Descartes, Spinoza, the Enlightenment,
Kant, and Einstein? And how should we seek the correct answer to this question: by shouting, elbowing, and negotiating, or by debating rationally with the help of scientific findings concerning the relevance of certain values and norms to survival, coexistence, welfare, and progress? And why should we prefer either of the alternative approaches? Are there any good conceptual or practical reasons for either? These are typically philosophical questions. However, any answer to them is bound to be socially valuable or disvaluable, in addition to being intellectually satisfying or unsatisfactory.

So much for a random sample of philosophical questions that deserve being discussed in a clear manner, with the help of some formal tools, and in the light of the available scientific knowledge—rather than carelessly and in compliance with superstition. More will be found in this book. Reading it should resemble walking up a gentle ramp. Indeed, I start with a popular subject, namely the impact of the information revolution, and advance slowly up to a diagnosis and treatment of the ills of current philosophy. Along the way, the central topics of the book are displayed and discussed: philosophical materialism, skepticism, realism, scientism, systemism, humanist ethics, and their rivals. Although these may sound like heady subjects, they are actually involved in many a scientific, technological, political, and even everyday-life discussion. So much so, that most of the illustrations in the text are drawn from these fields. Which is purported to show that philosophy is not a luxury but a necessity in the modern world.

Most of the philosophical terms occurring in this book are elucidated in my Dictionary of Philosophy (Bunge 1999a). And those interested in further aspects of my philosophy are advised to look up Martin Mahner’s Scientific Realism: Selected Essays of Mario Bunge (Mahner 2001).

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It is a commonplace that we are going through a technological revolution as radical as the ones initiated by the steam engine, electric power, telecommunications, the internal-combustion engine, and the pill: namely, the information revolution. This revolution has changed not only the way information diffuses through society. It has also changed social relations and activities, in particular the very mode of production, circulation, and utilization of knowledge.

For example, whereas in the past the scholar’s alter ego was the library, and the laboratory the experimentalist’s, now every worker in the knowledge industry has an additional alter ego: his computer—a genuine Doppelgänger in the case of the laptop. And these momentous changes in work style are not confined to cultural activities: Millions of people in nearly all walks of life have now vastly enriched their social circles, their cultural resources, and their influence thanks to the computer, e-mail, and the worldwide web. All this has become commonplace and even object of worship.

We have become used to looking only at the positive aspects of this particular revolution, such as nearly instant spread of information, cuts in mindless toiling, and commercial transactions through the Internet. However, history should have taught us that every technological innovation is bound to harm some people while benefiting others. One reason is that not everyone is as nimble, well-situated, or well-heeled as to make the most of any new sophis-
cated means. Another is that the worldwide web is threatening privacy. Just think of those uncounted well-meaning people whose messages clutter our screens because they are anxious to share their priceless information and original insights with the rest of us.

The information revolution is, then, just as ambivalent as the previous technological revolutions. Such ambivalence poses no problems to the believers in the inevitability and desirability of all technological advancement. But it should pose a problem to anyone concerned about the unforeseen and sometimes perverse consequences of human actions. In particular, secular humanists should face the possible ambivalence of the current information revolution. However, before tackling this problem we should clarify the idea of secular humanism and dispel a popular misunderstanding about it.

1.1 SECULAR HUMANISM IS A WHOLE WORLDVIEW

Secular humanism is widely believed to be a purely negative doctrine that boils down to the denial of the supernatural. This is not so, as any fair sample of the humanist literature will show (see, e.g., Kurtz 1973; Storer 1980; Lamont 1982; Kurtz 1988; Bunge 1989). Indeed, secular humanism is a positive and broad worldview. It is roughly the worldview held by the members of the eighteenth-century Enlightenment, which inspired the American and French Revolutions, as well as the ensuing progressive cultural changes and social reforms.

In my opinion, the trademark of secular humanism is concern for the lot of humankind. This formula may be spelled out into the following seven theses.

1. Cosmological: Whatever exists is either natural or man-made. Put negatively: There is nothing supernatural in the real world.

2. Anthropological: The individual differences among people pale by comparison with the common features that make us all members of the same species. Put negatively: There are neither supermen nor master races.

3. Axiological: Although different human groups may care for different values, there are many basic universal values, such as well-being, honesty, loyalty, solidarity, fairness, security, peace, and knowledge, that are worth working or even fighting for. Put negatively: Radical axiological relativism is false and harmful.

4. Epistemological: It is possible and desirable to find out the truth about the world and ourselves with the sole help of experience, reason, imagination,
criticism, and action. Put negatively: Radical skepticism and epistemological relativism are false and noxious.

5. Moral: We should seek salvation in this world, the only real one, through work and thought rather than prayer or war, and we should enjoy living, as well as trying to help others live, instead of damning them.


7. Political: While defending the freedom from and to religious worship and political allegiance, we should work for the attainment or maintenance of a secular state, as well as for a fully democratic social order free from unjustified inequalities and avoidable technical bunglings.

Not all humanists assign the same value to all seven components. Typically, whereas some humanists stress the intellectual components, others emphasize the social ones. Which is just as well, for it is evidence that, far from being a sect or party, secular humanism is a broad umbrella covering social activists as well as freethinkers of various hues.

1.2 ❖ RELIGIOUS HUMANISM AND ANTISOCIAL FREETHINKING

The humanist worldview is acceptable in part to believers in the supernatural, so long as they are tolerant of nonbelievers, and are willing to do something to improve the state of the world. By contrast, an atheist or agnostic indifferent to his fellow humans hardly deserves being called a humanist, because the mark of humanism is concern for the lot of humankind. Let me give a couple of examples.

Some years ago I shared a summer course in Spain with the Jesuit philosopher Ignacio Ellacuría. He taught the spiritualist and unscientific philosophy of his fellow Basque, Xavier Zubiri, whereas I taught my own materialist and science-based philosophy. Knowing each other’s views, we hardly spoke to each other, until I learned that he was the rector of the Universidad de El Salvador, a well-known center of resistance against the savage military dictatorship that at the time ruled the Republic of El Salvador. He spoke to me with amazing and moving passion of the sufferings of the campesinos and the unselfishness and heroism of the guerrilleros. A couple of years later, Ellacuría and five of his colleagues were murdered by a death squad in the service of the dozen families that own the best land of the country and control its government. He and his fellow
martyrs were religious humanists. Who is more entitled to a place in the humanist pantheon: the priest and idealist philosopher who died for the poor and oppressed, or the materialist and scientistic professor who leads a sheltered life in a peaceful country? I hope to be at the height of the Reverend Ellacuria, so that I may be forgiven for not having risked my life fighting for human rights, and he for having taught an obscurantist philosophy.

Arthur Schopenhauer is reputed to have been the first atheist among German philosophers. However, this does not make him a secular humanist, for he was a misogynist, preached pessimism, and was utterly unconcerned with the plight of the downtrodden. Friedrich Nietzsche too was an unbeliever, but he wrote against reason and science, did not appreciate compassion, and held the “herd” in contempt. Therefore he does not belong in the Humanist pantheon either. Likewise, Sigmund Freud debunked religion, but exaggerated the force of instinct, regarded women as intellectually and morally inferior to men, and held aggressiveness to be inborn. Above all, Freud invented psychoanalysis, one of the greatest intellectual swindles, as well as commercial successes, of all times. This alone disqualifies him as a humanist. Last example: The late Ayn Rand, a popular novelist, homespun philosopher, and early neoliberal ideologue, was an outspoken if shallow atheist, rationalist, and materialist. But I submit that she was not a humanist because she preached “rational egoism” along with “savage capitalism.” Moreover, she was a fascist sympathizer about whom Mussolini had a movie made.

Secular humanism teaches not only naturalism and rationalism: it also endorses the wise slogan of the French Revolution: Liberté, égalité, fraternité (Liberty, equality, fraternity). This slogan is wise because the three values it proclaims hang together like the sides of a triangle. Indeed, liberty is only possible among equals; equality can exist only where there is freedom to defend it; and every social system, from the family to the nation, requires a modicum of solidarity. (More in chapter 9.)

In conclusion, there are two kinds of humanism: secular and religious. True, the latter is only half-humanistic, for it is centered in fictitious superhuman individuals. But both kinds of humanism share a capital principle: that of solidarity, which in turn presupposes that we are all basically equal, deserving equally to enjoy life, and equally obliged to help others. Hence, with regard to humanism, there are four kinds of people: secular and progressive, secular and regressive, religious and progressive, and religious and regressive. This is why two coalitions are always possible in social and political activities regardless of religious beliefs: the progressive and the reactionary ones.
What has the above got to do with the information revolution that is changing everyday life in the industrialized countries? Much, because the humanist, whether secular or religious, has something to say about technological innovations, since some of these are beneficial, others noxious, and still others either ambivalent or indifferent. I have just suggested a thesis that will be rejected by technophiles as well as technophobes. My thesis is that technology, unlike basic science but like ideology, is seldom morally neutral and therefore socially impartial.

Obviously, there are beneficial technologies, such as the ones used in manufacturing kitchen utensils and efficient pharmaceuticals. It is equally evident that there are evil technologies, such as those of mass murder and the manipulation of public opinion. And there are also double-edged technologies, such as those employed in the manufacture of TV sets, the organization of firms, or the design of legal codes or public policies. Indeed, TV may entertain and educate, or it may habituate us to violence, vulgarity, and passivity. Management science can enhance consumer and worker satisfaction, or it can aim at utility maximization at the cost of quality product or worker well-being. The legal craft can defend or condemn the innocent, and it can enforce or weaken an unjust law. And a piece of public policy may benefit the rich or the poor, everyone, or no one.

Because technology, unlike basic science, is rarely neutral, it is only natural that most people should be either technophiles or technophobes. However, most technophobes have no qualms about using high-tech artifacts, and some technophiles worship technologies they do not understand. An example of inconsistent technophobia is the irrationalist who writes his nonsense on a word processor. And a case of blind technophilia is that of the Saudi Bedouin whom my friend Dan A. Seni caught in the act of kneeling and bowing in front of a computer—the Westerner's newest potent and inscrutable deity.

Information technology is ambivalent, because it concerns only the processing and transmission of messages, not their content or meaning. An information net may diffuse knowledge or propaganda, poems or insults, calls to compassion or to violence. Because of this ambivalence, humanists have something to do and say about the information revolution: We have to find out what is good and what is bad about the information revolution, as well as what is true and what is false about the strident info-hype.
1.4 INFORMATION AND KNOWLEDGE

The enormous role that information plays in industrial societies has given rise to the myth that the universe is made of bits rather than matter. The well-known physicist John Archibald Wheeler has compressed this myth into the formula “It’s from bits.” An instant’s reflection suffices to puncture this idealist extravagance. In fact, an information system, such as the Internet, is constituted by human beings (or else automata) who operate artifacts such as coders, signals, transmitters, receivers, and decoders. These are all material things or processes in them. Not even signals are stuff-free: in fact, every signal rides on some material process, such as a radio wave.

In other words, it is not true that the world is immaterial or in the process of dematerialization—or, as some popular authors put it, that bits are replacing atoms. We eat and drink and breathe atoms, not bits. And when we get sick we call a physician, not an information expert. What is true is that e-mail is replacing snail-mail. But the electromagnetic signal that propagates along a net is just as material as the letter and the mailman who carries it. The information revolution is a huge technological innovation with an ever stronger social impact, but it does not require any basic changes in worldview: Today’s world is just as material and changeable as yesterday’s. The main difference with yesterday’s is that it is more closely knit—more of a system.

We may laugh at the superstitious Bedouin of my friend Dan’s story, while forgetting that similar characters are at the helm of many a powerful modern organization. What else is the politician or civil servant who proposes to swamp schools with computers, in preference to recycling teachers and motivating students, upgrading labs and workshops, restocking libraries, updating curricula—and perhaps serving breakfast as well? What if not a superstitious Bedouin is the science administrator who prioritizes the research projects involving intensive use of computers regardless of the importance and originality of the research problems?

All these modern Bedouins equate information with knowledge, and research with information retrieval or its diffusion. But information or message is not the same as knowledge. Martin Heidegger’s sentences “The world worlds,” “Language speaks,” and “Time is the ripening of temporality,” convey no knowledge at all: they are empty strings of symbols. And original research does not consist in retrieving or even processing information, but in formulating new problems and trying to solve them. In particular, the information revolution is
the child of a number of findings of basic or disinterested research projects, from pure mathematics to quantum theory, which is the basis of solid-state physics.

Computers are certainly helping find and spread new knowledge, but they cannot replace live, well-educated, curious, disciplined, and strongly motivated brains. This is so only because computers are designed and built by people to help answer questions, not to find, invent, or evaluate problems. And problems happen to be the fountains of research. Moreover, a computer program can only tackle well-posed problems with the help of some algorithm or instruction. It is helpless in the face of an ill-posed problem, or of a well-posed problem for which no algorithm is known (or for which it is known that no algorithm is possible). In particular, computers are helpless in the face of inverse problems, such as guessing the intentions of a person from her behavior, because such problems have at best multiple solutions—as many as the number of educated guesses the observer can come up with. (More on inverse problems in chapter 5.) Nor can there be algorithms for designing new algorithms, or even for repairing unexpected bugs. So much so, that no computer has detected, let alone debugged, the so-called Millennium Bug, that is, the inability of millions of computer clocks to recognize the year 2000.

In general, there are no rules for inventing new ideas, in particular new rules. (If there were, we would be spared hundreds of papers promising that the computers of the next generation will be creative.) Only a living brain, and a well-appointed one at that, can invent radically new ideas, in particular problems, analogies, high-level principles, and algorithms. Computers can just combine or unpack known ideas, only provided they are supplied with the suitable rules of combination or inference. Moreover, computers cannot understand the symbols they process if these happen to refer to items in their surrounding, because the latter contains only a power outlet, a typist, and perhaps other computers. Any reference to atoms or stars, the weather or politics, friends or business, is wasted on a computer.

Furthermore, computers work to rule in all the senses of the word. They are neither curious nor doubtful, neither imaginative nor adventurous; they neither cut corners nor understand incomplete sentences, let alone metaphors; and they can neither craft projects nor evaluate empirical findings or plans. For a word processor, the proverbial sentences "Dog bites man" and "Man bites dog" have the same value (quantity of information), since they have the same number of bits. Likewise, a computer is incapable of ranking research projects. Consequently, it may lend its alleged authority to any wrong-headed project—such as
that of creating “artificial life” in the guise of computer programs that mimic selected aspects of living processes.

We all would like to know more and, at the same time, to receive less information. In fact, the problem of a worker in today’s knowledge industry is not the scarcity of information but its excess. The same holds for professionals: just think of a physician or an executive, constantly bombarded by information that is at best irrelevant. In order to learn anything we need time. And to make time we must use information filters allowing us to ignore most of the information aimed at us. We must ignore much to learn a little. And to craft such filters we need a naturalistic, comprehensive, deep, and up-to-date worldview. Secular humanism should help here, if only because of its skepticism concerning the supernatural and the paranormal.

In sum, the new information artifacts facilitate the processing and communication of knowledge but do not produce it. In particular, computers neither explore the external world—except occasionally by proxy—nor invent theories capable of explaining or predicting any facts. Hence, they replace neither the explorer nor the inventor, or even the doubter. Nor do they replace the competent and dedicated teacher capable of stimulating curiosity and transmitting enthusiasm for learning. A good teacher can help shape an inquisitive and creative brain. By contrast, the most an electronic device can do is to supply some valuable information and carry out some routine tasks. A powerful algorithm can help solve problems of a particular kind far quicker than a legion of living brains, but it is not a multipurpose organ like a normal brain. It is neither insightful nor creative, or even critical: it must accept obediently almost anything it is fed. It is unable to improvise in the face of unforeseen situations. Last, but not least, no electronic device is capable of autonomous moral judgment. And this point is of particular interest to humanists, whether secular or religious.

1.5 ❖ THE INFORMATION HIGHWAY

The Internet is daily making more converts than any political parties and churches, including Islam. The fervor of some of its users is such, that there is already talk of info addiction (or web alcoholism), on a par with drug addiction. Kimberley Young, a researcher with the University of Pittsburgh, examined Internet addicts. She found that they spend as many hours sitting in front of the screen at home as at work, and that they tend to isolate themselves from their
relatives and friends. Besides, when deprived of access to the Net, they exhibit a withdrawal syndrome similar to that experienced by drug addicts.

Fortunately, info addicts are and will always constitute a small minority, and this for two reasons: restricted usefulness and excessive cost. The former is that the vast majority of the tasks we accomplish in daily life do not require the use of computers: think of learning to walk and respect other people, showering and getting dressed, cooking a meal and hammering a nail, greeting a neighbor and imagining a scene, playing ball and attending a party, planning an outing and discussing the day's news, daydreaming and listening to music. The second reason that the Internet is and will remain an elite tool is that access to it involves an expenditure greater than the yearly income of most people in the Third World—where four out of five people happen to live. In particular, the Internet does not reach the shantytowns, which are inhabited by more than a billion people.

However, undoubtedly the lives of an increasing number of people in the First World revolve around the information network. Some of them do not feel alive unless they send at least ten e-mails a day and do not spend some hours surfing the Net or retransmitting trivial information. How to explain this new fad? There are several motives. First, the Net procures a huge quantity of information at a low price: it is the most universal and cheapest of encyclopedias. Second, using the Net confers prestige, it is chic and a sign of youthfulness: those off-line are rustics or fossils. Third, using the Net is more comfortable than visiting museums; attending concerts, plays, or lectures; browsing in libraries, traveling, or teaching one's children. Fourth, anyone can produce his own home page to exhibit his wisdom or sense of humor, or else to relieve himself or bore others with impunity. Fifth, networking allows anyone to make many acquaintances overnight and without commitment. Sixth, the Net is a refuge from job problems and domestic worries.

This is why compulsive networking, like obsessive TV watching, can function as an electronic surrogate of religious worship. "Our Net in Cyberspace, hallowed be thy name. Your kingdom come. Thy will be done on earth as it is in Cyberspace. Give us this day our daily bits."

The info zealots assure us that the info highway is leading to a more equal, cohesive, democratic, and better-educated society. Is it? In fact, only minimally. To begin with, the e-network draws no difference between genuine and counterfeit knowledge. Information technology deals exclusively with information, regardless of content, relevance, value, truth, and fairness. This is why there are such things as info overload and info crime, from swindle to organized pedophilia.
Anyone can publish anything they like on their home page. There are no gatekeepers here because there are no standards, and because the decision to publish is left to the user, without consultation with peers. Consequently, intellectual anarchy in the Net is total: Anything goes, fact or fancy, meaningful message or gobbledygook, system or stray item, jewel or junk. Cyberspace is the cultural relativist's paradise. By the same token, it has become an obstacle to serious education, since many students prefer accessing the dubious popularization items easily found on the Web, to painstaking search in the library. Because of such utter freedom of expression, the Internet will never displace carefully refereed academic journals and books. Supplement, yes: substitute, no.

Nor is screen watching as inspiring as good old reading printed stuff. Even a high priest of the newest cult admits that “[i]nteractive multimedia leaves [sic] very little to the imagination. . . . By contrast, the written word sparks images and evokes metaphors that get much of their meaning from the reader’s imagination and experiences” (Negroponte 1996, 8).

In short, the information highway leads to no definite place. Traveling along it one may learn almost anything except manual skills, judgment, and good habits; one may communicate with other members of the elite; and, above all, one may escape for a while the petty miseries of everyday life—by dint of unloading them unto others. But for the great majority of people it does not meet any basic needs, for most of us do not work in the knowledge industry. Moreover, the global net will always remain inaccessible to those most in need of it: the shipwrecks of society, that is, the people without relatives, friends, or connections, particularly the jobless and the homeless—or simply the illiterate. And these happen to constitute 21 percent of the American adult population, and 22 percent of its British counterpart. The downtrodden could use the Internet to look for employment or friendship, or at least to relieve boredom. But they cannot read, let alone type, and in any case they could not afford it.

1.6 ❖ TOWARD THE VIRTUAL SOCIETY?

A new utopia was born in the 1980s: that of the electronic or virtual society, cybersociety, or network society (see, e.g., Castells 1996). This was to be a society in which face-to-face human relations would be replaced with screen-to-screen communication. We would all move from physical space to cyberspace. Nature, space, and time would be superseded. People would stop meeting in
offices, corridors, markets, cafés, clubs, town halls, or even homes. Offices would work without paper. Classrooms, laboratories, and workshops would become computer rooms. Libraries would be dismantled. Sports would be displaced by computer games. Cities would be razed. Money would disappear, and the Internet would become the global shopping mall. Maybe even family relations would pass through the screen. For example, spouses would communicate with one another only through computers, and virtual love would displace carnal love. Is any of this consistent with what we know about the human need for natural resources, physical contact, and face-to-face dialogue?

It was also prophesied that the generalized use of computers will abolish poverty, and that the Internet will perfect democracy—again, because only information would count, and information is now universally available. Is it really? Let us see. Undoubtedly, the information revolution is expanding cultural democracy, that is, popular access to cultural goods—as well as to cultural junk. However, the people with access to the Internet are and will always be a minority because information, even when worthless, is far from free. Indeed, access to it calls for money and a medicum of education. Consequently, in the end, the Internet introduces one more social chasm: that between those who are on-line and those, the overwhelming majority, who remain off-line. Thus the polarization between the plugged and the unplugged adds to the earlier polarizations—those between haves and have-nots, white and dark, believers and infidels, etc. Thus, the information revolution further disempowers rather than empowers the underdog. Hence, it is false that the information revolution is enhancing economic and political democracy (see Menzies 1995; Hurwitz 1999).

The idea underlying the cybersociety utopia is that communication is the only, or at least the main, social bond. This myth was born in the 1960s. For example, the late Karl Deutsch (1966), a distinguished Harvard professor of social science, defined a people as a body of individuals able to communicate with one another over long distances and about a variety of subjects. Likewise, the late German sociologist Niklas Luhmann (1984), who strongly influenced Jürgen Habermas’s “theory of communicative action,” held that social systems consist of communications and nothing but communications. But if this were true then all the mail, telephone, and e-mail users would constitute a people. For better or for worse, a people is united by a variety of bonds: telecommunication is only one of them. Networking is no substitute for child rearing, nursing, playing, farming, construction, manufacturing, transportation, policing, investigating, or face-to-face socializing. It only alters the way these and others activities are carried out.
Clifford Stoll, an astronomer, the inventor of a predecessor of the Internet, and a frequent user of this medium, is anything but a technophobe. However, in his *Silicon Oil Snake* (1995, 58) he warns against the new fad. He holds that computer networks are double-edged tools. While they facilitate access to mountains of useful information, they also "isolate us from one another and cheapen the meaning of actual experience. They work against literacy and creativity. They undercut our schools and libraries."

The scientific community is the one exception to this rule. Indeed, the Internet has enormously facilitated the daily work of the researchers in every science, in strengthening their cooperation. This has been possible because the disinterested search for truth, unlike that of economic or political power, is ruled by a unique ethos (Merton 1968). This ethos includes the free sharing of information, and the right and duty to practice constructive criticism. Basic scientists are committed to truth as well as to both epistemic communism and organized skepticism. Alas, this moral code does not work in the market—nor, indeed, in any community other than that of basic scientists. So, the ideal cybersociety is inhabited only by scientists. However, all of them continue to meet face-to-face in the traditional venues, from offices and labs to seminars and congresses.

In short, the virtual or electronic society is just as impossible as the novelist Italo Calvino's imaginary cities. True, the e-market is doing astonishingly well, and it is likely to continue to increase its market share. But society is much more than the market, because the exchange of goods and services is only one of the many social relations. Besides, whereas the market is not a self-regulating system, democracy is. The most that the cyberfundamentalists can hope to accomplish by way of social transformation is to divert public attention from tragic social issues—as when a once-powerful American politician proposed giving out laptops to the homeless, so they could start their own businesses from their favorite sidewalks.

**CONCLUSION**

Every biological and social advance seems to exact a price. For example, we pay for bipedalism with back pain; for big brains, with high energy consumption; for visual acuity, with optical illusions; for decrease in manual labor and walking, with obesity; for sensitivity to social conflict, with stress; for knowledge, with its misuse; for greater individual freedom, with less solidarity; for democracy, with