This Scientific World

Jonathan Miller once remarked that one of the reasons that people are afraid of hospitals is that when they put on hospital garb and occupy a hospital bed, they sense that their bodies are no longer their own, but now belong to the doctors.

But that is not only true of hospitals. It also happens as a result of the doctor's advice features on radio and TV, the millions of books published on everything from dieting to sex to the raising of children, the up-to-the-minute news coverage of every breakthrough and possible breakthrough in the treatment of heart disease, cancer, AIDS, diabetes, Parkinson's disease, Alzheimer's disease, muscular dystrophy, multiple sclerosis, not to mention countless psychoses and neuroses.

If we have been raised in a so-called "educated" family, we know already in childhood without being aware of it that our bodies and minds are in the hands of experts of one sort or another. We don't know what it means, "to own one's own mind and body" — to *own one's own experience*. We only hope that these experts will figure out how to cure the countless things that can go wrong before it's too late.

Most of the natural world as well belongs to experts. What educated person can see the heavens as other than a source of Nobel Prizes and technological accomplishments? "It's only a matter of time before we'll ..."

An educated man whose speciality is, let us say, computer science, takes a walk in the woods. But he feels he has no business being there — he doesn't know the names, scientific or otherwise, of the trees and plants, doesn't know geology. He knows that walks in the woods were meant for naturalists, and after them, backpacking experts, who, if they don't know the local biology and geology, at least they know all about equipment (Nature is a place to use equipment). Nature is not his specialty; where could he possibly find the time to learn, on top of everything else he is supposed to know, the biology and geology of the places where he (rarely) goes for a walk in the woods? Who wants to observe himself floundering in his own ignorance?

In childhood he knew nothing about "a relationship with Nature". He loved to climb trees; the woods were a place to play Cowboys and Indians, and War; the reservoir near his house was a place to go fishing and to illegally launch a raft or boat he had nailed together. The woods were a place to live the lives of the mountain men — Kit Carson, Jim Bridger — he had read about. Even though the woods and the lake were owned by the Water Supply District, the way to play in them, imagine them, think about them, nobody owned or cared about.

"...we stand before a tree in bloom, for example — and the tree stands before us. The tree faces us. The tree and we meet one another, as the tree stands there and we stand face to face with it. As we are in this relation of one to the other and before the other, the tree and we *are*. This face-to-face meeting is not, then, one of these 'ideas' buzzing about in our heads. Let us stop here for a moment, as we would catch our breath before and after a leap. For that is what we *are* now, men who have leapt, out of the familiar realm of science and even, as we shall see, out of the realm of philosophy..." — Heidegger, Martin, *What Is Called Thinking?*, Harper & Row, Publishers, Inc., N.Y., 1968, p. 41.

"...For we shall forfeit everything before we know it, once the sciences of physics, physiology, and psychology, not to forget scientific philosophy, display the panoply of their documents and proofs, to explain to us that what we see and accept is properly not a tree but in reality a void, thinly sprinkled with electric charges here and there that race hither and yon at enormous speeds.

It will not do to admit, just for the scientifically unguarded moments, so to speak, that, naturally, we are standing face to face with a tree in bloom, only to affirm the very next moment as equally obvious that this view, naturally, typifies only the naive, because pre-scientific, comprehension of things. For with that affirmation we have conceded something whose consequences we have hardly considered, and that is: that those sciences do in fact decide what of the tree in bloom may or may not be considered valid reality. Whence do the sciences — which necessarily are always in the dark about the origin of their own nature — derive the authority to pronounce such verdicts? Whence do the sciences derive the right to decide what man's place is, and to offer themselves as the standard that justifies such decisions? And they will do so just as soon as we tolerate, if only by our silence, that our standing face-to-face with the tree is no more than a prescientifcally intended relation to something we still happen to call 'tree'. In truth, we are today rather inclined to favor a supposedly superior physical and physiological knowledge, and to drop the blooming tree." — ibid., p. 43.

"Some readers may remember A. S. Eddington's 'two writing desks'; one is the familiar old piece of furniture at which he is seated, resting his arms on it, the other is the scientific physical body which not only lacks all and every sensual qualities but in addition is riddled with holes; by far the greatest part of it is empty space, just nothingness, interspersed with innumerable tiny specks of something, the electrons and the nuclei whirling around, but always separated by distances at least 100,000 times their own size. After having contrasted the two in his wonderfully plastic style he summarizes thus:

'In the world of physics we watch a shadowgraph performance of familiar life. The shadow of my elbow rests on the shadow table as the shadow ink flows over the shadow paper...The frank realization that physical science is concerned with a world of shadows is one of the most significant of recent advances.' — *The Nature of the Physical World* (Cambridge University Press, 1928), Introduction'" — Schrödinger, Erwin, *What Is Life? & Mind and Matter*, Cambridge University Press, Cambridge, England, 1944, 1958, 1989, p. 130.

"Color shines and wants only to shine. When we analyze it in rational terms by measuring its wavelengths, it is gone. It shows itself only when it remains undisclosed and unexplained. Earth thus shatters every attempt to penetrate into it. It causes every merely calculating importunity upon it to turn into a destruction. This destruction may herald itself under the appearance of mastery and of progress in the form of the technical-scientific objectivation of nature, but this mastery nevertheless remains an impotence of will. The earth appears openly cleared as itself only when it is perceived and preserved as that which is by nature undisclosable, that which shrinks from every disclosure and constantly keeps itself closed up." — Heidegger, Martin, "The Origin of the Work of Art", in *Poetry, Language, Thought*, Harper and Row, N.Y., 1975, p. 47.

"Don't let us imagine we see the sun as the old civilizations saw it. All we see is a scientific little luminary, dwindled to a ball of blazing gas. In the centuries before Ezekiel and John, the sun was still a magnificent reality, men drew forth from him strength and splendour, and gave him back homage and lustre and thanks. But in us, the connection is broken, the responsive centres are dead. Our sun is a quite different thing from the cosmic sun of the ancients, so much more

trivial. We may see what we call the sun, but we have lost Helios for ever, and the great orb of the Chaldeans still more. We have lost the cosmos, by coming out of responsive connection with it, and this is our chief tragedy. What is our petty little love of nature — Nature!! — compared to the ancient magnificent living with the cosmos, and being honoured by the cosmos!" — Lawrence, D. H., *Apocalypse*, Penguin Books, N.Y., 1979, p. 27 (first published 1931).

"Science begins with problems, and ends with problems." — Popper, Karl, *Unended Quest*, Open Court, London, England, 1982, p. 130.

"Uncertainty, disillusion, and despair are prices to be paid for living in an age of science." — Thomas, Lewis, *Late Night Thoughts on Listening to Mahler's Ninth Symphony*, Bantam Books, N.Y., 1984, p. 27.

The question is, who pays that price? Scientists live in a world of intellectual challenges, with clear rewards for meeting them. The rest of us live in a world of scientific objects and ideas which must somehow be *dealt with*; we are receivers of science, we must react to it. The scientist belongs to a community of like-minded individuals; if he is being paid to do science, then at least a few people believe he is doing something worthwhile. He is *advancing knowledge*; everywhere he turns, the value of his way of life is proclaimed. There are prizes, university positions, and high-paying positions in some industries awaiting him if he shows the slightest sign of unusual ability. No wonder he can't understand what is going on in the arts and humanities in this century! (*"Why are you people so miserable?*") His challenge is to use as much of his intelligence as he can, whereas, for most of the rest of us, our challenge, at least on the job, is to use as *little* of our intelligence as we can. "Next to want, boredom has become the worst scourge in our lives." — Schroedinger, Erwin, *What Is Life* & *Mind and Matter*, Cambridge University Press, Cambridge, England, 1944, 1958, 1989, p. 125.

In fact, one of the many self-serving myths perpetuated by the educational and industrial establishment is that a technologically-advanced society needs highly educated workers. What such a society needs, in fact, is a few very creative individuals and very many intelligent drones — "trainables" — i.e., engineers, technicians, programmers, and supporting staff and management. Such individuals have no need for nor interest in any education which does not obviously consist of subjects they will be able to apply immediately, a fact which excludes not only all of the humanities, including the history of their own fields and the history of science and mathematics, but also pure mathematics. Since most practical subjects soon become obsolete, the one trait these individuals must have is the ability to be rapidly re-trained.

"First comes community; all else follows." Scientists scratch their heads in wonder over the indifference of the average person to the importance of scientific thinking, e.g., in considering forms of diet or treatment of potentially fatal diseases or in considering the nature of the universe or systems that claim to predict the future, e.g., astrology. But the confidence, the *ease*, with which many scientists proclaim the superiority of science over the religions of the past and over the various New Age philosophies and mysticisms of the present is in large part due to the fact that scientists are members of a secure and highly-prestigious community. Those who have experienced the hopelessness and lostness and terror of this age, have a hard time controlling their tempers when a charismatic Nobel Prize winning physicist preens himself on his ability to dismiss the gropings of the unscientific many toward a meaningful life.

The Dying Scientist: "This too is a natural process!"

When we are young and idealistic, we can't conceive of anything better than a world in which currently accepted truths are always being re-examined and questioned. But when the truth about every aspect of our daily lives changes every day, life becomes a nightmare. The X-rays they tried to cure your acne with yesterday will send you to an early grave today.

We have all become workers in the Ministry of Truth.

Scientists: Nature's bureaucrats.

The author of the "Letter to a Young Intellectual..." in this book is fictitious, but he is based on people I have met in industry. One of them, with a copy of Dostoevsky's *Notes from the Underground* in hand, often spoke along the following lines:

"I keep asking myself, 'Why did I turn my back on the university?' Why did I settle for a lifetime of working on this industrial trash, doing the bidding of third-rate minds, just for the chance to study what I wanted in the way I wanted, when at age 21 I had an academic career in the palm of my hand? At that age I already knew how to talk in that rapid, articulate way which so impresses college professors (even if I was, in fact, usually covering my temporary ignorance or slowness); I knew how to create obscurities to distract the opposition; knew how to be obsequious to my betters and contemptuous of my inferiors. I knew what the bargain was: 'Do the type of work we deem important, learn to write in the style we require, publish more than the minimum we have established, and you can have a house in Berkeley, a gracious, loving wife (at least for a few years), an annual supply of graduate students, including eager young female graduate students, a waiting publisher for almost anything you write, and more prestige than any man needs.' Why did I turn my back on all that? The Underground Man spelled out the reason over a hundred years ago. Listen:

'What is one to do with the millions of facts that bear witness that man "knowingly", that is, fully understanding his own interests, has left them in the background and rushed along a different path to take a risk, to try his luck, without being in any way compelled to do it by anyone or anything, but just as though he deliberately refused to follow the appointed path, and obstinately, wilfully, opened up a new, a difficult, and an utterly preposterous path, groping for it almost in the dark. Well, what does it mean but that to man this obstinacy and wilfullness is pleasanter than any advantage... Dostoevsky, Fyodor, "Notes from the Underground", in *Great Short Works of Dostoevsky*, Harper & Row, N.Y., 1968, p. 279.

'...because man has always and everywhere — whoever he may be — preferred to do as he chose, and not in the least as his reason or advantage dictated...' ibid., p. 283.

'It is just his fantastic dreams, his most patent absurdities, that he will desire above all else for the sole purpose of proving to himself (as though that were so necessary) that men are still men and not keys of a piano...'" ibid., p. 288.

"[The] speedup of image processing inside us means that images grow more and more temporary. Throwaway art, one-shot sitcoms, Polaroid snapshots, Xerox copies, and disposable graph-

ics pop up and vanish. Ideas, beliefs, and attitudes skyrocket into consciousness, are challenged, defied, and suddenly fade into nowhere-ness. Scientific and psychological theories are overthrown and superseded daily. Ideologies crack. Celebrities pirouette fleetingly across our awareness. Contradictory politcal and moral slogans assail us." — Toffler, Alvin, *The Third Wave*, Bantam Books, 1980, p. 158.