The New Atlantis
A Journal of Technology & Society

Science and Non-Science in Liberal Education

Harvey C. Mansfield

Allan Bloom in his famous book *The Closing of the American Mind* (1987), drawing on Max Weber, calls the "fundamental issue" of our time "the relation between reason, or science, and the human good." I would say that in the university today the most obvious issue, reflecting directly the fundamental issue, is the relation between science and non-science. Let's start from non-science as the residue of what is not science. Personally, I am not a scientist; I am a non-scientist; but what is that positively? This is the main question in today's university, and the main question for liberal education: What is non-science? We see in the universities, among both faculties and students, that, in answering that question, science is confident and non-science is confused. That is the first impression, which I will try to make muddy by showing that science is not so confident and non-science not so confused. But let the confident party speak first.

The confidence of scientists arises from their knowing what they are doing and from their ability to say what science is. Science is progressive and exact. It is progressive in that it is always being revised, with new findings replacing what was once held to be knowledge. To be sure, what is held to be knowledge now will change, perhaps very soon. Is physics about atoms? No, today it is about the distance between atoms. Strict science is today's science; there is no reason for scientists to study the past of their discipline, the history of science. That field is part of non-science, the history department, not of science. If Galileo were to return today, he would accept our science as improved, as more exact. "Exact" means "leaves no room for doubt." What is most exact? Mathematics; so science today is mathematical. Galileo began modern mathematical science, but science is not sentimental about its founders; like everyone else at his time he got some things wrong, only less wrong than the others of his day.

Social science and the humanities vie for the territory of non-science, the former imitating science and always failing, the latter not imitating

Harvey C. Mansfield *is the William R. Kenan, Jr. Professor of Government at Harvard University, a senior fellow at the Hoover Institution, and the author, most recently, of* Tocqueville: A Very Short Introduction *(Oxford, 2011).*

and not knowing quite why. Both are excluded from science, the humanities officially and social science by the unofficial rejection of true scientists. They are not exact, not progressive. In the words of the once-famous Harvard "Red Book": "Goethe does not render Sophocles obsolete, nor does Descartes supersede Plato." Today there just might be agreement that these four authors are worth studying, but why? Because they differ, and the differences are still worth studying. That means that in the humanities, scholars accept unresolved doubts, whereas mathematical scientists strive to resolve all doubt. Non-science is not progressive; we cannot throw away old ideas. *The Federalist* and Tocqueville's *Democracy in America* are still the best books on American politics, though of course in need of intelligent updating.

Science students do well in non-science courses, but non-science students have difficulty in science courses. Slaves of exactness find it easier to adjust to the inexact, though they may be disdainful of it, than do those who think in the realm of the inexact when confronted with the exact. Non-science students usually need less demanding courses in which to satisfy their science requirements; science students in non-science, however, suffer mainly from their sense of superiority. Are science students smarter? Maybe so, but at least they are good at mathematics, which is the big difference between science and non-science. Social science tries to be progressive and exact but fails in both; it cannot predict: witness the spectacular failure of economics to predict the financial crisis of 2008.

Science is confident because it believes that science is good and that progress in science leads to progress in society. Absorbed in their specialties, few scientists think about science as a whole. To do so, one might have to question whether science is surely good for society. Peter Thiel, the canny investor, believes that scientific progress is essential for social progress but worries that science now is not progressing as it should. It is strong in regard to computers but weak in energy. This judgment is made from society's point of view, but is it that of science? Does science as science care about society? Perhaps it does and should: science might seem to set a model for democratic society, as John Dewey argued. Scientists are a community of equals, desiring truth and human progress, with an ethic forbidding vanity and prejudice, excluding intrusion from the outside, demanding the most complete transparency, and deciding by the force of the better argument.

Yet it is striking that science cannot prove scientifically that science is good for human beings. In practice, scientists assume that science is good but they will admit that no proof can be stated in strictly scientific terms.

In social-science methodology, the embarrassed admission turns into a stern insistence on the so-called fact-value distinction—which says that facts can be proved scientifically but not values. But what of the fruits of science, the benefits Francis Bacon promised at the beginning of modern science? Are these not surely good? Among Bacon's promises were new engines of war. I once met an Asian woman, whose specific nationality I was too clumsy to perceive. I asked her and she drew herself up, replying "I am Japanese." "Um, where in Japan?" I blundered on. "I probably won't know if it isn't Tokyo." She said: "Oh, you'll know. I was born in Nagasaki." A long pause ensued; I was caught between not wanting to apologize and not wanting to justify.

The Manhattan Project was top secret because there was a critical advantage for the country that first built the bomb. Secrecy, however, is a violation of the code of science: science is universal and demands replicable results shared with all. Even some of the Manhattan Project scientists working on this project of the utmost national urgency, were, as scientists, made uneasy by the restrictions placed upon them to preserve secrecy. Nuclear proliferation today may be bad for the United States, and for the world, but it is good for science, as more might be learned. More would be learned if more bombs went off; in fact, just recently, neuroscientists used evidence from radioactive isotopes released by nuclear testing to study a contentious theory about brain development.

Well, war may be bad, but what about modern medicine? Isn't this surely good? Thanks to the fruits of science in medicine, people live longer and in better health. But sometimes they live longer in not such good health, so that death still often comes as a relief. Other dangers lurking in the dark future have been pointed out by novelists, like Aldous Huxley in *Brave New World* and Kazuo Ishiguro in *Never Let Me Go*, exercising their imaginations to see beyond present-day science. Non-scientists, employing their non-scientific imagination to write fiction, can see where science is going much more clearly than scientists can. Science on its own cares nothing for its past or its future, only its present. In sum, there is no proof in speech that science is good, and no proof either in the evidence of deeds. Science has brought wonders never before seen, but these wonders include the means of destroying our entire species.

Does this matter? Obviously it does to us; we are human beings. But why does our extinction really matter? Other species die and evolution goes on. Why should human beings be special? Human beings are the only beings capable of science, we can say. Hence we matter more than all other species; we matter more to *science*. Science is always looking for

other planets, for possible life, for possible beings capable of science as we are. There ought to be more of them among all the billions of stars and planets, but for some reason they have not appeared. This is known as Fermi's paradox after Enrico Fermi, the physicist who remarked that out of the infinite billions of possibilities for intelligent life, some should have materialized, so, as he is famously said to have asked, "Where is everybody?"

It is necessary to science to show that the Earth is not an exception to the rest of the universe; it's just that it is rare. Exceptional importance would suggest a hierarchy in nature, perhaps even the gift of God's creation—a special importance to which science is constitutionally opposed, in which it refuses to believe. Darwin's theory of evolution is particularly averse to any idea of a special status for human beings, denying as it does the notion that the origin of the human species was an act of "special creation." Human beings evolve out of "lower" life. But why call it lower? Better to say "less complex." Science cannot answer questions of hierarchy or value; it levels the subject matter of science so that science does not play favorites in its study of nature. It is as much science to study the anus of a gnat as to study man.

Isn't this situation strange, and doesn't it reflect confusion? All scientists believe that science is good; that is the source of their confidence in the university today. But none can prove it. Isn't science important, and worthy of study? Science has to presuppose its own importance while undermining its own importance. It leaves questions of importance to non-science, to the humanities and social science, and especially to the former. The humanities show that man is something special, something important. The big questions of human life belong to non-science: What is the good life? What is God? For whom should I vote?

Literature addresses these questions by dealing with individuals. Human individuals have names by which they are distinguished and are given credit or blame. Human beings call attention to themselves with their names; they are proper nouns that confer and denote individuality. There is no importance for human beings unless they are important as individuals; they are a species of individuals aware of and insistent upon their individuality. They like it when you get their names right and correct you when you don't. In this science and literature are opposed, but not wholly opposed. Science seeks universals and is unsatisfied with conclusions about individuals; the buildings at M.I.T. have numbers, not names. Literature also seeks universals, but does so by drawing attention to individuals. The novel *Tom Sawyer* shows the American boy as a generality, or the human

boy as a universal. Both science and literature strive for understanding of universals. But it is only non-science that addresses the big questions.

One of these big questions is why science is important. For this, science has to depend on non-science, on something outside science. It depends on a non-scientific evaluation of the fruits of science, which include providing for man a longer, healthier life, or, as the social scientists say, a "higher standard of living." But why these are necessarily improvements science cannot say without relying on non-science.

Resistance to Science

The idea of the pre-scientific, which has been central to all important recent philosophy, we owe to Friedrich Nietzsche. For Nietzsche, science is a part of modernity, not the cause of it but the consequence. Francis Bacon proclaimed that science would bring relief to man's estate. Why "relief"? Because human beings suffer in their estate. Christ, being a man, suffered but with his suffering promised redemption from suffering; Bacon offered science as an alternative solution. In reaction to Bacon and his successors, Nietzsche asked whether the relief from suffering afforded by science was really good for human beings. Doesn't relief from suffering make us soft and insecure, all the more fearful of disease and death? The objection is aimed precisely at modern medicine, the prize science of the early philosophers of science, the one that brings the most good to the most people. Nietzsche objects that suffering is necessary to greatness. Without suffering there will be no striving, no accomplishments, no ambition.

For Nietzsche, science is an ambitious attempt to lower human ambition; it reflects human dignity even as it attacks human dignity. Science is a form of self-cruelty in which, by courtesy of Darwin, man makes a monkey of himself. It seems to be neutral, as for example in that modern medicine makes you better off no matter who you are. But in fact science is not neutral; it neutralizes. It makes you more concerned with your health, as if health were the highest value. René Descartes, one of the founding fathers of modern science, said that the conservation of health is "without doubt the primary good and the foundation of all other goods of this life." The philosopher of doubt was sure of this. Science has an implicit argument that science is important; it is a grand project for making human life more reasonable, less customary, less concerned with ambition and greatness; in sum, science seems more democratic. It undermines all traditional elites, but quietly, implicitly, replaces them with a scientific elite hostile to all elitism except its own. Science democratizes everything but its own despotic self.

Let us not be indignant. Plato too envisioned a scientific elite of philosopher-kings. But he seems to have thought it impossible, or at least very difficult, because of the resistance to the demands of philosophy by ordinary human beings, who are, as a rule, non-philosophers. Similarly there can be, and is, resistance to science from non-science. But on what basis? Here we can consider whether there is positive knowledge behind non-science, knowledge especially of human nature, which would raise non-science from the status of a residue of irrationality and negativity to the status of a kind of knowledge that scientists do not have. This knowledge would bring greater clarity to non-science, rescue it from at least some of its confusion, and give it a certain respectability to match, or counter, the preeminence of science in today's university.

This knowledge could begin from the resistance to science that scientists often notice. A prominent physicist, Michio Kaku, commented in a recent *Wall Street Journal* interview on an unexpected consequence of the invention of computers. Computers were supposed to replace writing on paper and bring about the paperless office. But in fact, more paper is used now than before there were computers, as it is now easier to print out copies. People want a hard copy, said Professor Kaku, something they can touch and take hold of. Ordinary people are reactionaries, a fact he explained by "the Caveman principle": "Our personalities haven't changed for 100,000 years since modern humans emerged from Africa," he said. Cavemen like to touch things, and they are well known for manhandling women.

Readers of Allan Bloom will know that Professor Kaku's accusation was anticipated by Jonathan Swift in *Gulliver's Travels*: "Such constant irreconcilable enemies to science are the common people." On his visit to a scientific dystopia, Gulliver finds scientists in charge and interested only in the stars and in themselves, caring nothing about matters most people are concerned about, especially love and women. Their wives could take indecent liberties right in the face of their scientist husbands, and one beautiful court lady, married in the most generous circumstances, was happy to spend her time with an ugly, dirty lover, being beaten and mistreated, rather than live with her scientist husband who, being faithful to the life of a scientist, neglected her. Mistreatment is a sign of one's importance, in a perverse way—sometimes preferable to oblivious neglect.

Even scientists can resist science. In 2005, Nancy Hopkins, a molecular biologist at M.I.T., attacked Harvard President Larry Summers with a show of anger for suggesting the possibility that women might be less capable than men at science. Hopkins is a scientist but also a feminist who believes that women are equal to men in everything that matters. Her

belief overrode scientific caution; her demand for greater sensitivity from President Summers defied the rule of caution that scientists must never get angry. Love and anger can cause resistance to science from ordinary people and from scientists in the grip of ordinary human feelings. There is in the caveman, or alternatively in the old Adam, the part of human nature, spiritedness, or *thumos*, that resists science. This spirited part of the human soul or of human nature insists on the defense of one's self and leads to the reactions of reactionaries and also of progressives against those they spiritedly call "reactionary." In politics, *thumos* can be found in both parties, when resisting each other. Nancy Hopkins does not, I am sure, consider herself a reactionary, but that is what she is. She believed she was defending science when in fact she was defending herself against science.

Science as such is liable to lack of self-knowledge, for which one would need to have access to the pre-scientific presuppositions of science. That science cannot understand resistance to science is evident in its abandonment of the idea of the soul as it was conceived by Plato and Aristotle. The soul can be seen (this is not the only way) as arising from human resistance to being ruled and determined by anything outside itself. This resistance shows itself at its best in the insistence on thinking before acting—the exercise of *practical reason*—and on reflecting without acting—*theoretical reason*. Both practice and theory seem to require there be a break in the determinism of scientific causation. But scientific reason itself seems to require a break. It makes use of the human faculty of resistance; it borrows the stubbornness of ordinary prejudice to resist prejudice, which itself is not totally without reason but based on faulty reasoning. The impatience with which science rejects prejudice is not warranted by scientific caution, which might find something valuable in it. This is true particularly in social science, where science may be instructed by what human beings commonly and unscientifically observe about themselves. The stereotypes about men and women, for example, are not all wrong. Science shows its free spirit in rejecting non-science; when science rejects, it necessarily makes use of the *thumos* it necessarily opposes.

What Science Needs from Non-Science

Literature understands much better than science the human resistance to hearing the truth. Science cannot learn from common sense, which scientific method rejects on principle, but the wisdom and arts of literature focus on the presentation of truth that common sense knows the need for. Literature uses fictions that provide an intriguing image of truth. To

understand the fictions requires interpretation, an operation that literature welcomes and science rejects for the same reason: that interpreters disagree. Literature is open to this disagreement; it seeks to entertain and in some cases, such as *Gulliver's Travels*, it offers pleasure to both the child's mind and the philosopher's. Science achieves its universality in the monotone of mathematics, claiming the elegance of perfect clarity in which one can be sure that what comes from one mind is received by another mind with perfect fidelity.

Mathematics will attract those it can attract, but it will do nothing to overcome the resistance to science. Science is universal in principle but in practice it speaks to very few. Mathematics may be considered a communication skill of the highest type, frictionless so to speak; and at the opposite pole from mathematics, the fruits of science show the practical benefits of science without the use of words. But as we have seen, those fruits are ambivalent. Science as science does not *speak*; ideally, all scientific concepts are mathematized when scientists communicate with one another, and when science displays its products to non-scientists it need not, and indeed is not able to, resort to salesmanship. When science speaks to others it is no longer science, and the scientist becomes or has to hire a publicist who dilutes the exactness of mathematics. In doing so the scientist reverses his drive toward mathematical exactness in favor of rhetorical vagueness and metaphor, thus violating the code of intellectual conduct that defines him as a scientist.

Yet there are obvious reasons why science needs to use language everyone—that is, those of us unskilled in math—can understand. Science is very expensive; it needs money and gets it from the government and from corporations, that is, from taxpayers, consumers, and investors. In lobbying for money, science becomes divided against itself, no longer a universal enterprise with a brotherhood of scientists devoted to the whole; it becomes instead a plurality of scientific specialists with a variety of competing projects. The result is usually a lopsided cluster of policies shaped by private and public decisions not necessarily made in the interest of science nor free of trendiness and whimsy. Science has to suffer and adapt to the chanciness of democracy, and therefore can no longer represent a virtuous model of a democratic community, as it first appeared to philosophers like Dewey. It has to be content with what support it can convince non-scientists to give it.

Another reason why science needs to speak is that it needs allies against the opponents or enemies of science. As Peter Thiel pointed out, the month after the triumph of science when man landed on the moon, the

Woodstock Festival took place and the "Woodstock Nation" was formed. This event was a major defeat for science, as it turned students away from science, making some of them into hippies and many others favorable to the anti-science view of postmodernism. Hippies see no reason to study; they are complacent, irresponsible, and live off others. They are not violent or vicious but they do as much harm as criminals do. Scientists, with their democratic manners and hostility to formalities, may dress like hippies, and may in some cases even be inspired by the psychedelic art produced by the hippies, but unlike hippies they are hard workers who must think to succeed. Hippies are a greater danger to science than Professor Kaku's atavistic caveman who still wants to touch things in order to keep his hold on reality. Scientists may sometimes need friends among non-scientists who will make them aware of the demands of respectability required for society that science by itself underestimates and shrugs off.

Science and the Soul

Science thus depends on non-science. It needs "communication skills," or to use an older, better expression, rhetoric—a faculty it does not have and cannot get from itself. There could be no science of rhetoric in the modern sense without knowledge of the resistance to science in human nature, that push-back from feisty humanity that science, we have seen, cannot explain or cope with on its own. It appears that the universe is divided into matter that does not resist and matter that does, and the science that explains the first by deterministic laws does not fully or adequately explain the second. This common-sense observation about matter is enough to start one's thinking in the direction of the soul. The dependence of science on rhetoric exposes its need, and ours, for literature and social science. Literature and social science should not be afraid of science but also should not be quite so much in awe of it. They should reject the notion that all true knowledge is scientific and should recognize their own claim to knowledge of human things. They should question the unofficial sovereignty of science in the university and practice some of the confidence scientists now have too much of. They should look to the development of non-science as positively contributing to knowledge of the whole, each in its own way.

Let me indicate what might be done, or thought, by literature and social science to this end. First, they should understand that they have a common subject matter, the special matter or nature of human beings; so they should not be strangers to each other. Literature differs from social science by having as its focus the individuality of human beings, those

individuals and collectivities that have particular names. Its method is fiction, whereas history, also focusing on individuality, narrates and explains actual events as non-fiction. Literature is more reflective than history, or more philosophical as Aristotle said, for poets and novelists can give lessons by commanding chance events to make a pattern; historians have to make do with chance as it comes. Beings with souls experience the chance that enables them to act and think one way or another, a certain freedom not determined by the preceding situation. Social science, for its part, seeks generalities and universals in human things, studying what is changeable and what is not, convention and nature. Different as literature and social science are, they are not entirely distinct because man is by nature a different, more intense, and more self-sufficient individual than any other individual thing. The self-importance implied in the names used by literature and history will of course be reflected in the universals of social science. The two camps can learn from each other, literature and history to be more explicit and systematic, social science to be more respectful of chance, leaving prediction to soothsayers. Non-science has a greater acquaintance with chance than modern science, and hence a better understanding of it. Chance enables and accompanies freedom, which is another specialty of non-scientific disciplines.

Social science also needs to learn from classical political philosophy, and first of all to consider a return to the notion of the soul. As mentioned earlier, the soul antedates Christianity and has its origin in classical philosophy. To speak of soul is to speak of man, not necessarily of God—though it would require social science to be more inquisitive about the truth of religion and more respectful of its criticisms of materialism. "Man shall not live by bread alone" is a wise beginning, however one finishes the sentence. In saying that social science should *consider* a return to the soul, I do not mean that it should dismiss arguments against it, but rather that social science should include reflection on what its subject matter suggests or requires of it. The soul follows from the human ability to react and resist as well as to transcend, an ability observable by social scientists.

To observe human things, including this fundamental faculty, social science needs to reconsider the attitude of science toward common sense. All science is opposed to and suspicious of common sense, the enemy of science that upholds prejudice and relies on mere appearances. Social science bears the burden of opposing common sense on behalf of all science because common sense has to do mostly with human behavior. Natural science can easily defeat the common-sense view that the sun moves and

the earth stays still, but social science has more difficulty overcoming common sense. The common-sense stereotypes of sex differences, for example, have been in many cases confirmed by social psychology. In that and other fields, social-science surveys that ask people what they think represent a sort of surrender by science to the common-sense appearances of things—to what social science calls "perceptions." Common sense arises from what is available to human beings as such without artificial contrivances that add to human perception, such as the microscope and the telescope, and others that discipline human perception, such as social-scientific methodologies. Common sense makes observations in two main ways: by eye and by ear. By ear you hear what others say, especially those in authority; by eye, you see for yourself. Seeing for yourself despite what you hear is something that science and common sense have in common.

Social science cannot experiment in a laboratory using scientific instruments to the extent that it has to respect the human subjects it studies by asking them to consent to participate. Unlike biologists, who can even control the breeding of the animals or plants they study, social scientists can only study those human beings who volunteer to be experimented on. This is, from the standpoint of science, a primitive taboo based on the opinion that humans are special in the universe and cannot be studied without their consent. So social science begins with a concession to common sense that limits scientific inquiry. This forced concession should be accepted as a boon for social science because it helps, or could help it, to avoid the distorted picture of human behavior resulting from the contrived, artificial setting of the laboratory. But the scientific urge in social science impels it toward the pure and stringent discipline of the laboratory and away from the friendly guidance of common sense, like the sort of person who always refuses to be helped. Social science is satisfied to count the perceptions that it surveys and makes countable, and it does not think to examine them for what wisdom they may contain.

Class and Standard, Fact and Value

Speaking of perceptions, social science, studying the human world, has to deal with things as they appear to human beings, that is, as they are observable by common sense. It has to deal, for instance, with the difference between the sexes and with that between free and slave. Now, one could approach such topics through the ideas or forms or essences of classical philosophy, which begin from common-sense observations of things and of kinds of things. But to do so one must face the grand problem of

defining things, a problem especially acute in human affairs, and particularly in politics. When you define something, which do you aim at: the *class* of things or the *standard* set by the best example of a thing? For example, is human being defined by the average human being, recognizable by having the outward appearance and visible behavior of a human being, or by the best human being, the complete or perfect human being who has everything a human being might have? The average is used for counting heads and votes; the standard is used for judging and evaluating, for asking how much of a human being you are. Social science likes to use the average; it is more regular, more countable, more predictable than the standard, which may be infrequent or rare, unpredictable, and fragile. The standard may even be imaginary. In regard to male human beings, for example, social science would rather study *masculinity*, the characteristics of males as a class, than *manliness* as a standard set for the few. In this preference, social science follows science, but in non-human or natural science there is no problem of this kind. The average star is the same as the best star. Variation does not imply a hierarchy of better and worse; observing differences between stars can lead to the discovery (or invention) of a new class of stars, but does not lead to judgments of superiority among stars.

The political nature of the distinction between class and standard can be seen in Plato's *Republic*, a dialogue about justice. Justice turns out to have a dual meaning: each minding his own business, doing his job; and each doing his job *well*. The class meaning of justice includes, or can include, everyone; the standard meaning applies, strictly, only to philosophers, those very few human beings whose job judges and rules all jobs. But the few philosophers need the many non-philosophers and have to tolerate the lowering of the standard to include them so as to have justice in a just society. Yet the many too must be competent in their jobs, the doctors doctoring, not schmoctoring (in Robert Nozick's lovely conceit in *Anarchy, State, and Utopia*), and concern for competence leads back to the need for philosophy. To modernize the example, we can turn to freedom instead of justice. One can say with Locke and Rousseau that all human beings are by nature free, hence it is only by prejudice that some are enslaved or subordinated to others. Freedom requires that one be free from this prejudice—or does it require that one be free from *all* prejudice, since prejudice enslaves? But this question points to the result that the only strictly free are those few who are wise and capable in everything. The philosopher, then? Or rather a wise man, free of human imperfections. This would be God. The full meaning of freedom leads to its definition as the freedom of God, and the full definition of man is to be God.

The problem of class versus standard remains perhaps *the* problem of studying human beings. In non-human nature there is no such problem; a dog is a dog and the perfect dog is a typical dog. The best specimen of a prized breed is not more of a dog than a mongrel. Tame animals, it is true, can be tamed better or worse, but this is a difference attributable to the quality of human intervention and judged by a human standard. One would not wish to deny that a dog is man's best friend in non-human nature. Still, with human beings there come human imperfections (including that of not loving dogs), and the great difference between class and standard remains.

Social science can count votes, but what counts as a vote? Usually, a vote is any official expression of a political preference. But is a voter truly voting when he is uninformed and prejudiced, any more than a doctor is doctoring when he is blundering? How can there be a free election if the voters are not free in the sense of being undetermined by external manipulation or prejudice? The normal definition of a human thing by its class is always necessary and in a democracy almost always agreeable. A voter ID badge will never identify you as a conscientious and intelligent voter. But the normal class definition is subject to the criticism of strictness that demands a standard of the best. In this way government by consent becomes its seeming opposite, government by the wise, as the full meaning of "consent" is to consent with knowledge.

Any attempt to study government or other human things must patiently suffer the vagueness and indeterminacy arising from the potential for dissatisfaction with the average. It is enough to count the lawful votes that are cast to decide the election officially, but to determine the meaning of an election, or of democratic elections in general, one must ask whether the votes were given mindfully or cast in ignorance or somewhere between. Addressing the problem of definitions by recognizing a standard toward which the diversity of actual instances ought to strive is often called *teleology*. But while nature demands that the average acorn become an oak tree, nature provides no such clear standards for discerning the *telos*, or purpose, of human action. Plato and Aristotle show that in human things average and standard do not coincide, that human life requires both, and that the choice between them will typically be disputed. Social science criticizes teleology by assuming the superiority of its own standard of clarity, understood as definitions not open to dispute. But in human things definitions are always subject to uncertainty and dispute; one cannot avoid uncertainty by simply setting it aside and declaring it outside the model.

An example of false certainty in social science recently came my way. Two psychologists in New Zealand made a survey of "perceptions" in their country that revealed a glowing harmony of belief by both sexes that men should be gentle and women should "conform to traditional gender roles," which are "domestic, nurturing, and warm." This attitude they called Benevolent Sexism, or BS for short. They contrast it with Hostile Sexism (HS), which is more "aggressive in tone" and even "coercive." The survey showed that both men and women who accepted BS *perceived* themselves as happier, or, more precisely, they reported greater "life satisfaction." But, despite the two psychologists' own findings, they argued that BS is only "deceptively" benevolent, and the happiness associated with it results from the way it helps women accept and justify "gender inequality." The psychologists assert that, even though the survey respondents perceived themselves to be happier, their BS actually serves the same purpose as HS: the preservation of patriarchal gender roles, or B.S. in the usual sense. What the psychologists first called "perceptions" were, they ultimately concluded, delusions, and the psychologists' common sense—or was it partisan belief?—overruled what they found through their carefully modeled scientific survey of perceptions that were not in fact perceptions. In the end they (like Nancy Hopkins) rebelled against science so as to express their all-too-human humanity, but it is doubtful that they learned anything in doing so. Still, one could call it a teachable moment. In moving from the class of alleged perceptions to the standard of true perceptions our two psychologists were giving themselves a Socratic education, if only they knew. If only we knew, Socrates is everywhere in our lives.

Another way social scientists reject teleology is by invoking the fact-value distinction that somehow still prevails in social science (though not in philosophy, as Hilary Putnam recounts in his 2002 book *The Collapse of the Fact-Value Dichotomy*). The distinction can be understood in terms of class and standard, with fact as the class and value as the standard. But it is obvious that fact pertains to value and vice versa.

When my father was a professor at Ohio State University, he liked to tell of a wry jest made by the faculty there. Question: How many students are there at Ohio State? Answer: About one in a hundred. You could say that the answer given is a value judgment on the thousands of persons at Ohio State who perceive themselves as students. But it's also saying that the perception is wrong, that most of the students are not really students, which means that the alleged fact is not a fact. The "fact" that the students perceive themselves to be students, and that their claim is endorsed by the

registrar, is not a fact. The value judgment is actually being made, not by the faculty critics, but by those who speak of it as a fact. Obviously we need both definitions, the loose one and the strict one; social science, for all its claim to strictness, paradoxically insists on the loose definition and wrongly calls it "strict." The reason for calling it strict is that it can be counted strictly, but do you have a hundred tomatoes if ninety-nine are rotten? In one sense, yes, but in a more serious sense, no. And what should one think of a science that counts rotten tomatoes as sound in order to state a "fact" or a piece of data? Yet of course one could hardly compare an ordinary student or voter to a rotten tomato.

We need a new (or very old) definition of "strict" in social science. Strict is what is intelligible, not what is countable or agreed upon. The good tomato makes the rotten tomato intelligible as what it is, what it was, and what it ought to have been.* The strict thinker is one who seeks for the intelligible and takes the risk that others may not agree with him. In fact, this happens all the time in science and in social science. Science does not consist only of metrics for counting but also of paradigms that make things intelligible, as the many readers of Thomas Kuhn's book *The Structure of Scientific Revolutions* (1962) are almost taught. Scientists disagree, and social scientists are notorious for their partisan bias and the license they provide to publicists and columnists who can use the scientists' work to claim that "studies show" some politically or socially convenient assertion to be true.

The fact-value distinction is not based on logic or grammar. Values always follow from facts, and facts contain values. Difficult matters of fact lead to difficult value judgments, which will be disputed. Easy matters of fact lead to easy value judgments not open to dispute. What is called "fact" is merely what can be agreed upon; what is called "value" is disputed. The fact-value distinction says that we can agree on facts—so science is about facts—but we cannot agree on values and so non-science with its unsatisfactory assertions takes over. Facts, as opposed to wishes, are for the most part "stubborn facts" that are in your way; values are what you wish for. This means that values are facts that are imagined and wished for. The fact-value distinction simplifies the human condition to make it seem that it is a dichotomy of two extremes, on one side all reality and on the other all wish. Social science should abandon this confused attempt at

* A complication: A tomato that is rotten from the human point of view may be in a regular phase of its being from the tomato's, or nature's, point of view.

false certainty and return to the distinction between class and standard found in classical political philosophy.

I mention philosophy at the end, but I have been discussing it throughout. To consider science and non-science together, and in a whole that includes both, is neither science nor non-science but above them, so that each is made aware of the other. Philosophy is then still the queen of the university, sovereign over the specialties. It cannot assume that it will succeed in bringing harmony, and in any case it must face the additional challenge to reason made by revelation. As Allan Bloom emphasized, the concern for value commitment in our time is in truth a kind of return to religion, a desire for charisma if not grace. I end with a warning: the philosophy I have been advocating, or trying to introduce, a philosophy with relevance combined with ambition, is to be found in the Great Books, nowhere else. And a parting shot: you probably won't find it in the Department of Philosophy.