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The Limits of Expertise

If You're So Smart, Why Ain't You Rich?

DONALD N. McCLOSKEY

AMERICANS SAY THEY DON'T HOLD MUCH WITH EXPERTS. Harry Truman said that the expert is someone who doesn't want to learn anything new because then he wouldn't be an expert. Europeans appear to need experts for a society of deference, to which the American response is a Bronx cheer. Though Nicholas Murray Butler made Morningside Heights an American refuge for experts, he said that they know more and more about less and less. The European next to him in the roll of remarks, Samuel Butler the Younger, had little respect for pretension in general but plenty for the pretension of experts: "The public do not know enough to be experts, yet know enough to decide between them." You don't say. The rhetoric of the New World abounds with deflations of pretense: "Look who's talking"; "Where do you get off?" "Who d'you think *you* are, Bub?" And from Maine to California the capitalistic, American democrat relishes that most American of sneers, that American Question: "If you're so smart, why ain't you rich?"

Well, why ain't you? The American scholar suffers taunts, unimaginable in Germany or France, for not meeting a payroll, for not coming down from the ivory tower, for not getting wet behind the ears of his arrogant egghead. But, if he's so gosh darn smart, why *hasn't* he gotten rich?

The question cuts deeper than most scholars care to admit. The test of riches is a fair one if the expertise claims to deliver the riches, in gold or in glory. At a minimum the American Question should constrain scholarship about gold, and the story can therefore begin with economics. It goes further, though. The Question embarrasses anyone claiming profitable expertise who cannot show a profit, the historian second-guessing generals, or the critic propounding a formula for art. He who is

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so smart claims a Faustian knowledge, "Whose deepness doth entice such forward wits / To practice more than heavenly power permits."

I

Take it as an axiom of human behavior that people pick up five-hundred-dollar bills left on the sidewalk. The Axiom of Modest Greed involves no close calculation of advantage or large willingness to take a risk. The average person sees a quarter and sidles over to it; he sees a five-hundred-dollar bill and jumps for it. The axiom is not controversial. All economists subscribe to it, whether or not they "believe in the market" (as the shorthand test for ideology goes), and so should you. Yet it has a distressing outcome, a dismal commonplace of adult life, a sad little Five-Hundred-Dollar-Bill Theorem:

> If the Axiom of Modest Greed applies, then there exists no sidewalk in the neighborhood of your house on which a five-hundred-dollar bill remains.

For proof, consider that if there had been a five-hundred-dollar bill lying there at one time, then, according to the axiom, someone would have picked it up before today.

From this scientific reasoning it is a short step to common sense. If a man offers advice on how to find a five-hundred-dollar bill on the sidewalk, for which he asks merely a nominal fee, the prudent adult declines the offer. If there really were a five-hundred-dollar bill, then the confidence man would pick it up himself.

Such common sense is so obvious that confidence games must clothe themselves in a false rhetoric of self-interest. In a trick called the Pigeon Drop, the victim (that is, the pigeon) is persuaded to part with his bank account as earnest money for a share in a bundle of money "found" on the sidewalk. He must be persuaded that the con men are asking for the earnest money only as self-interested protection against the pigeon himself absconding with the bundle (which, after the con men have disappeared with his bank account, turns out to be paper stacked between two ten-dollar bills). Even pigeons don't believe that someone will present them with five hundred dollars out of the goodness of his heart.

The leading case is the scheme to get rich quick. A letter arrives from Edward L. Green announcing: "The World's Greatest Secret! Now you can learn how to receive fifty thousand crisp five-dollar bills in the next ninety days. . . . A personal note from the originator of the plan." Green's surprising kindness is affirmed by Carl Winslow of Tulsa: "This is the only realistic money-making offer I've ever received. I participated because this plan truly makes sense!"

Common sense replies that the plan truly does not make sense, not any sense at all. Though the plan uses the rhetoric of mutual interest—believe me, fella, this deal's good for you and me both—it fails to turn the rhetoric on itself. If Mr. Green had the secret for receiving fifty thousand crisp five-dollar bills, he would clue you in only if your one crisp five-dollar bill was good for the chain and good for Edward L. Green. But you have no reason beyond Mr. Green's assurances to think you are early in the chain. If you are not, you send out money and get nothing in return. A child will subscribe to a chain letter—or a guaranteed investment in Civil War figurines or a set of presidential commemorative coins suitable for collectors—and expect to win; an adult will not. No one with experience of life believes Publisher's Clearing House when it writes, "*Ms. Z. Smithh*, you have just won $250,000." The adult does not expect fortune to come unbidden, and asks prudently, "Why are they telling me this?" Prudence suspects an offer equivalent to picking up a five-hundred-dollar bill. Except to the flocks of optimistic Americans who invest daily in chain letters and prizewinning magazine subscriptions, this goes without saying.

Therefore, the bargains and hot tips and special deals for you alone offered by over-friendly men with clammy handshakes at dog tracks and used-car lots do not tempt the prudent adult. Yet similar offers made outside a Damon Runyon setting seem plausible to respectable if greedy folk. The high-class pigeons come flocking to the con, eager to believe that Mr. Expert is about to give them free advice on how to make a million.

Economists, for example, are routinely asked at cocktail parties what is going to happen to the interest rate or the price of housing or the price of corn. People think that asking an economist about the future is like asking the doctor at the party about that chest pain, getting an expert to do his job free. Take corn. Any agricultural economist in the Midwest spends much of his television airtime delivering expert opinion on what will happen next month to the price of corn. Surely he, this expert, must know if anyone does. It would be depressing news to be told that, after all, no one does know.

An economist who claims to know what is going to happen to the price of corn, however, is claiming to know how to pick up five hundred dollars. With a little borrowing on the equity of his home or his reputation for sobriety, he can proceed to pick up five hundred thousand dollars, then five hundred million, then more. Nothing to it. If an agricultural economist could predict the price of corn better than the futures market, he would be rich. Yet he does not put his money where his mouth is. He is not rich. It follows that he is not so smart.

It may be objected that the profit making is risky and that professors of economics are cautious. Therefore, they do not put their money where their mouths are, even though their mouths are working fine. The objection has the problem that the bet on the price of corn can be hedged, which is insurance. It is no bet. Someone who can outsmart the market on average even a little can make a lot of money simply and safely. The opportunity to buy corn low and sell high, like the right to run a TV station in the 1960s or to import Toyotas in the 1980s, is like finding a five-hundred-dollar bill anytime you want.

It may be objected that the profit making is complicated and that professors of economics are elaborately trained experts in the complexities. Therefore the five-hundred-dollar bill is not available to just anyone, only to them. The wizards earn merely what they are worth, the normal return for years of studying wizardry. This objection, too, has problems. The first is that the wizards are telling us about the future price of corn or bonds or housing at cocktail parties and in the newspaper—for free. Why are they handing over to John Doe their just reward for going to wizard school? The second problem is that the wizardry claimed is systematic, formulaic, and, when you come right down to it, pretty simple. It involves the fitting of a few straight lines to scatters of points. Take a course in economic statistics, the promise goes, and become able to predict the future in profitable ways. The promise is hard to believe, because it sounds a lot like The World's Greatest Secret. Ordinary secrets and routine advice do flow from economics, and doubtless economists earn their keep. Unlimited wealth, however, cannot be expected to flow from a book or even from many years of concentrated study in economics. Compared to unlimited wealth, many years of study is like the trivial cost of reaching down to pick up a five-hundred-dollar bill. If someone knows a scholarly formula for predicting the price of corn, it would already have been exploited.

The same grim truth from the American Question applies to the stock market. Because the stock market is obviously a matter of expectations, about which we all know something, and because it is crowded with experts in handsome wool suits, the truth is hard to swallow. Hey, *Barron's* and "Wall Street Week" wouldn't kid me, would they? Surely all those analysts and pundits and technical elves know *something.*

No, unhappily, they surely do not. They truly do not make sense, not any sense at all. The reason they do not is the American Question and the Five-Hundred-Dollar-Bill Theorem: there exists no sidewalk in your neighborhood with five hundred dollars of stock-market profits lying on it. If a stockbroker were so smart, he would not be making his riches by selling stock tips to widows and orphans. In the style of the chain letter, the tipster divulges inside information for his gain and your loss. The rhetorical pose of stockbrokers and racetrack tipsters to be offering prudent advice is contradicted by their circumstances, a contradiction catalogued in rhetoric as the "circumstantial *ad hominem.*" That is to say, "Being so smart, why don't you do it yourself, if it's such good advice?"

"A tout," said Damon Runyon, who knew the score on the economics of prediction, "is a guy who goes around a race track giving out tips on the races, if he can find anybody who will listen to his tips, especially suckers, and a tout is nearly always broke. If he is not broke, he is by no means a tout, but a handicapper, and is respected by one and all."

We know the force of the American Question and the Five-Hundred-Dollar-Bill Theorem as well as we know anything. If we know that the sun will rise tomorrow and that prime numbers are odd, we know that people who were so smart would be rich and that sidewalks that were so filled with five-hundred-dollar bills would be cleared. Therefore, a prediction about stocks—as distinct from mere current information about the market, a mere statement of the going odds, a mere consensus of public opinion, reflected in the price—is on average worthless.

It has been easy, therefore, to assemble statistical evidence that the Five-Hundred-Dollar-Bill Theorem is true about Wall Street: stock markets everywhere do in fact jiggle about in unpredictable ways. The evidence is by now overwhelming. In 1933 Alfred Cowles, the founder of the journal *Econometrica,* posed the question in a title, "Can Stock Market Forecasters Forecast?" "It is," he answered, "doubtful." Cowles himself had abandoned a forecasting business in 1931, ashamed of his failure to foresee the Great Crash. Burton Malkiel's *A Random Walk Down Wall Street* (1985) gives an accessible summary of the research since Cowles; one such study is P. H. Cootner, ed., *The Random Character of Stock Prices* (1964). The forecastability of stock prices continues to be at best doubtful.

It may be objected that sophisticated people do in fact buy stock-market advice. An economist (and only an economist) would conclude that something of value had been bought. A reply has been suggested by James Burk, a sociologist and former stockbroker, who found that the advice-giving industry sprang from legal decisions early in the century. The courts began to decide that the trustee of a pension fund or of a child's inheritance could be held liable for bad investing if he did not take advice. The effect would have been the same had the courts decided that prudent men should consult Ouija boards or the flights of birds. It was so at Rome: a consul who ignored the advice of the college of augurs was liable to prosecution after retirement. America decided through its judges that an industry giving advice on the stock market should come into existence, whether or not it was worthless. It did, and it was.

(Europe is not similarly blessed, because the law is different.) The industry can go out of existence the same way. The judge who first asks the American Question and rules a stockbroker liable for his unsuccessful advice will save many a widow and orphan from investment counseling.

It may be objected that, after all, a great deal of money is made in the stock market. This is true also at the track in Miami. Grandfather Stueland was offered Radio Corporation of America stock in the early 1920s and regretted later that he had invested in Stueland Electric instead. Some people did buy RCA; they must have known. But that some people win with the stockbroker or the hundred-dollar window at Hialeah does not mean that they were justified in their true belief. They could have won by luck rather than by a justifying technique. People win at slot machines, too, but cannot tell how, because they use no justifiable, inscribable, bookable technique. And even if some people *do* know they will win (God appears to them in a dream and tells them, maybe; or they have genuine inside knowledge), there is no way for the common pigeon to know that these alleged experts know. Why would they be telling you, Bub?

It may be objected at last that the economist or another seer in the stock or bond or housing market does not have access to the big loans to make big money. Yet consortiums do, and if the wisdom comes simply from being an economist, it ought to be easy to assemble them. A consortium of famous economists at Stanford and the University of Chicago in the early 1970s believed that interest rates, which were then at shocking, unprecedented highs (6, 6.5, my Lord, even 7.5 percent), just had to come down. The price of bonds, in other words, just had to go up. A good time to buy bonds. The economists complained at lunch that their bankers would not loan them money to exploit this sure thing, the world's greatest secret. But in the event, sadly, the bankers were right. Interest rates did not fall; they rose. The consortium of economists, relying on its collective expertise, lost its collective shirt.

The routine is the usual one. I myself have lost a shirt or two on real estate deals bound to succeed and on a consortium of economists speculating in the foreign exchanges. From John Maynard Keynes (who lost money regularly before breakfast) and Irving Fisher (who reduced Yale's endowment to half Harvard's by touting stocks in 1928) down to the latest scheme of some economist to make money from mathematical models of gold speculation, economists have not earned the confidence of bankers. As it was put by Paul Samuelson, a student of these matters, "It's a mug's game for a dentist—or an associate professor of econometrics—to think that he and the telephone can have an edge over those who count the cocoa pods in Africa and follow the minute-by-minute arrival of new information."

The best-known counter-example among economists is said to be the late Otto Eckstein, a superb economist with much common sense who extended the large-scale econometric model into commercial use. He built Data Resources, Inc., into a company with revenues in 1984 of eighty-four million dollars. But Data Resources did not use its own predictions of prices and interest rates to speculate. It sold them to others, mainly to companies who wanted a myth of knowledge to comfort them in uncertainty and to answer wrathful stockholders: "We took the best advice." If Data Resources had believed its own predictions to the extent of speculating on them, and was correct in its belief, then it could have become fabulously richer than it was. To say that Otto Eckstein or Paul Samuelson or other honest purveyors of economic tips became in fact a little bit rich does not answer the American Question. Eckstein and Samuelson (and Louis Rukeyser of Wall Street and Hot Horse Herbie of Broadway) became rich by *selling* advice, in the form of models and statistical equations and other charming talk, not by using it.

Cato the Elder reported of the haruspices, who examined livers in Rome with an expertise approaching the econometric, that they could not but laugh on meeting one another. Economists know lots of similar gags about their inability to predict profitably: forecasting is very difficult, especially if it is about the future; an economist is an expert who can tell you tomorrow why the thing he predicted yesterday didn't happen today; the best I can hope for in a forecast is to be intelligently wrong or fortunately right.

Yet one must not get carried away. No one doubts that a well-informed economist can tell you a thing or two about the future, mainly from knowing the present well. As the economist Robert Solow remarked about the predictions from Data Resources, "Every month it provides an orderly description of the data, organized in such a way that one's attention is called to events that seem to conform with a reasonable person's understanding of the economy." The American Question casts no doubt on predictions that offer little or no profit. A prediction makes no profit if it is a commonplace or if it does not offer a way to buy low and sell high. Predicting that the national income will not fall to zero next year is no more profitable than predicting that the sun will rise tomorrow.

Other people view economists as social weather forecasters. Economists are not happy with that analogy, since they know they are not so smart. Weather forecasters and price forecasters could both earn a lot of money on a good forecast if they could keep it secret. Come to mention it, though, economists don't do much of a job as public forecasters. Victor Zarnowitz, the leading scholar in the field, makes only modest claims for the most promising method. A recent study by Zarnowitz and Geoffrey

Moore showed that "leading indicators," invented by Moore and now reported monthly in the press, can indeed predict business cycle peaks—but with leads, alas, ranging from one to nineteen months. "The economists are generally right in their predictions," Sidney Webb said once, "but generally a good deal out in their dates." Predicting the end of prosperity as coming somewhere in the next nineteen months is a little better than saying that, if it's August, then southern Florida has a fair chance after a while of getting a hurricane. Yet it is not so smart that the economic forecaster could retire to Miami. It is not good enough to be profitable; and if it were, it would already be discounted.

There are other ways of getting to the same doubt that economists can predict. For one thing, unlike humans, hurricanes are not listening. Humans react to economic predictions in ways that dampen or magnify the predictions. It would be as though the hurricane currently north of Cuba reacted to a forecast that tomorrow it was going to move to Miami by saying, "Hmm, I'd better turn around and go to Haiti instead." This is the point made by conservative economists suggesting that people have "rational expectations." One does not have to accept every notion in rational expectations to believe the more modest theorem proposed here. It would suggest, modestly, that the people are not so stupid that they are easy to surprise; if they are not easy to surprise, then the economy is not easy to manipulate, and its manipulators would not be rich.

Further and more deeply, the equations of fluid dynamics applicable to the weather do not include an equation that rules out cheap but profitable predictions. Economic models do. A person who was smart enough to know the solutions to the economic equations would be rich, unless profitable solutions were already anticipated and discounted by the model. But they should be discounted, according to the Five-Hundred-Dollar-Bill Theorem. If the model is a widely available piece of information, or if its essence were embodied in a widely held judgment, it would be useless for making anyone rich. Wise in retrospect, maybe; rich in prospect, no.

The American Question and the Five-Hundred-Dollar-Bill Theorem radically limit what economists and calculators can know about the future. No economist watches the TV program "Wall Street Week" without a vague sense that he is betraying his science. He should be pleased. His science proves its robustness by asserting confidently that the science cannot profitably predict—indeed, that no science of humankind can profitably predict, even the science of stockbrokers. The economic theorem is so powerful that it applies to economists.

The post-modern economist is modest about profit-worthy detail, the detail from which he could buy low and sell high. He must be modest especially about the proud claim of economics in the 1960s, the claim to fine-tune the economy, making detailed adjustments to money and taxes to offset a depression just around the corner. As economists realize now after much tragedy sprung from hubris, if an economist could see around the corner, he would be rich. Fine-tuning violates the theorem: a fine-tuner would see dozens of five-hundred-dollar bills lying around his neighborhood. The economists go on relating impossibly detailed scenarios into the microphones of television reporters, but in their hearts they know they are wrong.

The American Question requires intellectual modesty in the economic expert, if he does not want people to laugh on meeting him. Hubris will need divine protection. Xenophon reported Socrates as saying: "Those who intend to manage [*oikesein*] houses or cities well are in need of divination. For the craft of carpenter . . . or economics [*oikonomikon*] . . . may be learned . . . ; but the greatest of these matters the gods reserve to themselves. . . . If anyone supposes that these [divinations] are not beyond reason, and nothing in them beyond our judgment, he is himself beyond reason." Socrates could turn to the oracles for divine supplementation of a craft. We have lost today the favor of the gods, and books on economic technique will not assuage our woe.

II

All this concerns economics; but there is more. The more leads back to the ancient and sensible doubt that critics can do as much in the way of art as artists can. The American Question mocks the hubris of the critic.

The critic's coin of profit need not be monetary. Political power is there on the sidewalk, too, waiting to be picked up if the 500,000-vote theorem is wrong. But of course the theorem is right. You cannot find a simple way, to be written down in a book, for getting 500,000 votes. If you think you can, well, why not try? Similarly, prestige in the local saloon would be cheaply available if the American Question did not also cast doubt on predictions of sporting events. But it does. The lineaments of the sporting future apparent to the average guy will be reflected in the sporting odds. Only fresh details give profits above average measured in money or prestige. Fresh details are hard to come by. Information, like steel, is costly to produce.

The American Question can be asked of all predictions of trends—in journalism, sociology, political science, commercial art, and elsewhere. It mocks the claims of predictors, social engineers, and critics of the social arts. The predictor who could get it usefully right would be a god incarnate, a diviner.

The reason is not that humans are too complicated or too changeable or too free. The humanistic criticisms of social science may be true but they are not telling; they are easy to make and easy to answer. The scientists answer, "Give us the money and we will finish the job." If humans are "ultimately" free, considered as individuals, they still can be predicted on average and in the mass. And if human masses are complex, they still can be predicted with another million dollars and another model. So long as humans are to be viewed as molecules bouncing against each other, the problem is merely to get the mathematics right. It is said that making predictions about human beings is bound to be more complicated than making predictions about planets or pigeons, but that is not true. It depends on what you are trying to predict. The heartbeat of a human is easier to predict than the twitching of the sixty-seventh feather on the pigeon's tail. It is a matter of how ambitious the prediction is. The "simple" problem of space flight, "merely" an application of Newton's laws, requires days of computation at high speed if the ambition is to put a rocket precisely *there* on Mars. For a given ambition, the complexity is only a matter of computer time.

The American Question puts more fundamental limits on what we humans can say about ourselves. It puts a limit on mechanical models of human behavior. It does not make the mechanical models useless for interesting history or routine prediction; it just makes them useless for gaining an edge about the future. If people were as predictable as naive behaviorism alleges, for instance, the psychologists would be rich and the personnel managers all-powerful. The field of industrial and managerial psychology was erected in the 1930s on just such a putative secret, but it led to miracles only on Thirty-fourth Street. To revert again to economics, the various "solutions" of bargaining problems have this flaw: that if the economist knew the solution, then so would the players, which would make the solution valueless. The Turing machine that could predict the next move of a competitor would sell for a lot of money. If Turing machines are cheap, no one can get rich by using them to outsmart others.

Likewise there are limits on the teachability of skills. It is paradoxical to claim that a Ph.D. qualifies one to teach "entrepreneurship," or even "excellence." The present content of the business school, with its burden of mechanical technique, undervalues the stories and moralities that make a business culture. Yet the humanities cannot be taught by machine, either. Gary Walton, an economist and dean of a business school, has written a book called *Beyond Winning* about "philosopher coaches," such as Woody Hayes in football or John Wooden in basketball. He is aware that, if coaching could be learned from a book, the woods would be full of Woodys and Woodens. If coaching were mechanical in its effects on the athletes, then East Germany would never lose an Olympic contest. The ability to teach exceptional performance is itself an exceptional performance. What can be said about the athletic case is what can be said about the scholarly case: that a great coach or a great scholar teaches not by instructing the students in a bookable technique but by exhibiting a way of life.

The limit on calculability and say-ability applies to language and rhetoric itself. If anyone could get his way by shouting, for example, then everyone would shout. H. P. Grice affixed an economic tag to the trumping of speech conventions: "exploitation." As Stephen Levinson put the point in his recent book *Pragmatics:*

> There is a fundamental way in which a full account of the communicative power of language can never be reduced to a set of conventions for the use of language. The reason is that wherever some convention or expectation about the use of language arises, there will also therewith arise the possibility of the non-conventional *exploitation* of that convention or expectation. It follows that a purely conventional or rule-based account of natural language usage can never be complete.

A rhetorical analysis has this limit: that it can tell wisely and well how a speech has gone in the past, but cannot be expected to provide the world's greatest secret for the future. It can show how Cicero in *Pro Archia* exploited tricolon, how Descartes exploited rhetoric to attack rhetoric itself, or how Jane Austen in *Northanger Abbey* exploited an irony that was always intended, covert, finite, and stable. But rhetoric cannot be finished and formulaic, or else anyone could be a Cicero, Descartes, or Austen. The chimera of a once-finished formula for language must be left to Fregean philosophy or to magic.

Before Faust turns in vexation to magic he laments, "I see that we can know nothing! / It nearly breaks my heart." On reflection he amends this sweeping skepticism. The American Question does not imply literally that *wir nichts wissen können* but merely, as he then complains on behalf of his fellow men, that Faust can know nothing that betters mankind—*die Menschen zu bessern.* On reflecting a little more, however, he comes to the nub: his studies have taught him nothing that betters Dr. Faust, this very part of mankind. "And *I* have neither property nor money, / Nor honor and glory in the world: / No dog should go on living so"; *"Auch hab ich weder Gut noch Geld. . . ."* There lies the tragedy—at the impossibility of predictions profitable to *Faust* himself. He seeks the world's greatest secret for personal profit, which in due course he obtains, though not for free lying there on the sidewalk, *und hatte sowohl Gut als Geld.*

Lacking the Devil's bargain, science cannot predict itself. The paradox shows up in economics because economics so plainly must apply to itself, if it's so smart. But the paradox applies to any foreknowledge of new knowledge. The impossibility of self-prediction has become a commonplace in philosophy. You do not know today what you will decide tomorrow, unless you have already decided it, in which case it is not tomorrow but today that you decide it.

Prescience is an oxymoron, like cheap fortunes: pre-science, knowing before one knows. Prescience is required for central planning of science. Karl Popper and Alasdair MacIntyre among others have pointed out that knowing the future of science requires knowing the science of the future. It is not to be done. MacIntyre notes that the unpredictability of mathematical innovation is a rigorous case, resting on theorems concerning the incompleteness of arithmetic and the incalculability of certain expressions, proven by Gödel and Church in the 1930s. And "if the future of mathematics is unpredictable, so is a great deal else." If someone claims to know what method or lack of method would yield good science, why isn't he scientifically rich?

The other arts are similarly constrained. Some critics in the eighteenth century believed they had methods for assuring excellence in drama or painting. Nowadays no one would claim to have a formulaic, bookable method for constructing excellent paintings, except as a postmodern joke. The method would solve painting, in the sense that tic-tac-toe has been solved. This is not to say that rules of perspective or color harmonies cannot be constructed and applied. They can, the way a poet can check for agreement with the meter she has chosen or a dancer can check his fifth position. It says only that there is at present no routine, book-readable method for achieving artistic riches. The unusually profitable opportunities have been picked up, leaving normal returns to normal ability.

Each bit of the accumulated routine was once someone's personal and profitable trick. The genius has more tricks than the rest of us—tricks that become tomorrow's routines. The first Florentine businessman to use double-entry bookkeeping gained a control over his materials similar in value to the first Athenian sculptor's use of the slouch of standing bodies. In this age of iron, no one earns five hundred dollars from the mere idea of double entries or contrapposto. Any present day is an age of iron, because gold is picked up as soon as it appears.

The distinction between routine predictions and startling and profitable divination is analogous to the distinction between routine cooking and the profitable art of three-star cookery. In a peculiar little dialogue, the *Ion*, Socrates lampoons Ion, the performing Artist, who imagines he *knows* something. It is significant that, to mock Ion's claim to knowledge, Socrates uses the example of divining. As Plato and the American Question would say, the claim of divining to be an art, Greek *techne,* a mere bookable craft, is absurd.

Plato therefore wished to cage poetry, the god-possession that flatters men to think they know more than does the honest artisan, a technician in every sense. The followers of Plato down to the age of technique are enamored of knowledge as *techne,* a craft written down in books. They propose to cast books lacking such craft into the flames, as poetry and pretense, mere sophistry and illusion. The trouble is that their version of the fully rational life, the bookable final rules for language games, requires unusual prediction. And in human affairs a prediction beyond what earns merely usual returns is impossible, except by entrepreneurs, idiot savants, *auteurs,* and other prodigies of tacit knowledge. The notion that bookable knowledge can guide the world through its difficult moments, like the notion that central planning can guide an economy, is self-contradictory. If the philosopher kings and central planners were so smart, they, too, would be rich.

As indeed they are, for a reason other than their ability to predict. They live in a world ever hopeful that procedure, mechanism, calculation, bureaucracy, MBA degrees, and other social *techne* will keep us warm and safe. It will not, as the American Question reminds us so rudely, though the world is willing to pay for the illusion.

III

Nothing I have said implies that the project of acquiring systematic knowledge about the economy or about poems and paintings is worthless. Inside the margin, as economists say, it is worthful. The world runs on little else. Everyone needs to know how to write with an alphabet, though it took a Phoenician genius to think it up and make his fortune. No one afterwards, though, can expect to make a fortune by knowing the ABCs.

An economist examining the business world is like a critic examining the art world. Economists and other human scientists can reflect intelligently on present conditions and can tell useful stories about the past. These produce wisdom, which permits broad, conditional "predictions." Some are obvious; some require an economist; but none is a machine for achieving fame or riches.

The economist says, if a government shoots everyone with eyeglasses, the economy will not perform well. Or, if voluntary restrictions such as those in force a few years ago on Japanese automobile imports are reinstated, then the Japanese manufacturers will benefit by about \$1,000 per car, and the American auto buyers will pay about \$160,000 per year for each job saved in Detroit. Though useful as wisdom, and justifying the economist's role as critical theorist, neither of these predictions is bankable.

The argument is merely that, at the margin, where supernormal profits and reputations for genius are being made, the observer's knowledge is not the same as the doer's; the critic is no improvement as artist over the artist; the model of the future is no substitute for the entrepreneur's god-possessed hunch. The critics become ridiculous only when they confuse speaking well about the past with doing well in the future. Critics of art and literature stopped being ridiculous this way a long time ago. It would be a fine thing if critics of society would join them in their modest and sober sophistication.

No one is justly subject to the American Question who retains a proper modesty about what observation and recording and storytelling can do. We can observe the history of economies or the history of painting, and in retrospect tell a story about how security of commercial property or the analysis of vanishing points made for good things. An expert such as an economist is an expert on the past and an expert only about the future that can be known without divine and profitable possession. Human scientists and critics of human arts, in other words, write history, not prophecy.

Harry Truman had it about right. The expert as expert, a bookish sort consulting what is already known, cannot by his nature learn anything new, because then he wouldn't be an expert. He would be an entrepreneur, a statesman, or an Artist with a capital *A*. To these the expert critic can properly retort: if you're so rich, why aren't you smart? But, anyway, the bookish sort has to settle for low wages. Smartness of the scholar's sort cannot proceed to riches.