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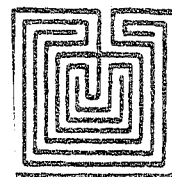
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## Anticipations

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## The Literary Character of Economics

THE TRIADS THAT CORRESPOND in French to our English “natural sciences, social sciences, and humanities” are *les sciences naturelles, les sciences sociales, et les sciences humaines*; and in German, *die Naturwissenschaften, die Sozialwissenschaften, und die Geisteswissenschaften*. In both, and even in the third term of both—the term for studies of poetry and language and philosophy, studies discursive and decidedly literary in form—there appears a scienceword. But in French and German, and in other continental languages, it is not properly understood as English “science,” with what that august word connotes of numbers, laboratory coats, and decisive experiments publicly observed. Although German usage, like German politics, has since the last war bent a little to the ways of Britain and America, the German speaker has, on the whole, less opportunity to use *Wissenschaft*, or the French speaker *science*, as a club to batter wordfolk with. Nor can it be so easily used, the way it is by the English-speaking literati, as a curse against the anti-art, that blackest art, the bane of sweetness and light. In French and in German, it merely means “disciplined inquiry,” as distinct from, say, journalism or common sense. It does not mean “quantitative,” and does not warrant use as an epithet—wine-dark Science or the Scientist of the golden hair—as Lord Kelvin used it in 1883: “When you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind: it may be the beginning of knowledge, but you have scarcely in your thoughts advanced to the stage of *science*.”<sup>1</sup> In continental languages, the scienceword has no special epistemological clout.<sup>2</sup>

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The point is that the continentals, uncharacteristically, have gotten it right. It is right that a sentence such as "Literary criticism is a science" or, to get to the issue at hand, "Economics is a science" should not be the fighting words they are in English. The fighting lacks purpose, because, as our friends across the water could have told us, nothing important depends on its outcome. Economics in particular is merely a disciplined inquiry into the market for rice or the scarcity of love. It is a collection of literary forms, not a science. Indeed, science itself is a collection of literary forms. And literary forms are scientific.

None of these remarks, repeated in the past decade by dozens of philosophers and historians of science, is intended to imply that science is inconclusive or that literature is cold-blooded. Science daily uses art for urgent practical purposes. That aesthetic judgments must be made before one out of the myriad of theories in particle physics is selected for the immensely expensive experiment required for testing it makes science neither arbitrary nor flimsy. As Steven Weinberg said recently about an experiment testing his own piece of the physicist's art:

That experiment cost some \$30 to \$40 million dollars, not for the accelerator you understand, just for the experiment using the accelerator. . . . This is an enormous commitment of your money and our time, one that can only be made when the judgment has been made that the theory is worth testing, and that judgment is very often entirely a matter of how beautiful we think the theory is.<sup>3</sup>

Kenneth Burke, coming from the literary side, speaks of the persuasiveness of elegant forms: "a yielding to the form prepares for assent to the matter identified with it."<sup>4</sup> And, of course, art in turn uses science for urgent practical purposes, too. Statistics are forms, figures of speech in numerical dress. Since the Renaissance, textual criticism has depended heavily on the logic of probability and the counting of frequencies, yet by improving a text of Macrobius in this way, we have not devalued its literary qualities.<sup>5</sup> The holy of holies among the devout—but simple—is Popperian falsifiability in its vulgar form. In attacking its pretensions to be the very meaning of meaningfulness, Wayne Booth, another literary man, notes that "the test is a powerful one, in dealing with certain problems; I use it myself in trying to test my own guesses about how literary works are

put together. But stated as a universal dogma it is highly questionable."<sup>6</sup> The only dogma worth promulgating is no narrowing one—that is, in a good argument, artistic and scientific modes of thought interpenetrate one another.

Moderns view the interpenetration of science and art as a contravention of God's law, one that is likely to give birth to monsters. Though popular these three centuries now, the view has never been very reasonable, reasons not being the modernist's strong point. Scientists of all sorts, however, and in particular economic scientists, think and persuade with metaphors, authority, and considerations of symmetry, beauty, and moral weight, just as humanists of all sorts think and persuade with numbers, experiments, and considerations of economy, power, and predictive force. The proportion in which they select the various tools of thought will depend on what exactly they are thinking about, not what allegiance they have to the literary or mathematical branches of the intelligentsia.

Many economists embrace with considerable warmth the view that economics is literary; others react against it with equal warmth. Some might consider it odd for people to become so impassioned about matters of method that are after all not very important in what they do each day. No study of the market in groundnuts or Treasury bills will change much if the scholar thinks of himself as an artist rather than a scientist, or as a scientist who down deep thinks like an artist. Still, the strength of the humanist's desire for theological grounding, or the scientist's for axiomatic foundation, is unflagging, although neither, each with its accompanying Methodology, will matter much to the daily work of the scholar. A species that can commit murder wholesale because its victims have not given proper weight to transubstantiation or to the transformation problem apparently has trouble keeping merely methodological questions in perspective. The answers given provide them with identities as Protestants or Marxists or Scientists. Economists are not unlike most others in wanting an up-to-date persona, and many of them are quite enthusiastic about identifying their field as social physics and themselves as expert social engineers. Such an identity has many comforts, among them, "It's none of my business that they're sticking cattle prods into people over at the soccer stadium: I just work here." Put another way, to show that economics resembles literary criticism, philology, and social theory as much as particle physics

and dam building, can either thrill economists with a wild surmise or leave them trembling with rage.

If we would overturn the authority of science in economics, we must question the usefulness of drawing a line between science and art. Some economists will no doubt turn livid at the very thought, but those outside the field will merely yawn, never having been convinced of the validity of the scientific claim anyhow. All they know about economics is what they read in the papers, but they know what they don't like—and besides, it's not science. This is the wrong approach. Economics *is* science, and a brilliantly successful sort at that. It explains as much about businesspeople and resources as evolution explains about animals and plants, for identical reasons. The claim is not that economics is mere humanism because it is a failure as a science, but that all sciences are humanism—and not *merely*—because that is all there is for humans to be.

More is at issue, in short, than the membership of economists in the National Academy of Sciences. What is at issue is "modernism," what Wayne Booth identifies as the "key test of modernity" in intellectual matters, "the automatic reliance on the distinction between facts and values . . . , the belief that you cannot and indeed should not allow your values to intrude on your cognitive life—that thought and knowledge are on one side and affirmations of value on the other."<sup>7</sup> Booth notes that although modernism served well in earlier wars, it is now decrepit. In its wild youth it begot scientism, the doctrine which holds that the only sort of cognitive life is the scientific. Scientism damaged the ability to understand, confining psychologists to theories that until recently made no use of the unconscious mind, and economists to theories that until recently made no use of psychology.

The antimodernists want to revive certain writers who for long have been neglected, especially in the English-speaking world, because they would not accept this or that piece of the modernist/scientismic orthodoxy, such *bêtes noires* as the Greek sophists, Cicero, scholastic philosophy, and Hegel. They include in more recent vintage the American pragmatists, out of philosophical fashion now for quite some time, whose work was long viewed as an amusing but crude approximation of what was properly done in Vienna or Cambridge:

I write them out in a verse:  
James and Dewey and Peirce.  
Sweetness and light enough,  
In math not quite up to snuff.<sup>8</sup>

More recently still, the antimodernists include continental philosophers (Heidegger, Habermas, et al.), certain unconventional observers of science (Polanyi, Koestler), renegade analytical philosophers (Stephen Toulmin and Richard Rorty), social scientists using nonquantitative methods (from Freud to Piaget and Fraser to Geertz), philosophers and historians of science after Thomas Kuhn—and literary critics in profusion.

The point is to apply such thinking to economics. If they knew the lingo, most economists, at least most English-speaking economists, would rejoice in the title of modernists and scientismists. Their conversations about methodology use locutions that went out of fashion in philosophy thirty years ago. The evidence that economists are philosophical modernists is of various sorts: methodological declarations; the feeling, which anyone fluent in economics has, that modernism rules; and the reaction to papers like this one, in which some readers will almost certainly be heard to mutter that "ultimately" the only "fundamental" proof of an economic assertion is "objective," quantitative "tests."<sup>9</sup> It will not do, therefore, to say of the methodological rules of economists, "No one believes *that* stuff anymore." No one, perhaps, in sophisticated departments of philosophy (though it is not easy to explain otherwise the heated reactions of some philosophers to writers like Rorty or Toulmin), but a modernism of the cruder sort still thrives in the harder sciences, such as economics.

That economists believe themselves to be modernists does not mean that in their actual scholarly practices they are; the jokes they tell one another about the work they do, for instance, make any such assumption dubious. A memorandum circulated last year among the staff at the Council of Economic Advisers, for instance, included the following: "Mankiw's Maxim: No issue in economics has ever been decided on the basis of the facts"; "Nihilistic Corollary I: No issue has ever been decided on the basis of theory, either"; "Frisch's Restatement: Never let the facts stand between you and the right answer"; "McCaleb's Policy Prescription Principle: All policy impli-

cations drawn from economics are matters of faith.”<sup>10</sup> Laboratory humor sustains all modernist scientists in their madness. The genre of the Humorous Law, after all, was invented by engineers, and even physicists have their fourth and fifth laws of thermodynamics: no piece of experimental apparatus works the first time it is set up; no experiment gives quite the expected result.<sup>11</sup> But the jokes in the physical sciences appear to corrode morale less than those in economics. The *Journal of Irreproducible Results* laughs regularly at the pomposities of Science (and pomposity is the target of similar pieces in the humanities, such as the classics<sup>12</sup>), but the humor takes a nasty turn when it touches certain fields: economics, sociology, and medicine, in all of which a methodology has taken an unusually fetishistic form. The neuroses produced by attempts to make life, especially human life, fit into a methodology that did not describe well the seventeenth-century physics for which it was designed breaks out from time to time in unpleasant ways, far removed from joking: in the biological sciences, for instance, in occasional fraud. One wonders about similar pressures in economics. The nervous little jokes that young American economists tell around the watercooler are outlets for anxieties too painful to admit. Freud knew.

The joke, of course, is on the Official Method. The ridiculousness of it all may be seen by locating Method in a hierarchy of metaeconomics, from shopfloor to boardroom. At the bottom stands method with a small *m*, ever humble and helpful, something no reasonable person would ever complain of or even joke much about. It tells the economist what to do when her data have been selected in a particular sort of biased way or what to do when she can't think of reasons for price and quantity to change in a certain market. It tells her, rather badly, how to write scientific prose, and, pretty well, how to grasp a situation in which profits remain to be earned by new entrants. Following Joan Robinson, economists call these their box of tools, namely, economic theory in its verbal and mathematical forms, statistical theory and practice, familiarity with certain accounting conventions and certain statistical sources, and a background of stylized historical fact and worldly experience. The use of such tools to fashion sturdy little arguments is the *métier* of the economist.

Far above method with a small *m*, at the peak of the scholarly enterprise, stand the conversational norms of civilization. Jürgen Ha-

bermas and the tradition he comes from call these *Sprachethik*.<sup>13</sup> Don't lie; pay attention; don't sneer; cooperate; don't shout; let other people talk; be open-minded; explain yourself when asked; don't resort to violence or conspiracy to push your ideas. Good conversation or good intellectual life is unimaginable without these, for they are the metarules implicitly adopted by the mere act of joining what the culture thinks of as a conversation, whether among economists about how to manage the economy or between parents about how to manage their teenager. Socratic dialogue at its best—that is, when his interlocutors are permitted to say something besides, “So it would seem, Socrates”—has been the model of the best intellectual discourse. That we don't always follow the model is considered blameworthy, but no reason to abandon it as a norm. Cynicism about it is widely considered to be evil. The worst academic sin is not to be illogical or badly informed but to show cynical disregard for the norms of scholarly conversation.<sup>14</sup>

In between the top and the bottom, an overfed middle manager in a green suit with a row of ballpoint pens in his breast pocket, well below the cool majesty of *Sprachethik* and well above the workaday utility of method with a small *m*, stands Methodology. Because it cannot claim to give specific practical advice, it is not “method.” Because it does not claim that it can speak well in our culture, or in economics, it is not *Sprachethik*. It is Methodology, an alleged generalization from particular fields, especially scientific fields, to a science of science in general. What is laughable about it is that, like the *bourgeois gentilhomme* in society at large, it is at once both master and slave, and inclined, therefore, to hypocrisy and double-talk, to humility and pomposity—at the feet of one class and at the throat of another.

The schools of economics vary in their attachment to, say, quantification, but all are Methodologists. A Marxist Methodology, for example, would have rules such as, *The history of all hitherto existing society is the history of class struggle; Use statistics, which are scientific; Beware of remarks infected by false consciousness.* Neo-classical Methodology, the dominant one in the English-speaking world, would say, among other things, *The history of all hitherto existing society is the history of interactions between selfish individuals; Use statistics, which are scientific; Beware of remarks that are nonfalsifiable or nonobservable.* Austrian Methodology would say,

*The history of all hitherto existing society is the history of interactions between selfish individuals; Never use statistics, which are transitory figments; Beware of remarks that do not accord with Austrian Methodological precepts.*

Similar rules pertain to other modern schools, or to more subtly divided subschools among them. All share the mad Cartesian idea that practice according to the whatever-it-is below *Sprachethik* and above plain method will give a great harvest of truth.

Most defenses of Methodology get whatever force they have by stealing prestige from *Sprachethik* or utility from method. The reply, for instance, that "you *must* have a methodology hidden *somewhere*" is practically true only if the Methodology takes over the practical rules of method, and is morally true only if it takes over the moral rules of *Sprachethik*. It is a poor thing when out on its own. The wider case against Methodology has been made elsewhere.<sup>15</sup> Part of the case against it is its startling leap, full grown, from the brow of Descartes.<sup>16</sup> The Whiggish theory of scientific history that attributes the success of physics, chemistry, and biology to the application of Scientific Methodology à la Descartes looks strained beside the accumulating evidence that scientists think like human beings, too.<sup>17</sup> In actual practice, Methodology serves merely to demarcate the nice us from the nasty them; it demarcates "science" from "nonscience." Once we have properly marked off non-sciences like astrology, psychoanalysis, acupuncture, nutritional medicine, Marxist economics, spoonbending, or anything else we do not wish to discuss, we can get on with it clear and cool in mind.<sup>18</sup> Methodology and its corollary, the demarcation problem, are ways of stopping conversation.

All this sciencetalk is fruitless and offputting. Economics is literary, too. Saying that something is "literary" means that one can speak of it as people speak about drama, poetry, and novels, and the study of them. The statement "Economics is scientific" implies that things can be said about economics and economies that use mathematics; that economics will emulate the rhetoric of controlled experiment; that economics will have "theorems" from mathematics and "findings" from experiments; that it will be "objective"; and even that the world it constructs, to use Nelson Goodman's way of talking, will have a certain character, captured in the penetrating phrase, "the unreasonable effectiveness of mathematics." All these

implications about economics are true. But equally true is another set of implications, usually and erroneously thought to be antithetical, derived from the sentence, "Economics is literary."

The literary character of economics shows at various levels, from the most abstract to the most concrete, from Methodology to the selling of diamonds. Methodology comments on workaday method (the so-called box of tools), method in turn comments on economics as a body of thought, and economics comments on the economy. One can make literary remarks about each of these levels.

For example, the workaday methods of economic scientists are literary, since the scientific paper is, after all, a literary genre, with an actual author, an implied author, an implied reader, a history, and a form.<sup>19</sup> When an economist says, as he frequently does, "The demand curve slopes down," he is using the English language, and if he is using it to persuade, as he frequently is, he is a rhetorician, whether he knows—or likes—it or not. A scientific paper—and the assertions within it, such as this Law of Demand (that when the price of something goes up, the demand for the something goes down)—does literary deeds. The economic scientist is a linguistic actor, and to his performance can be applied the dramatic notions of Kenneth Burke or the philosophers J.L. Austin and John Searle. Scientific assertions are speech-acts made in a scene of scientific tradition by the scientist-agent, through the agency of the usual tropes, for purposes of describing nature or mankind better than the next fellow. Searle's analysis of the Law of Demand for gasoline would go as follows:

The *utterance act* (speaking): "the di-mand' kurv fôr gas' e lën' slôps down."

The *propositional act* (logic): "The demand curve for gasoline (referent) slopes down (predicate)."

The *illocutionary act* (rhetoric, argument, attempt to persuade): "Believe me, the demand curve for gasoline slopes down."

The *perlocutionary act* (the reader's response, the result of the illocutionary act): "By God, you're right: the demand curve for gasoline does slope down."

The error is to think that one is engaged in the propositional act, which is a matter of formal logic, when in fact one is engaged—all day, most days—in illocutionary acts, which are rhetorical. The pragmatists, too, said this. Propositions are to be judged by their effects or, as it was put by William James, with (as Burke noted) “disastrous felicity,” their “cash value.” Scientists are trying to persuade other scientists when they affirm a Law. The way they do this draws mostly on the common topics of argument such as one might see in *Areopagitica* or “A Modest Proposal for Preventing the Children of Ireland from being a Burden to their Parents or Country.” Consider the good reasons that economists believe the Law of Demand to be persuasive:

- Certain very sophisticated statistical tests, in which every allowance has been made for possible biases and incompleteness, have often resulted (after a good deal of hand-wringing and squeezing of the computer) in the diagonal elements of certain matrices being negative at the 5 percent level of significance. These painfully complete imitations of the astronomer’s most careful observations are known among economists, from the location of the observatory, as those of the Rotterdam School.

- Cruder and less well-controlled observations of certain commodities, especially agricultural commodities such as feed corn, have usually resulted in negative coefficients on price. These are known as Iowa School results, from the invention at Iowa State University of quantitative agricultural economics. But the chief result of the culmination of this work, the study by Houthakker and Taylor of all commodities in the American economy, was that the Law was not powerful; that demand often did not fall much when the price rose, and sometimes did not respond at all.

- In recent years, a few actual experiments have been run, with animal and human subjects, and they have often rejected the Law.<sup>20</sup>

- Introspection is quite persuasive. In asking himself, “What would I do if the price of gasoline doubled?” the economic scientist, if properly socialized in economics, will answer, “Consume less.” In the same way, a poet might ask what she might do if she saw heather or a wave, or a textual critic might ask how he would react to a line

of Catullus if “*quod, o patrona virgo*” were emended to “*quidem est, patroni ut ergo*.”

- Thought experiments are persuasive, too. The economic scientist, in view of his experience of life and knowledge of economies, asks what other people might do if the price of gasoline doubled. In the same way, a novelist might ask how Huck would respond to Jim’s request to come up on the raft, or a critic might ask how likely it is that Spenser would have arranged “Epithalamion” in the precise cycle of the year.

- Actual cases will have weight, as when the large rise in gasoline prices after the embargo caused consumption to decline in the face of predictions from noneconomists that it would not. In the same way, Booth notes, “the most sensitive book-length theological account . . . lacks something that men know together, when in answer to the question, ‘What is the life of man?’ they answer, ‘There was once in Bethlehem . . .’”<sup>21</sup>

- Businesspeople, with the incentive of profit to know, believe the Law is true because they cut prices when they wish to stimulate demand. What mere professor would dispute such testimony? The argument is *ad hominem*, from the very character of its target, in the same way that a literary critic might defend the authority of the author (who has an incentive to know what he means) against the claims of the reader as playful maker of his own text or of the text itself as semantically autonomous.

- The authority of scientific tradition is a proper argument in economics as elsewhere (though “proper” does not mean “irrefutable” or “conclusive”). If many wise economists have long affirmed the Law of Demand, what mere latecomer would dispute their testimony? Science or scholarship cannot be cumulative if every question is reopened every ten years. In the same way, Keats acceded to the tradition established by Virgil, and carried on by Spenser and Milton, of beginning a poetic career with pastoral verse; and the New Criticism worked in its tradition for many years, undisturbed by thoughts of biography or reader.

- Very commonly, and even to some degree here, symmetry will be a persuasive argument. If there is a Law of Supply (and there is

ample reason to think there is), it is hard to resist the charm of a Law of Demand to match it. In the same way, the critic will search for the structure behind the symmetry he feels in "Ode to a Grecian Urn," and find it in a symmetry of beautiful act and truthful scene.

- Mere definition is a powerful argument for the Law, since a higher price of gasoline leaves less, by definition (in one definition), for other expenditures. Since less gasoline is bought when expenditure overall declines, the demand for gasoline declines. In the same way, the critic can define the elements of discourse as act, scene, agent, agency, purpose, leaving less for nondramatistic metaphors of interpretation.

- Finally, and most important, there is analogy. That the Law of Demand is true for ice cream and movies makes it much more persuasive that it is true for gasoline. Analogy gives the Law its majesty, for economists claim that it applies therefore to all manner of things and nonthings, to love, to status, and to political power. In the same way, the critic can argue that a technique of understanding that works for poems will also work for novels, to the extent that poems and novels are analogous, and the poet and novelist themselves can exploit analogy for ironic comment or thematic development or portrayal of character.

These are all good reasons for believing the Law of Demand, but only the first three are scientific by the dichotomous definition of modernism. The other eight are artistic, literary, rhetorical. The modernist will try to reduce the eight to the three, but he might better be employed reducing the three to the eight: it is easier to see how the efficacy of general equilibrium, simultaneous equation, three-stage least squares methods of fitting complete systems of demand equations depends on the authority of the traditions about error terms or the appeal of symmetry as an aesthetic principle of specification than to see how analogy and introspection can be reduced to econometrics. Close scrutiny of the arguments on the scientific, hard, numerical side of the demarcation line will reveal them to be as humanistic, soft, and verbal as the rest.

In any event, it will be apparent that arguments fitting a modernist Methodology are not the whole story. As an empirical matter in this case, in fact, they are a rather small part of the story. Few econo-

mists would place more than 15 percent of their confidence in the Law of Demand on the first three reasons in total, leaving 85 percent to literary as against scientific rhetoric. One can test whether this is true by asking any economist, who will testify to its truth by introspection. Or one can observe what arguments an economist uses when trying to convince unbelievers, such as students. Much of his argument will rely on introspection, and he will encourage the students to examine their own introspections and improve them by critical thinking. He will exhibit the few cases he can remember, especially the more extreme ones, such as the oil crisis, and will try to build on analogy with products that the students do believe follow the Law. For the rest, he will appeal to the identity of convex utility functions and the authority of the scientific tradition. No matter how sophisticated the class is, it will be a rare teacher—and then, only one bewitched by modernist incantations—who relies much on the econometric results from the data mine and its miners.<sup>22</sup>

Economic scientists, then, persuade with many devices, and as rhetoricians have an audience. They do not speak into the void: the rhetorical character of science makes it characteristically social. Burke points out that "a man is necessarily talking error unless his words can claim membership in a collective body of thought."<sup>23</sup> The final product of science, the scientific article, is a performance of a certain sort, often disingenuously so.<sup>24</sup> In economics, certainly, it is no more separated from other literary forms by epistemology than the pastoral poem is from the epic. Epistemology is not the point. Or, rather, the point is that the epistemology of economic science must be construed more broadly if it is to be construed well. It is not scraps from the table of the logicians and statisticians, cooked up by certain Austrian philosophers of science into a gruel insufficient to nourish a child in science, but a collection of arguments, a Socratic dialogue, a rhetorical feast for adults as rich as human persuasion can make it.

The activities of economic scientists are *about* economic theory. But the theory itself is also literary—and scientific, the point being that there is no useful demarcation. The most obvious of the literary devices used in economic theory is the metaphor.<sup>25</sup> Economic theory uses metaphor not as an ornament but as an engine of analysis, especially in its most mathematical fields. Noneconomists find it easier to see the metaphors than do economists, habituated as the latter are

to the idea that of course production comes from a "function," and that of course business moves in "cycles." Certain of the metaphors are perfectly self-conscious, as revealed, for instance, by the exultation or irony with which the "invisible hand" is handled. And everyone understands that a metaphorical question is at issue when it is asked whether a mechanical or a biological analogue best suits the economy.<sup>26</sup> Some economists, again quite self-aware, make their contributions to the field by thinking metaphorically in ways that no one can mistake: Albert Hirschman, for instance, with his exits and voices; or J.K. Galbraith with his countervalences. But few recognize the metaphorical saturation of economic theories thought to be quite literal. Jacob Bronowski noted that the scientist needs "the exploration of likenesses; and this has sadly tiptoed out of the mechanical worlds of the positivists and the operationalists, and left them empty. . . . The symbol and the metaphor are as necessary to science as to poetry."<sup>27</sup> One might better say that even positivists and operationalists are tied to metaphor, the metaphor of "objectivity," for instance, and in any case, the metaphors of their discipline. Richard Rorty had it more right: "It is pictures rather than propositions, metaphors rather than statements, which determine most of our philosophical [and economic] convictions."<sup>28</sup>

To quantitative intellectuals, it is evident that the great intellectual achievement of the nineteenth century was physics; to literary intellectuals, it is equally evident that it was, the novel aside, linguistics. The styles of thought considered to be prestigious are determined by whether they adhere to one or the other of these two models of success—setting aside the miraculous discovery, late in the nineteenth century and more characteristic of the twentieth, of how things really were in the past, which came from the professionalization of history, or of how things are now and forever shall be, which came from the professionalization of social science. Both the quantitative and literary achievements were amazing, and one would not like to be forced to choose between them on grounds of comparative amazement. Thermodynamics and field theory are no less amazing than the decipherment of tongues long dead, the collection and comparison of hundreds of languages, and Saussure's reconstruction of the Indo-European vowels (confirmed—in a way as spectacular as Maxwell's equations were by Hertz's discovery of radio waves in 1885—by Hrozný's decipherment of Hittite in 1917). Some hu-

manists have forgotten, and most scientismists have never learned, the hard coming of literary culture. From Petrarch and Politian, Bessarion and Bentley, through the great philologists of the nineteenth century, the literary fields attracted the best minds and earned the most intellectual prestige, somewhat as particle physics and pure math do today.

Since Paul Samuelson's *Foundations of Economic Analysis* appeared in 1947, economics has looked to nineteenth-century physics for models. Perhaps it should try nineteenth-century linguistics. The notion was uppermost in the mind of the great founder of modern linguistics, Ferdinand de Saussure, who devoted many pages of his *Course in General Linguistics* to the analogy between economics and his new linguistics.<sup>29</sup> It is notable that another professor in Switzerland, someone as important for economics as Saussure was for linguistics, Leon Walras, flourished at the same time and had nearly identical ideas about the salience of what economists would call cross-sectional and comparative static thinking. The motto of both was, "Everything touches everything else, today." Saussure distinguished two approaches to society, the diachronic and the synchronic. The diachronic was the historical, dynamic, or, as statisticians would say, time-series approach typical of the linguistics of his day. It traced the history of words and grammar, showing how Latin *calidus* became by stages French *chaud*. But Saussure noted that a speaker of French in 1910 did not need to know any of this to communicate with other speakers: he needed to know only the system of oppositions and analogies extant in 1910 that allowed one to distinguish *chaud* from *froid*. A historical linguistics, in other words, interesting though it was in its own right, could shed no light on how people used language at any one time. What was needed was a synchronic linguistics, an ahistorical, static, cross-sectional account of how one Frenchman speaks to another. The two linguistics were unrelated and had to be: it would make no difference to the speaker if he had been left with "heiss" or "hot" instead of "chaud," so long as he could keep the opposition of the word for hot against *froid* (and against various other things, such as French for "luke-warm"). Synchronic and diachronic linguistics, in Saussure's view, had to be entirely separate sciences, one aligned along the "axis of successions," the other along the "axis of simultaneities." "For a science concerned with values," said Saussure, "the distinction is a

practical necessity and sometimes an absolute one. In these fields scholars cannot organize their research rigorously without considering both co-ordinates and making a distinction between the system of values per se and the same values as they relate to time." And later: "The opposition between the two viewpoints, the synchronic and the diachronic, is absolute and allows no compromise."<sup>30</sup>

The point, which Saussure himself made quite clear,<sup>31</sup> is that classical and especially neo-classical and Austrian economics are synchronic. Indeed, they fit his recommendation for a fresh organization of the linguistic sciences so closely that one imagines that the economics of Karl Menger and William Stanley Jevons was the model. Both economics and synchronic linguistics are theories of value, that is to say, theories of psychological attitudes attached to things (whether lexical or woolen things, whether *chaud* the word or sweater/pullover the object). In economics, as in such a linguistics, the exact matching of material and person does not matter: it does not matter that a particular grain of wheat from the Kansas farm of George Hersch finds its way to the dinner table of David Mitch in Baltimore, no more than it matters that *chaud* rather than *heiss* represents in French the character of stoves that makes them painful for Baby to touch. What matters is that a grain gets off the farm and onto the table, or that there is *some* sign for hotness. Saussure's famous example of the 8:25 express from Geneva to Paris makes the point in a way that will elucidate it for economists.<sup>32</sup> He pointed out that "the" 8:25 is, for purposes of travel, "the" same train every day, even though it is never the same in physical make-up. The cars, the personnel, even the exact time of departure may vary (the last not very much in the Switzerland of Saussure's day), and most fundamentally of course, a car a day older is not the car it was yesterday. Yet the train *is* the same, defined by its opposition to other trains and its uses in the mental worlds of its passengers. In like fashion, the economics dominant in the English-speaking world is powerfully oriented away from such matters as the exact makeup of pairings in the marketplace or the origin of a particular product. It will not digest ideas of embodied labor, the history of institutions, the dependence of a particular demander on a particular supplier, or anything else along the axis of successions.

The comparison suggests why, during the history of economics, the various projects to make the subject dynamic, to bring it into real

time, to give it a historical perspective, to find out how much labor power is embodied in surplus value, have failed to deflect it from its static purity. Marxism, the German Historical School, Institutionalism new and old, all have been trying to graft diachronic limbs on a synchronic tree. The limbs keep falling off, to grow and flourish perhaps by themselves, but not as offshoots of the tree of analysis descended from Mandeville and Smith.

This does not mean that economic history is useless for economic studies as a whole, any more than historical linguistics is useless for linguistic studies as a whole. The same can be affirmed of the Marxist's political economy or the sociologist's history of institutions. The knowledge of economic history or economic politics or economic institutions is in this view the material for synchronic thinking. It becomes part of what the chemist and philosopher Michael Polanyi called the "tacit knowledge" about which the theorizing speaks. Synchronic theories such as neo-classical economics or Saussurean linguistics are suitable for mathematization. Polanyi wrote:

A mathematical theory can be constructed only by relying on *prior* tacit knowing and can function as a theory only *within* an act of tacit knowing, which consists in our attending *from* it to the previously established experience on which it bears. Thus the ideal of a comprehensive mathematical theory of experience which would eliminate all tacit knowing is proved to be self-contradictory and logically unsound.<sup>33</sup>

That is to say, the chemist or economist must start with some attractive-looking gunk in a test tube or a story about how a particular economy has developed, with conceptions about which he has a tacit, experiential, linguistic *grasp*. The experience—in literary terms, the narrative (or in novelistic terms, perhaps, the dialogue)—is the phenomenon to be theorized about. One must have a direct grasp of the subject in order to have something to be synchronic about.

So much, then, for examples of literary thinking applied to economics. When confronted with the sentence "Economics is literary," however, only an economist would think first of applying it to the behavior of economists themselves or to the structure of economic theory. What occurs first and last to a noneconomist is that it could be used on the economy. Surely, here is an opportunity to get

rid of that great stick of a character, Homo Economicus, and to replace him with somebody real, like Madame Bovary.

Perhaps. Economists have from time to time inquired at the psychology shop for premises of behavior richer than greed, but have found none to their liking. The experimental psychologists, in their own way even more madly scientismic than the economists, have stick figures of their own for sale, and few enough buyers. Other branches of psychology have nothing to say about the matter (cognitive psychology) or too much (Freudian and related psychologies). Perhaps departments of English or communications could set up as purveyors of behavioral assumptions—as they already have done, with commendable success, with the philosophy the departments of philosophy refuse to do.

Some literary critics have been bold enough to begin. An economist hearing someone talking about “human action” (as distinct from “mere motion” such as the tides have), attacking the behaviorist hallucination that man is a large rat, emphasizing the “purpose-ness” of human affairs, and bringing this together with a declaration that “the resultant of many disparate acts cannot itself be considered an act in the same purposive sense that characterizes each one of such acts (just as the movement of the stock market in its totality is not ‘personal’ in the sense of the myriad decisions made by each of the variously minded traders)” —an economist hearing all this would think himself in the presence of an Austrian economist: Hayek, say, or Ludwig von Mises, or some approximation *sui generis* such as Frank Knight. But he would in fact be in the presence of the doyen of American critics, Kenneth Burke.<sup>34</sup> The parallels between Burke’s thinking and Austrian economics are remarkable—the more so since their politics otherwise do not appear to match—although there are no apparent channels of mutual influence.

Whether literary thinking will shed light directly on economic behavior is an open question. Some anthropologists think in a literary fashion about all manner of behavior, part of it economic. But the way from these to the lovely paradoxes of aggregation, theorems of welfare, and equations of demand and supply that make economics so unique and successful as a social science is not clear. That is a problem for another time.

What I am sure of is that, as Thomas Kuhn once said, “we have only begun to discover the benefit of seeing science and art as one.”<sup>35</sup>

The main benefit will be the return to a lost impulse in our civilization, last seen wandering off with Leonardo, the impulse not merely to combine the two, which are today considered as distinct, but, as Kuhn says, to see that they are *not* distinct. He warns that seeing both together can be overdone, but the warning is unpersuasive. An unpersuasiveness in this demarcation is widespread. When novelist John Gardner tries to put some distance between science and art in his otherwise persuasive *On Moral Fiction*,<sup>36</sup> he misunderstands science as something mechanical and objective. When Steven Weinberg, at the beginning and end of a very persuasive treatment of “Beautiful Theories,” tries to do the same, he mixes up the beauty felt by the poet (which is indistinguishable from the sense of beauty felt by the poet of nature, the physicist) with the beauty felt by the nonpoet reader of the text. When literary critic Gerald Bruns tries in some characteristically persuasive talk to distinguish the study of literature from the study of nature or society, and remarks that literature resists our theories of meanings, he forgets that nature and society are texts that are just as resistant. Even very cultivated scientists and litterateurs treat science and art as two disjunctive ways of seeing, recommending, then, a sort of binocular vision in their pairing.

A rhetoric of science, however, shows how similar the arguments are, whether stories or analogies or appeals to authority. The special topics of economics differ from those of literature, to be sure, but even they can be broken down into atoms of argument interchangeable among fields. And the general topics are identical, used in differing proportion as the particular case may demand. We are all talkers, hardwired, perhaps, for such and such a transformational grammar, software, surely, by our cultures in specific and general ways. Scholars are talkers, too. A field of thought is special, after all, not because it has a certain Methodology—for these dissolve into tropes common to all persuasion—but because the conversation has a special subject, such as medieval economic arrangements or Latin poetry books, and because the conversation today, after what has gone before, has reached the point that it has.

## ENDNOTES

The essay was first delivered as a talk to the Social Science Seminar at the Institute for Advanced Study in Princeton in November 1983. Seminars at the University of Virginia and Union College in Schenectady have listened patiently to versions of it, as did the Iowa Symposium on the Rhetoric of the Human Sciences, in March 1984. I would like to thank the Institute for Advanced Study, the John Simon Guggenheim Foundation, and the Program in Humanities, Science and Technology of the National Endowment for the Humanities for support. The essay is part of a forthcoming book, *The Rhetoric of Economics*.

<sup>1</sup>Kelvin, *Popular Lectures and Addresses*, vol. 1 (London: 1889-91), p. 73.

<sup>2</sup>I rely for these assertions on Dominique Schnapper, Wolf Lepenies, and Albert Hirschman. Janos Kornai, Giovanni Levi, Teofilo Ruiz, and Axel Leijonhufvud assure me that the same can be said of Hungarian, Italian, Spanish, and Swedish. The word "science" began to be used in the honorific sense in English only in the nineteenth century. The earliest citation in sense 5b of the *Oxford English Dictionary* (the *Supplement* describes it now of course as "the dominant sense in ordinary use") is 1867, W.G. Ward in the *Dublin Review* for April, p. 255n: "We shall . . . use the word 'science' in the sense which Englishmen so commonly give to it; as expressing physical and experimental science, to the exclusion of theological and metaphysical." Earlier it meant "studies," as in "classical studies"—*Altertumswissenschaft*, in German. One cannot in English imagine "classical science." The Wildhagen/Héraucourt German dictionary (1972) gives *die klassische Wissenschaft* as "humanities" (clearly, in the older sense of the English word) and *die philologisch-historische Wissenschaften* as "arts" (in the British academic usage, as against, again, "science").

<sup>3</sup>"Beautiful Theories," revision of the Second Annual Gordon Mills Lecture on Science and the Humanities at the University of Texas, April 5, 1983, p. 20. From 1967 to 1971 his theory was considered too ugly to test. He points out that no one would have financed the British expedition to the South Seas in 1919 to test Einstein's theory had it been ugly.

<sup>4</sup>Burke, *The Rhetoric of Motives* (Berkeley: University of California Press, 1969), p. 58.

<sup>5</sup>Cf. James Willis, *Latin Textual Criticism* (Champaign, Ill.: University of Illinois Press, 1972), p. 24 on stemmatic theory, and p. 42 on the theory of errors. Anyone who believes that the study of literature leads to a softening of the mind and mettle should be made to read this book, supplemented by L.D. Reynolds and N.G. Wilson, *Scribes and Scholars: A Guide to the Transmission of Greek and Latin Literature*, 2d ed. (Oxford: Oxford University Press, 1974), and A.E. Housman, "The Application of Thought to Textual Criticism," in *Selected Prose*, edited by J. Carter (Cambridge: Cambridge University Press, 1961). The height of this sort of thing is John G. Griffith, "A Taxonomic Study of the Manuscript Tradition of Juvenal," *Museum Helveticum* 25 (1968): 101-38.

<sup>6</sup>Booth, *Modern Dogma and the Rhetoric of Assent* (Chicago: University of Chicago Press, 1974), p. 103.

<sup>7</sup>*Ibid.*, p. 13.

<sup>8</sup>Richard Rorty, *The Consequences of Pragmatism* (Minneapolis: University of Minnesota Press). The arrival of intellectuals fleeing interwar Europe in fields as varied as philosophy and architecture killed off characteristically American, Midwestern, and milder versions of modernism in favor of a harsher European type.

<sup>9</sup>It is hard to disbelieve the dominance of modernism in economics, but an objective, quantitative test would of course make it, or any assertion, more believable. A proper sampling of referee reports of the *American Economic Review* would be a good test, watching out for the use of the modernist ukase ("Never ask business people what they are doing: they cannot tell the truth"; "Measure things regardless").

<sup>10</sup>I am indebted to Thomas McCaleb of Florida State University for letting me use this document. His "Capsule Contributions of Nobel Prize Winners in Economics" (example: "Paul Samuelson, 1970: Men are molecules and economics is thermodynamics") is hard to imagine in physics, mathematics, or other fields more sure of their methodological ground.

<sup>11</sup>Thomas Kuhn, *The Essential Tension: Selected Studies in Scientific Tradition and Change* (Chicago: University of Chicago Press, 1977), p. 184.

<sup>12</sup>Marleen Boudreau Flory, "Semantics and Symbioses: How to Write an Article to Impress Your Peers," *Chronicle of Higher Education*, January 26, 1983.

<sup>13</sup>Habermas, *Legitimation Crisis* (1973; in translation, Boston: Beacon Press, 1975), p. 110.

<sup>14</sup>This talk of conversation as a description of intellectual life comes, of course, from Rorty (*The Consequences of Pragmatism*, pp. 165, 172; *Philosophy and the Mirror of Nature* [Princeton: Princeton University Press, 1979], pp. 163, 170, 318, 371, etc.), and from Polanyi (*Knowing and Being* [Chicago: University of Chicago Press, 1969], p. 84f and elsewhere), and Habermas as cited.

<sup>15</sup>Paul Feyerabend, *Against Method: Outline of an Anarchistic Theory of Knowledge* (London: Verso, 1978); Rorty, *The Consequences of Pragmatism*; and for economics, Donald McCloskey, "The Rhetoric of Economics," *Journal of Economic Literature* 21 (June 1983): 481-517. Husain Sarkar's *A Theory of Method* (Berkeley: University of California Press, 1983) is a sophisticated defense of Methodology, which nonetheless argues against adopting a uniform one. A similar pluralism in a pro-Methodological work in economics appears in Bruce Caldwell's *Beyond Positivism: Economic Methodology in the Twentieth Century* (London: Allen and Unwin, 1982).

<sup>16</sup>J.A. Schuster, "The Developmental and Structural Demystification of Descartes' Method," unpublished paper, Department of History of Science, University of Wollongong, Australia, 1983.

<sup>17</sup>Gerald Geison, of Princeton University, is writing a book on Pasteur that illustrates the lamentable humanness of even a great scientist. Support for this unsurprising proposition comes from an impeccable source, T.H. Huxley, in *Modern Rhetoric*, edited by Cleanth Brooks and Robert Penn Warren (Harcourt, Brace, 1949), p. 559: "To hear all these large words you would think that the mind of a man of science must be constituted differently from that of his fellow men; but if you will not be frightened by terms, you will discover that all these terrible apparatus[es] are being used by yourselves every day and every hour of your lives."

<sup>18</sup>Cf. a book on Uri-Gellerish spoonbending, Harry M. Collins and T.J. Pinch, *Frames of Meaning: The Social Construction of Extraordinary Science* (London: Routledge and Kegan Paul, 1982). One can understand and even sympathize with the fixation on the Demarcation Problem among the older generation of observers of science, especially Europeans, and most especially Central Europeans. Axel Leijonhufvud, an economist who, in collaboration with Earlene Craver, has interviewed many of the Austro-Hungarian economists of the pe-

riod, interprets it as a reaction to interwar irrationalism, a candle of clarity in the storm. The candle, to be sure, was lit rather earlier: the Kelvin quote above is one of many that could be assembled from the nineteenth century declaring Science to be epistemologically special. But it cannot be denied, as the point has been put to me, that a Demarcation has great and good uses in political circumstances threatening to free inquiry. The local apparatchik thinks he can see what is wrong in an analogy or an introspection but does not know how to contradict a syllogism or a statistic. But the political problems of Austrians in the 1930s or Russians in the 1980s are not ours.

<sup>19</sup>See Charles Bazerman, "What Written Knowledge Does: Three Examples of Academic Discourse," *Philosophy of the Social Sciences* 11 (September 1981): 361-87; Bazerman, "Early Developments in Argumentation in Physics," unpublished paper, English Department, Baruch College, CUNY, n.d.; Bazerman, "Modern Evolution of the Experimental Report in Physics: Spectroscopic Articles in *Physical Review*, 1893-1980," forthcoming, *Social Studies of Science*. I have attempted some of this for economics: "The Character of Argument in Modern Economics: How Myth Persuades," in *Argument in Transition*, edited by D. Zarefsky, M.O. Sillars, and J. Rhodes (Annandale, Va.: Speech Communication Association, 1983), pp. 170-87 and an unpublished piece, "The Problem of Audience in Historical Economics: Rhetorical Thoughts on a Text by Robert Fogel."

<sup>20</sup>Raymond C. Battaglio et al., "Commodity Choice Behavior with Pigeons as Subjects," *Journal of Political Economy* 84 (February 1981): 116-51; Charles Plott of the California Institute of Technology has an experiment on humans that falsifies the Law of Demand.

<sup>21</sup>Booth, *Modern Dogma*, p. 186.

<sup>22</sup>Official econometric method is under attack these days and will not survive unchanged. Statistical significance, for instance, is looking less and less viable. This does not mean that economics will or should become nonquantitative. Cf. Edward E. Leamer, *Specification Searches* (New York: Wiley, 1978), Leamer, "Let's Take the Con Out of Econometrics," *American Economic Review*, 73 (March 1983): 31-43; and Donald McCloskey, "The Higher the Fewer: The Incomplete Rhetoric of Quantification in Economics and History" (unpublished manuscript), January 1984. A devastating criticism of classical statistical procedures has been made by Frank T. Denton, "Econometric Data Mining as an Industry" (McMaster University, October 1983). He points out that, even if each investigator rigorously follows the classical rule against data mining in search of significant nuggets, a group of such investigators gathered around the same vein of data will in time as a group produce results as meaningless as those from the most cynical individual miner of data. It is not hard to believe that the time has been reached with the Michigan tape or with the American quarterly national income statistics since the war.

<sup>23</sup>Booth, *Modern Dogma*, p. 86.

<sup>24</sup>Medawar, "Is the Scientific Paper Fraudulent?" *Saturday Review*, August 1, 1964, pp. 42-43.

<sup>25</sup>I treat this at greater length in "The Rhetoric of Economics," esp. pp. 502-8.

<sup>26</sup>See the works of Boulding and Georgescu-Roegen. An interesting paper by Janos Kornai explores "The Health of Nations: Reflections on the Analogy Between the Medical Sciences and Economics," *Kyklos* 36 (fasc. 2, 1983): 191-212.

<sup>27</sup>*Science and Human Values*, rev. ed. (New York: Harper Torchbook, 1965), p. 36.

<sup>28</sup>Richard Rorty, *Philosophy and the Mirror of Nature*, p. 12.

<sup>29</sup>Published posthumously in France in 1915, translated in 1959, and reprinted in 1966 (New York: McGraw-Hill), pp. 79ff and 115ff.

<sup>30</sup>*Ibid.*, pp. 80, 83.

<sup>31</sup>*Ibid.*, p. 79.

<sup>32</sup>*Ibid.*, p. 151.

<sup>33</sup>Polanyi, *The Tacit Dimension* (New York: Doubleday, 1966), p. 21.

<sup>34</sup>See his article "Interaction: Dramatism" in *International Encyclopedia of the Social Sciences*, p. 47.

<sup>35</sup>Kuhn, *The Essential Tension*, p. 343.