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Some Consequences of a Conjective Economics

Let a man get up and say, "Behold, this is the truth," and instantly I perceive a sandy cat filching a piece of fish in the background. Look, you have forgotten the cat, I say.

Virginia Woolf, *The Waves* (1931)

Arjo Klamer (1990) has a way of describing what is peculiar about modern economics. He draws a square to stand for the rigid, axiomatic method that dominates most journals in the field. The square, he points out, is the ideal shape of modernist architecture and painting, of Mondrian and Mies van der Rohe. Squares are about facts and logic. Show me the theorem. Then he draws a circle some distance from the square. Circles are about metaphor and story. Circle reasoning is the other half. Tell me your story. Since the seventeenth century, and especially during the mid-twentieth century, the square and the circle have stood in nonoverlapping spheres, sneering at each other.

Klamer's diagrammatic parable, of course, has a feminist interpretation. Whether or not there is any truth to it, the myth of our culture says that men do the squares and women the circles. Regardless of what men and women actually do statistically speaking, the claims about what they do exist as cultural objects. It may or may not be correct that women in our culture have deeper friendships than men. But in any case the stereotype exists and can be used to criticize a foursquare economics that has no room for friendships, deep or otherwise. It may or may not be correct that women communicate

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with stories of somebody's life, men with unnarrated facts such as astounding baseball trivia.¹ But in any case the stereotype can be used to criticize an economics that does not realize it depends on stories. The round, "feminine" arguments can be construed as "modes of argument suppressed by modern economics," which is square.

Klamer points out how crazy it is to insist that the only arguments that are really scientific are the square ones. Crazy, but common. His point can be put economically: argumentative styles, like countries, have different endowments and tastes; some trade between them would therefore be mutually advantageous.

That is, because men and women live somewhat differently they differ on average in their ways of approaching economics. The way certain women actually or might or should approach economics is good. Some of the limitations of economics can be traced to its square masculinity, understanding "masculinity" to be a cultural not a biological product. A feminine economics would in some ways be better. Above all, both modes of argument, round or square, should be available to economists, male or female, and both should be accorded scientific prestige.

That "feminine" qualities are not unique to women does not prevent an inquiry into a difference, as long as there is a notable difference on average. There is no need to take a stand on nature *versus* nurture to admit that for some reason men and women at present think rather differently, especially about society. The assertion is no more controversial than an assertion that Japanese and Americans at present think rather differently, especially about society. Yet women often think and act in ways that we stereotypically associate with men, and vice versa. Characteristics of women and men, Americans and Japanese, overlap, as in body weights and lengths of hair. We are mainly human beings, not women or Japanese. For most purposes a difference in gender or nationality is less important than what we have in common—human language, mathematics, history, social origin, passion, intelligence. For most scholarly purposes male and female economists have more in common with each other than with male and female classicists.

And yet the gender differences might be worth noting for describing the science. A "tetrad" in Greek is a set of four things. "Rhetoric" is the art of argument, good or bad, from Pythagoras to advertising. Sciences use four things to argue, the four of the "rhetorical tetrad": fact, logic, metaphor, and story. Half of the tetrad is the methodical dyad of fact and logic, that is, Klamer's square. The other half is the creative dyad of metaphor and story, Klamer's circle. But thinking requires both dyads, the whole tetrad: $2 + 2 = 4$ in a complete science. In truth, all four parts of the tetrad participate in me-

1. What major league pitcher retired every batter he faced for twelve innings yet lost the game? Answer: Harvey Haddix of the Pirates, May 26, 1959. He lost on an error, a walk, and a hit in the thirteenth inning. Wow!

thodicalness and in creativity. As it was put by the philosopher of science Mary Hesse, one of the early contributors to the new understanding of science, "rationality consists just in the continuous adaption of our language to our continually expanding world, and metaphor is one of the chief means by which this is accomplished" (1966, 176–77). Story, too. "We are storytelling animals," says Stephen Jay Gould, and shows the fact with the history of paleontology (1989, 70; 1980, ch. 3). All his works shows the storied character of evolution: "In the stereotyped image, scientists rely upon experiment and logic [—] a middle aged man in a white coat (most stereotypes are sexist). . . . But many sciences do not and cannot work this way. As a paleontologist and evolutionary biologist, my trade is the reconstruction of history" (1980, 27).

Pieces of the tetrad are not enough. The allegedly scientific and masculine half of the tetrad, the fact and logic, falls short of an adequate economic science, or even a science of stars or arthropods. The allegedly humanistic and feminine half falls short of an adequate art of economics, or even a criticism of form and color. Scientists, scholars, and artists had better be factual and logical. But they had also better be literary. The scientists had better devise good metaphors and tell good stories about the first three minutes of the universe or the last three months of the economy. A scientist with only half of the rhetorical tetrad is going to mess up her science.

It is easy to catch economists, as good scientists, in the act of using metaphors and stories for their science. Outsiders will find this easier to see than the economists will because the economists are trained to think of themselves as fact and logic users. They do not realize that they are also the poets and novelists of the ordinary business of life. To an outsider it is obvious that economists are using metaphors (analogies, similes, comparisons of one realm with another) when they speak of the demand "curve" for housing in New York City or the "human capital invested in a child, which is of course a durable good." It is obvious to the outsider that economists are using stories about a hog market once upon a time out of equilibrium or about the causes in the olden days of modern economic growth.

It is not an attack on economics to say that like other sciences it uses the whole of the tetrad. Let "God" be a metaphor of certitude beyond day-to-day persuasion (the God metaphor was lively and potent before the sea of faith receded, and nostalgia for its certitude remains). The truth is that not this "God" but we humans make the metaphors and tell the stories; not God but humans identify the facts and choose the logics (note the plurals). No part of the tetrad is wholly God-given and nonhuman, whether in physics or in economics. The models and histories in economics are not facts made by nature or logic immanent in the universe but words made by human art.

The art does not make them arbitrary; it merely makes them various. To admit that what we say in science is socially constructed is not to fall into

Valley-girl, touchy-feely relativism or to advocate anything goes. Niels Bohr, who was not a touchy-feely, said, "It is wrong to think that the task of physics is to find out how nature is. Physics concerns what we can say about nature. . . . We are suspended in language. . . . The word 'reality' is also a word, a word which we must learn to use correctly" (quoted in Moore 1966, 406).

In any event it is a crazy dualism to insist that *either* we merely read what God's Reality presents to us *or* we construct the world wholly without reference to the facts of the matter. The better model is fishing. The fish are there by God's command, and if they were not then no human ingenuity in making nets would bring them up. But likewise a sea full of fish does not feed humans without nets made by human hands. We need both to eat on Fridays.

A paleontologist, for example, is constrained by what in fact happened to life, and by what he thinks are relevant logics.² Nonetheless, with the same choice of fact and logic he can tell the story in varied ways—to use the words in paleontology, he can tell it as "gradualist" or "catastrophist." The movie can be run in dignified slow motion or in frantic lurches. The same sort of thing happens in economics. The workplace can be seen with a metaphor of conflict, as in Marxian economics, or with a metaphor of exit and entry to markets, as in neoclassical economics. How we judge the two depends on their fit with the facts, with the logic, with the story, and with the other metaphors we have found useful. The variety of metaphors and stories does not make all of them equally good or equally important for every purpose, any more than the variety of facts or logics makes all of them equally good or important for every purpose. No one is proposing, to repeat, that anything goes, merely that a life in science is more complicated than checking first-order predicate logic against uncontroversial facts. To criticize the varieties of facts, logics, metaphors, and stories you have to recognize that they are being constructed and postulated and imagined and told.

For about fifty years economists have believed themselves to be users only of fact and logic, the square rather than the circle, half of the rhetorical tetrad, the masculinist half. During the 1940s they shared belatedly in the temporary narrowing of Western culture called "positivism" or "modernism" (Booth 1974; Klamer 1990, 1987). Modernism has roots as deep as Descartes and Plato, but it became the whole of what we call thinking only in the early twentieth century. As Virginia Woolf said in 1924, "On or about December 1910, human character changed" (Woolf 1967 [1924], 320). Certain male philosophers in the West came suddenly to believe that their whole subject could be narrowed down to an artificial language; certain male architects narrowed

2. In the late twentieth century "logics," to repeat, are plural, like geometries. They are Aristotelian, first-order predicate, fuzzy, deontic, modal, relevant, multivalued, informal, epistemic, paraconsistent, and so on and so forth through the various ways that people can formalize what they are saying.

their whole subject to a cube; certain male painters narrowed their whole subject to a surface. Out of this narrowness was supposed to come insight and certitude.

Insight did come (not certitude, alas). After modernism in philosophy we know more about languages lacking human speakers. In architecture we know more about buildings lacking tops. In painting we know more about pictures lacking depth of field. When news of modernism got out to economics around 1940 it yielded some worthwhile insight, too. In economics after modernism, after the masculinist programs of Paul Samuelson and Tjalling Koopmans, we know more about economic models lacking contact with the world.

On the whole the narrowing did not work out very well. The failure of modernism in economics and elsewhere in the culture does not say it was a bad or stupid idea to try. And it certainly does not say that we should now abandon fact and logic, surface and cube, and surrender to the irrational. We are all very glad to keep whatever we have learned from the Bauhaus or the Vienna Circle or the running of rats. We in economics are all very thankful to Smith, Marx, and Marshall for inspiring those wonderfully theorems by Arrow, Robinson, and Samuelson. It says merely that we should turn back to the work at hand equipped now with the full tetrad of fact, logic, metaphor, and story.

The modernist experiment in getting along with fewer than all the resources of human reasoning puts one in mind of the Midwestern rural expression, "a few bricks short of a load." It means cracked, irrational. A masculinist economics, such as we have had in most refined form since the 1940s, is irrational. To admit now that metaphor and story also matter in human reasoning does not entail becoming less rational and less reasonable, dressing in saffron robes, or tuning into "New Directions." On the contrary it entails becoming more rational and more reasonable, because it puts more of what persuades serious people under the scrutiny of reason. Modernism was rigorous about a tiny part of reasoning and angrily (one might say hysterically) unreasonable about the rest. The typical article on international economics is arranged in the modernist form: scandalously vague motivation, rigorous middle, and vague, even reckless, "implications for policy."³

Modernism seized the word "science" for its purposes. In English the word for a long time has been a club with which to beat on arguments the modernists did not wish to hear. "Science" has been a verbal weapon within the intelligentsia. English speakers over the past century and a half have used it in a peculiar way, as in British academic usage, arts and sciences, the "arts" of literature and philosophy as against the "sciences" of chemistry and geology. A historical geologist in English is a scientist; a political historian is not. The

3. I have in mind some recent work by William Milberg (1991) and Hans Lind (1992), who have analyzed the rhetorical structure of typical articles in international economics.

usage in English would puzzle an Italian father boasting of his studious daughter, *mia scienziate*, my learned one. He does not mean that she is a nuclear physicist. Italian and other languages use the science word to mean simply "systematic inquiry," as do French, Spanish, German, Dutch, Icelandic, Norwegian, Swedish, Greek, Gaelic, Polish, Hindi, Bengali, Tamil, Hungarian, Turkish, Korean, and Hebrew. Only English, and only the English of the past century, has made physical and biological science (definition 5b in the old *Oxford English Dictionary* [Oxford, 1933]) into, as the *Supplement* (1982; compare *OED*, 2d ed., 1989) describes it, "the dominant sense in ordinary use." It would be a good idea to reclaim the word for reasonable and rigorous argument.

The English and modernist error, to put it another way, is thinking of science and literature as two cultures. The author of the phrase, the scientist-novelist C. P. Snow, can hardly be blamed, since he lived and wrote at the peak of an anxious masculinism in British and American science—evinced, for example, in the mistreatment of Rosalind Franklin in the uncovering of DNA. Literature since romanticism and most particularly since aestheticism was written off as airy-fairy. The very work of middle-class men was paper shuffling and feminine. Only tough science and Hemingwayesque literature could assuage their dread. As Barbara Laslett has argued persuasively in writing of William Fielding Ogburn (1886–1959), one of the founders of the Chicago school of sociology and in his uncertain youth an advocate of quantitative methods, "Science so defined simultaneously offered a cultural space to which men could aspire without threat to their masculinity and provided a gatekeeping mechanism that limited women's entry" (1990, 429).

The two-cultures talk is not written in the stars, though it is common enough and encouraged by the faculty and the deans. The dualism drips with sexist mythology, and the women co-opted by such dualism are not immune. A dean of research at a large state university gave a talk a couple of years ago in which she spoke of the humanities as what is left over after the (physical and biological) sciences, and then after them the social sciences, have expended their eloquence. The humanities in her mind are a residuum for the mystical and the ineffable, the stuff of circles, not squares. The dean, who was a social scientist, thought she was being good natured. The bad-natured remarks muttered from each side are worse: that if we mention metaphors we are committed to an arty irrationalism; that if we mention logic we are committed to a scientific autism.

One is tempted to shake them both and say, "Get serious." The sciences, such as economics, require supposedly humanistic and "feminine" methods in the middle of their sciences; likewise, the arts and humanities require fact and logic, right in the middle of their own systematic inquiries. It is not so much that metaphor is an alternative to fact (true though this sometimes is) as that

the construction of facts requires metaphors—for example, the metaphor of light as quanta, as against waves, is essential for certain measurements in physics. Without the metaphor no one would have thought to do the measurements. So, too, in economics: without the metaphor of the nation as a business enterprise the measurement of the "national accounts" would not happen; without the story line of "development" the historical measurement of income would not happen. The items in the rhetorical tetrad work together, each necessary for the job of the other. Leonardo da Vinci used stories and logic; Newton used logic and metaphors; Darwin used facts and stories. Science is literary, requiring metaphors and stories in its daily work.

Speaking of a science such as economics in literary terms, of course, inverts a recent and anxiety-producing hierarchy. Science is masculine and high status; art is feminine and low status; therefore, for God's sake, let's demarcate science from art. But contrary to the century-long program to demarcate science from the rest of the culture—a strange program when you think of it—science is after all a matter of arguing. The ancient categories of argument still apply. Satisfying stories are recognized in a complete psychology (Gergen and Gergen 1986; Bruner 1986); beautiful metaphors in a complete physics (Weinberg 1983); so, too, in economics after modernism (Klamer, McCloskey, and Solow, eds. 1988).

The dualisms square/circle, fact/story, logic/metaphor, science/art, numbers/words, cognition/feeling, rigor/intuition, truth/opinion, fact/value, hard/soft, positive/normative, objective/subjective may be useful as tentative descriptions. Certainly they come up a lot in methodological disputes, usually as conversation stoppers. But they are crazy when they are imagined, as the modern byword has it, to cut the universe at its joints. Such dualisms, it need hardly be emphasized, reenact the Mother of All Dualisms, male/female, as Julie Nelson, Ann Jennings, and others point out in their essays in this volume. Men insist on square, fact, logic, science, numbers, cognition, rigor, truth, hardness, positiveness, and the objective with a comical, anxious rigidity of the sort the comedian John Cleese makes fun of. The anxiety resembles nothing more than a man worrying that he might be taken for a woman.

The distinction objective/subjective, for example, does not withstand much scrutiny. The modern usage (a reversal, incidentally, of the medieval usage) was popularized by Kant in the late eighteenth century and came into English with Coleridge in the early nineteenth century. For scientific purposes it is useless. We cannot know what is objective, if it means the Reality that is in the mind of God. In the twentieth century we humans are alone with the universe and have to make of it what we can with our human ways of seeing and talking. Two-and-a-half millennia of attempts since the Greeks to vault to a higher realm in which we will *know* the objective, will have *solved* the problem of epistemology, will *hear* what God is whispering to us, have failed.

Similarly, we cannot know what is subjective, if it means the wholly personal place from which each of us looks out. We cannot, after Freud, know it even in our own minds, and certainly never completely in someone else's.

What we can and do know, to coin a term, is the *conjective*. It is neither the square nor the circle, neither the objective nor the subjective. It is what we know together, by virtue of a common life and language. It is what economists know about the definition of the money supply or the prevalence of marginal cost pricing. It is what men and women know in their conversations, together or apart. As the mathematician Armand Borel noted, for practical purposes "something becomes objective . . . as soon as we are convinced that it exists in the minds of others in the same form that it does in ours, and that we can think about it and discuss it together" (1983, 13). Helen Longino, quoted in the introduction to this volume, gives the same social spin to "objectivity": it is "dependent upon the depth and scope of the transformative interrogation that occurs in any given scientific community." For practical purposes, in other words, we have only the "conjective."

The conjective is the milieu in which Klammer's square and circle sit. Imagine an amoebalike shape encompassing both the masculine square and the feminine circle, a fluid of words and symbols in which the two must float. That is where science actually goes on, never in the square or the circle alone but in the conversations that surround them. The conversations are subject to rigorous appraisal, more rigorous than the phony rigor of wholly square proofs or wholly round faiths. We do it daily in a science like economics, assessing a new paper on the basis of its fit in detail with our earlier conversations.

All right, so what? What is to be gained by such talk? This: a conjective economics, which admitted the "feminine" alongside the "masculine," would be better science because it would be more complete and persuasive. It would constitute a higher standard for a science, one of coherence in story as much as in axioms; of relevance in Bureau of Labor Statistics questionnaires administered as much as in its regressions.

The prefeminist economics I can speak of most convincingly is the neoclassical, a hard case in all senses. Compared with other schools of economics the neoclassicals are notably butch. They are a motorcycle gang among economists, strutting about the camp with clattering matrices and rigorously fixed points, sheathed in leather, repelling affection. They are not going to like being told that they should become more feminine.

Looking at the economy from a conjective point of view, putting the allegedly feminine and the allegedly masculine into conversation with each other, will, I say, enrich neoclassical economics. The project is enrichment, not impoverishment. I would *not* argue that economics is worthless in its square and masculine moods. But even the "conservative" and Chicago-school econom-

ics that I espouse, which seems to me admirably masculine, is open to feminine revision.

The purpose, in other words, is to encompass and extend what has been learned from men, not to dynamite it unthinkingly. As was noted recently by J. A. Boone, a feminist critic of literature, "the solution isn't simply to discard all 'offending' texts. . . . If we are to hang on to our Norman Mailers as well as our Margaret Atwoods, we need a more sophisticated means of evaluation than simply judging a book's contents in terms of its 'political correctness'" (1988, 2). He's right. We want to hang onto our Gary Beckers as well as our Joan Robinsons.

At a modest level one can beat masculine economics at its own game (pardon me) by a more conjective choice of postulates. Consider the economics of the family, explored by Becker and his associates (Becker 1981). In common with other Chicago economists working on law, history, politics, and economic development, Becker saw that economic reasoning could be applied to events beyond the usual, to families as much as to firms. Lucidity has come from this, and a welcome turn of economics to wide subjects.

For all its brilliance as a pioneering effort, though, Becker's program is constrained by its masculinity. For instance the family in Becker's world has one purpose, one utility function—guess whose?—unproblematically unified in the way that the neoclassical firm is supposed to be (see Folbre and Hartmann 1988, 188ff; and elsewhere in the present volume). Ironic commentary on the postulate of mastership within the family comes from a surprising direction. The late George Stigler, Becker's greatest fan and the very model of a modern Chicago economist, wrote: "It would of course be bizarre to look upon the typical family—that complex mixture of love, convenience, and frustration—as a business enterprise." Quite right. But then, with Stiglerian irony, he says truly that "therefore economists have devoted much skill and ingenuity to elaborating this approach" (1966, 21).

One neoclassical way to get beyond a masculine mastership has been illustrated by Marjorie B. McElroy and Mary Jean Horney in "Nash-Bargained Household Decisions: Towards a Generalization of the Theory of Demand" (1981). They view the household as a bargaining game among two players over the allocation of public and private goods. Consider it as double solitaire. To anyone in a family the setup has a familiar sound. The results of the McElroy-Horney model are detailed and plausible, yielding clean implications for labor force participation by women and by teenage children. It brings market solutions into the family (see, however, Brian Cooper's thorough and feminist commentary on such arguments [1990]).

A Darwinian route to the same result has been suggested by Howard Margolis in *Selfishness, Altruism, and Rationality: A Theory of Social Choice* (1982). He argues that for good evolutionary reasons a person is public spirited as well as narrowly selfish, having virtually two selves trading with each

other. Margolis would probably agree that the argument applies literally to families: for some purposes (child-minding) the wife tends to be public spirited and the husband selfish; for others (protection) the man tends to be the public spirited one and the woman selfish.

Susan Feiner (1984), to give another example, takes a nonmarket view of the matter, making use of an analogy of families with serfdom. The analogy is again useful, though it would be more so if the Marxist economists would read more history. In the way that the serfdom of women threatens to break down under advanced capitalism, so, too, the serfdom of men in Western Europe broke down when it was pushed into contact with markets. (The push happened not in the sixteenth century, as a much-beloved piece of Marxist folklore says, but in the thirteenth.)

Another element in a conjective economics is taking difference seriously. From an Austrian perspective, for example, Karen Vaughn has questioned the neoclassical disdain for the committee, that ubiquitous and irritating institution, which so obviously does not achieve the efficient solution:

The Austrian emphasis on the particularized and personalized qualities of knowledge are especially helpful to anyone who has ever worked closely with a group of people to get a job done, whether it be volunteer work in the neighborhood or church, organizing a project at work or running a family. People are all different, and women, I believe, are more tuned-in to that fact than most men. . . . Economists are predisposed to hate this kind of compromise since it probably isn't "the efficient solution." But the Austrian insight reminds us that for most problems where the welfare of many are concerned, there is no efficient solution. The committee is one way both to gather decentralized information and to get the affected parties to buy into the decision finally arrived at. (1988, 14–15)

I admit to harboring dark thoughts about committees myself, and have said frequently that the optimal size of an academic committee is one: all power to the deans. Dictatorship has been the man's model of society since Plato, or for that matter since the caves. Put a good man in charge. After all, says he, a football team has a quarterback who calls the plays and takes the blame. But the point made by Vaughn, presumably not the left guard of her high school football team, has merit as description and as democracy, in contrast to the military and sporting contexts in which men grow up.

Still further along the way to a conjective economics, and economics of what we know together, is taking solidarity seriously. After all, Adam Smith did: the book we economists all know is his book about greed; but his other great book, *The Theory of Moral Sentiments* (1759, 1790), is about love. I repeat that nothing biological is assumed in solidarity. In their essay on the sexist rhetoric of neoclassical and Marxist economics Nancy Folbre and Heidi

Hartmann quote with approval J. S. Mill's advanced views of 1869: "If women are better than men in anything it surely is in individual self-sacrifice for those of their own family. But I lay little stress on this, so long as they are universally taught that they are born and created for self-sacrifice" (1988, 194). Precisely. And I repeat that nothing especially virtuous about the stereotypical woman is being assumed either. Solidarity sounds like a swell idea until one reflects that Tojo, Hitler, and Mussolini raised empires by calling on it.

Anyway, neoclassical economics does not take solidarity seriously, except implicitly within the family and within the firm, and neither do any of the other schools. No wonder. *Vir economicus* sporting around the marketplace is stereotypically male: rule driven, simply-mindedly selfish, uninterested in building relations for their own sake.⁴ A cross between Rambo and an investment banker, our *vir economicus* has certain boyish charms, but a feminine solidarity is not one of them. When it suits his convenience he routinely defects from social arrangements, dumping externalities on the neighbors. *Femina economica*, by contrast, would more often walk down the beach to dispose of her McDonald's carton in a trash bin—not because she reasons in the manner of Kant (and again of men) that one must test one's behavior by hypothetical universalization ("Suppose *everyone* dumped their trash on their neighbors?") but because she feels solidarity with others. It is simply not done to dump trash on the beach; we do not treat our neighbors that way.

James Buchanan (another unexpected direction, this) has noted a consequence of taking *femina economica* and her solidarity seriously. If people

do, in fact, behave in accordance with some version of the Kantian imperative [note that there is a conjective route to this], potential externalities, in the normal usage of this term, will tend to be internalized within the calculus of the actors. Individuals will tend to take into account the effects of their own actions on the situation of others than themselves. Hence [here is the remarkable turn], in such a world there can be no need for corrective collective or governmental intervention in the private decision process. It becomes impossible to observe "market failure" in the standard sense. (1979, 70ff)

A feminine economy would have less need of a paternalistic government. If everyone behaved like people do in Iowa, then socialism would have less to recommend it.

A related technical example in economics concerns the value of a human

4. By the way, Latin like many languages, but unlike modern English, had two words for man: *vir*, which means a "male adult" or "husband," like *Mann* in German or *anēr* in Greek, as distinct from *femina* or *mulier*; and *homo*, which means (and is cognate with the word) "human," like *Mensch* in German or *anthropos* in Greek. In patriarchal societies, of course, the distinction was a fine one. But *homo economicus* literally means "economic human," not "economic man."

life. The usual strategy is to infer the value from how individuals act when they buy insurance or choose risky but well-paying jobs. If a coal miner gets five dollars an hour more than a waiter/waitress of similar skill, and if enough people can move between the mine and the restaurant (a big if), then evidently the person just barely willing to switch to mining puts a value of five dollars on the dangers of the mine relative to work in the restaurant. The statistics of injury and death measure the danger she is actually facing. Therefore the implicit value she puts on her life, assuming she values it methodically and that there are no other amenities or disamenities of the two jobs, can be calculated. The same reasoning applies to more straightforward gambles with one's life, especially the gamble of life insurance. Alan Dillingham (1985) has summarized the estimates, arriving at a figure in the United States nowadays of one million dollars plus or minus half a million.

It has sometimes been noted, however, that individual self-valuation is only part of the value of a life (Usher 1985, 183). In a society with solidarity a life is technically speaking a public good, to be valued by summed values that the citizenry places on it. The whole value is the sum of all valuations of the life, by its owner and by others. Yet most economists have not noticed how it matters that the life is valued by him or her or thee. No human is an island; any human's death diminishes me because I am involved in humankind.

Remarkably, the only value of other lives recognized in the present literature is not the great misery of seeing others die but the cash *advantage* that accrues to the survivor through inheritance and the like. As an empirical matter these merely pecuniary advantages are probably dwarfed by the misery. Janet Guthrie may value her own life at \$1,000,000, and enter formula-one auto racing with that figure in mind. But Jack Guthrie values her life, too, at \$1,500,000, say, and Janet's mother values it at \$2,000,000, her father at another \$2,000,000, her best friend at another \$1,000,000, and so on, down to the single dollar from that anonymous other part of humankind who never sends to know for whom the bell tolls.

The upshot is that the value of life calculated on the assumption of *vir economicus* is probably a small fraction of the correct, conjective measure, the result of our knowing value together, not as isolates. Janet is worth millions, not the one million at which she values herself. The consequences are grave. A value of human life, like it or not, must be used in designing roads and, when the courts allow more than earning power, in deciding personal injury cases. That's just economics. But a conjective economics would use a much higher figure than a masculine economics would, interfering more with the devil-may-care attitude of males, especially young ones, zooming about helmetless on their Kawasakis. Consequently, though a feminine economy would need spontaneously less interference, the interference that did take place would be more thorough—one might say, more motherly.

A conjective economics has other consequences, large and small. Hannah

Arendt once remarked that only a man would ignore a hurt to our grandchildren, which is to say that men might at present discount the future too much in pursuing present glory. Again, the omission of housework from the national income does not survive conjective scrutiny (see Folbre 1991; although even among male economists the omission has long seemed strange).⁵ A conjective theory of labor relations, which would draw attention to the social meaning of employment and wages, might push farther down a road that men have tentatively explored, with their tortured and masculine notion of the "implicit contract" between worker and employer. A conjective view of immigration might find it harder to take the nationalist, I'm-all-right-Jack position that motivates present policy (Roback 1981). Economists better equipped than I am to see the economy with feminine eyes will think of twenty other ways in which an economics amended by women would differ from the male-centered version we now have.

Looking at the economy with feminine eyes, however, is made more difficult than it has to be by certain masculine rules of engagement. A conjective economics, valuing stereotypically feminine perspectives as much as stereotypically masculine perspectives, will be hobbled, corseted, awkwardly hoop-skirted at the start if it accedes without protest to the man-made rules of the game. The masculine rules need to be resisted.

For example, questionnaires are disdained on methodological grounds in a masculine economics. Robin Bartlett (1985) suggests quite plausibly that a conjective economics, using what we know together, would make more use of questionnaires than economics nowadays does; in her presidential address to the Eastern Economic Association Barbara Bergmann (1975) had made the same point. The small percentage of papers in the *American Economic Review* that depend on questionnaires would startle other social scientists.

The reason economists give is, "If you just *ask* someone what they are doing they will tell you lies." Male economists use the argument reflexively whenever someone proposes to ask businesspeople why they are hiring or to ask consumers why they are buying. But hostility to questionnaires among men, and their eagerness to reduce questionnaires to numbers before considering the very words, appears to reflect a masculine idea of the ends and means of conversation. To the masculine argument against questionnaires a woman might reply that the response of course needs to be probed, considered, interpreted; but that doesn't make it unscientific, or even, come to think

5. I once asked the great economist Margaret Reid, the actual implementer of household economics (invented by her Ph.D. supervisor Hazeck Kirk), a friend and colleague of mine at Chicago, whether she thought the housewife's work should be included in national income. I was disappointed by her answer, which was the conventional one that it is difficult to estimate (which of course is also true of the value of owner-occupied houses, governmental services, and most capital goods, each included in national income).

of it, different from other evidence. The “nonquestionnaire” evidence, after all, comes from responses about one’s state of employment spoken to the interviewer from the Department of Labor.

The responses are more than mute facts. As Karen Vaughn has pointed out, in the masculine and neoclassical view of the world the only information comes from bumping up against constraints. Nobody *tells* anyone anything. You can see the neoclassical assumption in the way the new experimental economists talk about their work: they could if they wished examine the rhetoric of markets but usually they prefer to keep their “market” participants in isolation booths. About a fellow economist who claimed that he never “preached” at his children, but merely presented them with the “correct incentive structure” (if you foul up, you get punished, and presumably learn), Vaughn remarks, “My reaction was, first of all, I didn’t believe him. . . . Children do not only learn by doing, they also learn by exhortation, conversation, story-telling and example. The advantage of verbal learning over learning by doing is that it saves the child’s time” (1988, 16–17). Vaughn is speaking as a mother; I agree as a father, though as a father I can see what her colleague had in mind. I do not know if learning by fouling up is an especially male way of behaving, but there can be little doubt that it is an especially male way of seeing behavior. Show me the budget constraint and then shut up. Where in economics have you heard that before?⁶

The reduction of empirical work in economics to statistical fitting of formal models is another saver of masculine labor. The male economist confronted with facts will immediately subordinate them to a model, then to a statistical mechanism, which, he will claim stoutly in the face of most scientific experience, “tests” the model (my own work in economic history has this character). Evelyn Fox Keller recalls the metaphor used by the men of the early seventeenth century, so skilled in torture: Nature is to be put on the rack and tortured until she confesses her formulas. (In the end Dame Nature almost always confesses to formulas surprisingly consistent with the male investigator’s model, and so in the end did the witch confess to the male suggestion that she rode through the air on a broom.)

Consider by way of contrast the great biologist, Barbara McClintock, who approached Nature with the idea that, as Keller puts it in writing of McClintock,

organisms have a life and an order of their own that scientists can only begin to fathom. . . . [McClintock said] “there’s no such thing as a central dogma into which everything will fit.” . . . The

6. Arjo Klamer and I have estimated that persuasion—managers persuading employees, entrepreneurs persuading bankers, retailers persuading customers, professors persuading students—amounts to about a quarter of national income (Klamer and McCloskey 1991). So the “feminine” matter of persuasion is not optional.

need to “listen to the material” follows from her sense of the order of things. . . . The complexity of nature exceeds our own imaginative possibilities. . . . Her major criticism of contemporary research is based on what she sees as inadequate humility. . . . [The dualisms of] subject-object, mind-matter, feeling-reason, disorder-law . . . are directed towards a cosmic unity typically excluding or devouring one of the pair. (1985, 162–63)

The style of empirical inquiry that spends six years on the aberrant pigmentation of a few kernels of corn is rare in economics, but no one is surprised to find it disproportionately among female economists: Margaret Reid of Iowa State and Chicago, for example, in her studies of the consumer spending and death rates, or Mary Jean Bowman of Chicago in her studies of education, or Dorothy Brady of Pennsylvania and of the Women’s Bureau at the Department of Labor in her studies of consumer spending in the distant past, or Anna Jacobson Schwartz of the National Bureau of Economic Research and New York University in her studies of money. “The thing was dear to you for a period of time, you really had an affection for it,” said McClintock (Keller 1985, 164). What is dear to male economists is not the thing itself but their model of the thing. Disproportionately they scorn the rich and multiple stories of the thing itself, the sandy cat in Woolf’s perception filching a piece of fish. The men want to impose their favorite metaphors on the world, not to remain “content with multiplicity as an end in itself” (Keller 1985, 163). “I start with the seedling,” said McClintock, “and I don’t want to leave it. I don’t feel I really know the story [note the word] if I don’t watch the plant all the way along” (Keller 1983, 198).

The point is that economics is at present dominated by a masculinist methodology, defended since Plato by a philosophical doctrine overstating its practical importance. To repeat, even male economists depend on analogy, story-telling, *verstehen*, appeals to authority, mucking about with the raw data, the other half of the rhetorical tetrad; and they depend on them even in their most logical and factual moods. The alternative is not to throw away proof and curve fitting, which deserve a place of honor. The alternative is to make them fruitful by recognizing that we economists already use massively another, parallel, more conjective and more feminine rhetoric.

The use of storytelling is a case in point. The literary critic Peter Brooks says rightly that “our lives are ceaselessly intertwined with narrative, with the stories that we dream or imagine or would like to tell, all of which are reworked in that story of our own lives that we narrate to ourselves. . . . We are immersed in narrative” (1985, 1). Yet male economists sneer at the anecdote, though it gives them most of their factual beliefs, and do not recognize that they use storytelling conventions in their science daily (McCloskey 1990). An eclectic Keynesian will tell the story that “oil prices caused inflation.” To this a monetarist will reply that “it is not an equilibrium,” namely, that the curtain

has been lowered prematurely near the beginning of the second act: if aggregate demand is not changed by the oil prices, why would not other nominal prices fall? The Keynesian will reply in turn with his own drama criticism: "Well, you damned monetarists start the drama in the middle; where does all that money come from, before your play begins?"

In her recent book on biography, *Writing a Woman's Life*, Carolyn Heilbrun notes that "lives do not serve as models; only stories do that" (1988, 37). Her point is that "there will be narratives of female lives only when women no longer live their lives isolated in the houses and the stories of men" (47). An economics with its stories made explicit would be unable to carry on with merely masculine tales.

School librarians attest that girls disproportionately read stories, boys non-fiction. When the big boys reach economics they prefer metaphors of maximization to stories of entry and exit. Notice that there is no epistemological ranking between the two, a metaphor being just as humanistic, if that's how you want to put it, as a story. If a seventeenth-century Darwin had published *The Origin of Species* in 1687 and some Newton had waited until 1859 to publish *Philosophiae naturalis principia mathematica* we would now perhaps think of stories as hard science and metaphors as soft. A conjective rhetoric of economics would exploit the Darwinian niche provided by the neglect of explicit storytelling in economics. Joan Robinson, who admittedly is a hard case, converted around 1940 from modeling maximization, at which she excelled, to the telling of evolutionary and Marxist stories, at which she also excelled. The exemplar of a "feminine" economics would be biology, not physics, and McClintock's biology at that, not a biochemistry revolutionized by guilty but still model-building physicists after the Second World War (as Keller has argued elsewhere).

Discussions of economic methodology involve few women participants. Men more than women tend to be fascinated by the rules of the game (Klant 1985). Women economists often appear to find the discussion vacuous, though most seem to have been persuaded to obey its conclusions. The literary critics Annis V. Pratt and Mary Daly attack "methodolatry" (Pratt's word): "the insistence on a single method is not only dysfunctional but an attribute of the patriarchy" (quoted in Ruthven 1984, 25). "Methodocide" (Daly's word) is a good option. But if we insist on continuing the conventional conversation of methodology, at least the conversation should be opened.

In an illuminating study, "Sex Differences in Games Children Play," Janet Lever noted that "boys were seen quarreling all the time, but not once was a game terminated because of a quarrel. . . . The P.E. teacher in one school noted that the boys seemed to enjoy the legal debates every bit as much as the game itself. Even players who were marginal because of lesser skills or size took equal part in these recurring squabbles" (1976, 482). The boys' game went on, and on, and on, through recess, through every quarrel. By contrast,

"most girls interviewed claimed that when a quarrel begins [among them], the game breaks up. . . . And some complained that their [girl] friends could not resolve the basic issues of choosing up sides, deciding who is to be captain, which team will start, and sometimes not even what game to play" (483).

Methodological disputes in economics and elsewhere run parallel to disputes about kickball and Monopoly. The Swiss psychologist Jean Piaget noted in 1932 a contrast between the "polymorphism and tolerance" of girls' games and "the splendid codification and complicated jurisprudence of the [boys'] game of marbles" (76, 70). Men and boys decide rules of the game and decide to discuss the rules endlessly because they think rules are important, the only important thing. As Carol Gilligan (1982) noted in her discussion of this literature of games, girls and women could not care less. My daughter's girl friends gather in social clusters on the soccer field while the boys quarrel passionately about the rules or bury themselves in lonely fantasies of sporting greatness. Girls and women in our culture, it seems, stress community, conversation, solidarity, and other nonrule values, of the sort that Richard Rorty has embraced as the values of the "new fuzzies" (1987, 41; see Laura McCloskey 1987 on the conversation of girls and boys). When the game no longer serves these values they abandon it. They therefore are defined as incompetent in a game not of their choosing.

The point is to imagine a conversation among economists ruled in this cooperative, antiauthoritarian, anarchopacifist, conjective way, what we know together. Susan Feiner, Barbara Morgan, and Bruce Roberts, in a paper taking a Marxist look at race and gender in introductory economics texts (1988), quote Richard Rorty on the matter a good deal. Certainly Richard Rorty has it right. But I recommend, too, Amelie Oksenberg Rorty. In writing on Descartes' strange and masculine rhetoric of science she argued that what is crucial in distinguishing genuine intellectual life from system-building lunacy is "our ability to engage in continuous conversation, testing one another, discovering our hidden presuppositions, changing our minds because we have listened to the voices of our fellows. Lunatics also change their minds, but their minds change with the tides of the moon and not because they have listened, really listened, to their friends' questions and objections" (1983, 562). A conversation in which economists listened, really listened, to their friends' questions and objections would not sound much like a conversation of men.

Masculine rhetoric in economics has long possessed certain conversation stoppers, notably mathematical proof. The alleged superiority of mathematical proof favors men, who more commonly believe it and believe it deeply. It is notable, by the way, that physicists do not believe it. Contrary to what mathematical economists tell their students, physicists are irritated and embarrassed by the mathematical attitudes of the mathematics department. Math-department mathematics is qualitative, not quantitative. It does not depend on actual measurements, merely existence (see McCloskey 1993, ch. 9).

By contrast, in economics one encounters repeatedly the rhetorical turn of a “disproof” of marginal productivity theory (e.g., Feiner, Morgan, and Roberts 1988, 15–19) or a “proof” of the existence and stability of competitive equilibrium (e.g., Hahn 1986). One finds, that is, a man with chalk dust on his jacket trying to persuade you that *set theory shows* that people do not earn their worth under capitalism or that *game theory shows* that capitalism is after all a workable social arrangement.

The notion that one can prove or disprove a great social truth by standing at a blackboard is a peculiarly masculine delusion. The women can do the math, of course. But they are less inclined to accept it as all there is. It is something of which women students of economics are disproportionately skeptical, I think, though usually silent in their skepticism. Men, especially young men, are typically able to believe any crazy abstraction about society, and stand ready to impose it by force of arms because they do not know what a “society” is. Many more women know, even when young, and are appalled by the shallow summaries of society displayed in the words and graphs and mathematics of economics. Perhaps this contributes to their lack of enthusiasm for economics as presently taught.

I am not suggesting that there is some error in the proofs that competitive equilibrium can be derived from axioms of choice or, to name another male obsession since Hobbes, that there is some error in the proofs that civil society can be derived from axioms of selfishness. They are “right” when they are right. But they are right in such a narrow sense, so removed from the concerns of a community that already has approximate equilibrium and already has a semblance of civility, that someone not half in love with easeful narrowness would wonder what the fuss is all about.

The mathematical economist Frank Hahn, for instance, a man’s man in this line of work, wrote that Arrow and Debreu “*demonstrated . . . the logical possibility of the truth of [Adam] Smith’s claims.*” Many male economists, like Hahn, take this Arrow-Debreu theorem to be the essence of modern economics: “these were remarkable achievements not only for what had been *demonstrated* but for the *conclusive manner* in which it was done. . . . The theory . . . is *all we have of honest and powerful thinking* on the subject [of how economies might behave]” (Hahn 1986, 833; my emphasis). What in fact was done was to show in a couple of pages that certain mathematical objects called “economies” can be looked at mathematically in two ways at least. Using a style of proof fashionable circa 1910, a certain mathematical expression was shown to be equivalent to another.

Worthwhile as the equivalence is—the point here is not to abandon mathematics, considering as I have noted that identical points can be made about wholly nonmathematical work in the tradition of Hobbes—it is limited as science. No historical evidence was adduced; no common experience was reinterpreted; no new way of viewing society was revealed; no deep insight

into human behavior was put forward. Without the substance of economics the proof is just not very useful. Only a man, and a man in love with blackboards, would be likely to be caught saying that such writing was “all we [economists] have of honest and powerful thinking.”

Looking at the formalisms of economics in a conjective way can help. For instance, the vocabulary of the neoclassical “production function,” as a self-consciously conjective style of reasoning would recognize, is intrinsically analogical: we imagine that production is a function of capital and labor. I am arguing that self-consciousness about analogizing and storytelling are feminine in our culture; literalism, a belief in the Reality of this or that analogy or story, is masculine. As Roslyn Willett notes:

For reasons that are not entirely clear, men seem to fantasize more than women. . . . Men tend to impose abstract structures on reality, and then to perceive reality in terms of their abstractions. . . . Economic theory [for example] is elaborated but quite often fails to be predictive, although that is its ostensible purpose. . . . The whole male-dominated world shows symptoms of a progressive removal from the real world with its stubborn ad-hoc-ness and variability. (1972, 526, 528; compare McClintock’s words above)

“Aggregate capital” involves an analogy of “capital” (itself analogical) with something—sand, bricks, shmoos—that can be “added” in a meaningful way; so does “aggregate labor,” with the additional peculiarity that the thing added is not a thing but hours of conscientious attentiveness. The very idea of a “production function” involves the astonishing analogy of the subject, the fabrication of things, about which it is appropriate to think in terms of ingenuity, discipline, and planning, with the modifier, a mathematical function, about which it is appropriate to think in terms of height, shape, and single valuedness. The metaphorical content of these ideas was alive to their inventors in the nineteenth century. It is largely dead to twentieth-century male economists. The men do not notice that they are perceiving reality in terms of their metaphorical fantasies.

During the 1960s the dead metaphor of the production function got out of its coffin Bela Lugosi style for the debate of the two Cambridges. The Marxist economists of Cambridge, England, who did not believe in production functions, battled with the neoclassical economists of Cambridge, Massachusetts, who did. (The British group was led of course by that same Joan Robinson.) All sides agree that after a few quarters of play Cambridge, England was ahead on points, although penalized frequently for eye-gouging and groin-kicking. But suddenly, on account of injuries and the lack of a crowd, to the dismay of the Cambridge, England group, the game was abandoned.

The game itself was testimony to the importance of metaphorical questions

in economics. Its very violence suggests that boys' rules were in force, and that something beyond simple fact or elementary logic was at stake. The combatants hurled logic at each other. The important and unanswered questions, however, were those one would ask of a metaphor, which could be asked only with a conjunctive self-consciousness about such matters—is the metaphor of a production function illuminating, is it satisfying, is it apt? How do you know? How does it compare with other economic poetry? After some tactical retreats by Cambridge, Massachusetts on matters of ultimate metaphysics irrelevant to these important questions, mutual boredom and exhaustion set in, without decision.

The reason there was no decision was that the important questions were literary, not logical. No one noticed this, and the game therefore breaks out in back alleys from time to time under the old rules. The Cambridge Marxists are properly irritated about the lack of outcome, because after all they won the game fair and square on a logical field laid out by their opponents. Yet they lost the larger argument. The continued vitality of the idea of an aggregate production function in the face of logical proofs of its impossibility can only be explained this way: that logical proof, the masculine weapon, is not a perfect winner of arguments.

Nor should it be, on the frequent occasions when the main issue is not a matter of properly translating one expression deductively into another. The "proofs" of the possibility or impossibility of an aggregate production function are equivalent to telling Shakespeare that he must abandon a metaphor because, you know, it is logically "impossible." "You are being illogical, my dear William, to compare your beloved to a summer's day: a human being is surely flesh and blood—a fact indeed that I have proven experimentally. It is not rough winds and darling buds. Break off this madness, dearest Will, and return to the sure path of literal experiment and conclusive proof." Francis Bacon and Descartes, eloquent against rhetoric, could almost have argued so.

The question between neoclassicals and Marxists in the Cambridge Controversy, in short, was a question of metaphor. Can you write down a blueprint for a factory (one of Samuelson's self-conscious metaphors for a production function) and expect to get it built? No, not if the carpenters and electricians and secretaries on the job do not possess "kinds of skills [that] could not even in principle be written down" (Vaughn 1988, 10). The visualization of the metaphor in action is a more persuasive criticism of it than the logic. Nothing was settled forever and ever by hauling in the logic and declaring the matter resolved.

In discussing another "one of the most perfect examples in the history of economic thought of a total failure of a conversation to take place," the Hayek/Lange debate about the feasibility of socialism, Vaughn notes that Oskar Lange "thought the whole debate concerned and could be settled by mathe-

matical reasoning" (1988, 8). He was that kind of guy. The figure of speech "you-are-inconsistent-and-that's-all-I-need-to-show" dominates the rhetoric of masculine argument, as many wives have had occasion to note. Consistency is not the hobgoblin only of little minds; it is more particularly the hobgoblin of little masculine minds. The demonstration that this or that neoclassical idea is incoherent mathematically by a narrow definition of "coherence" settles something worth settling. But it is after all not much. It is sometimes interesting and occasionally important. Hardly ever is it decisive.

Likewise the usual demonstrations that Marxist economics leaves something to be desired "empirically," by which the man using the word will mean "according to some 3 × 5-card definition of consulting The Facts," is not decisive. Nor should it be. There are many reasons for adopting one or the other view, and all are subject to conversation. The actual conversation of science and scholarship leads to conclusions more definite than those achieved by the narrow and official and nonconjunctive methods—this contrary to the main virtue alleged for the official methods, that they are supposed to yield conclusions. Name the conclusion produced by highbrow mathematical or econometric means since the Second World War. Go ahead: no fair merely citing the literature; tell me the substantive gain to economic thinking that has come by the highbrow route. The test is embarrassing to the overblown promise of formalism in economics. The plan to reduce all science to authoritarian pronouncements of true theorems and nonfalsified predictions reflects a masculine notion of life's simplicity. It overvalues "that mass of small intellectual tricks, that complex of petty knowledge, that collection of cerebral rubber stamps, which constitute the chief mental equipment of the average male" (Mencken 1963 [1922], 8). It is a 3 × 5-card philosophy of inquiry.

The usual criticisms in economics of other people's research programs are notably simpleminded, and notably masculine. Men tend to think it satisfactory to find one loose end and pull hard. The young Karl Popper advocated just such a procedure, a thought-saver beloved ever since by young men. It makes scholarship into a game of marbles, scoring points under the rules of falsification and quitting promptly when time is called. It rejects the notion of an agreement arrived at through long and serious discussion. If you can falsify Marxist economics by "proving" that "Marx's predictions were wrong" or falsify Chicago economics by "proving" that "a full set of contingent markets are necessary for efficiency," then you can quit early and go have a beer. There is no need—a conjunctive need, creative of scholarly community—to synthesize, to compromise, to hear the other person's opinion, to spend time listening, really listening, to one's colleagues' questions and objections.

A conjunctive economics might humanize economics and enlarge it, and it might make economists better scholars. Economics through feminine eyes

would not lack seriousness or rigor, unless the women economists allow the feminine to be defined as marginal, pushing Virginia Woolf, Joan Robinson, Emily Dickinson, and Margaret Reid off to one side in favor of Serious Work.

Men and women already must use a wide and conjective rhetoric in doing economics, but are not aware of it. If they became aware of it they would do their economics better and would keep their tempers better. They could speak then in their own voice but with a tolerant confidence, without shouting or sneering. And perhaps they could speak better in the voice of the other, too.

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