

## "Linguinomics: Thoughts and Theorems about Language in the Economy"

Deirdre N. McCloskey<sup>1</sup>

There is of course a mathematics of some social entities, even some economic ones. It has long been realized, for example, that some traffic flow can be predicted using the analogy with fluid dynamics, or with the still simpler mathematics of queues. Automobiles can be treated metaphorically as the molecules of a fluid in a pipe called the A1 from Amsterdam, which then can be analyzed in continuous mathematics with sometimes useful precision. Or at another choice of modeling scale the automobiles are like discrete and queuing molecules building up on the Dutch motorways every morning and afternoon (think of a molecularly small pipe, such as a membrane), which then can be analyzed in discrete mathematics. Demography, too, has its simple and its complex mathematics, more or less accurate in prediction and more or less useful for *verstehen*. The mathematics and especially the accounting of population, admittedly, has tempted demographers to make long-range projections that have sometimes proven mistaken. The predictions of demographic catastrophe made in the late 1960s and 1970s by the Club of Rome and by Paul Ehrlich were speedily falsified. A mechanical extrapolation in demography works well for the short run: we know there are going to be quite a few people over age 65-74 in the next ten years merely because we know there are quite a few people aged 55-64 now, and we do not foresee a plague next year selectively killing off pensioners. But a mathematics as simpleminded as a Malthusian extrapolation does not work very well for longer periods, in which the variables become increasingly endogenous, and if exogenous become increasingly divergent from their initial conditions. What you assumed was one of those "other things equal," *ceteris paribus*, no longer is. Bigger populations of old people in Illinois, for example, raise the price of retirement communities suitable for such folk, who therefore leave for cheaper housing in Florida---and so the simple mathematics of population for Illinois is disturbed by migration in and out of the place. For the world as a whole the demographers did not predict the results of partly exogenous but partly endogenous events such as the Green Revolution, or the explosion of productivity in China or India, or the world-wide fall in birth-rates, all contrary to Malthusian expectations.

The most influential mathematics for economic matters was first outlined in full by Paul Samuelson, in his modestly entitled dissertation for the Ph.D. at Harvard in 1947, *The Foundations of Economic Analysis*. Before Samuelsonian economics triumphed, building in the 1950s and dominant by the 1970s, the uses of mathematics in economics had been distinctly modest, originating in the attempts of French civil engineers in the 19<sup>th</sup> century to think about social gains and costs from highways and railways. *The Foundations*, as it is known to economists, recommended *qualitative* theorems, to be based on the easiest mathematics

---

<sup>1</sup> University of Illinois at Chicago; University of the Free State, Bloemfontein, South Africa;  
Academia Vitae, Deventer, The Netherlands. deirdre2@uic.edu deirdremccloskey.org

borrowed from 18<sup>th</sup>-century celestial mechanics and 19<sup>th</sup>-century thermodynamics, of maximization under constraints. In particular all of economics was to be laid down on the Procrustean bed of a maximizing individual (he is called Max U) facing constraints of the market and technology. By the 1970s the literal and figurative students of Samuelson were demanding that even *macro*-economics, the study of matters like money and inflation that Samuelson had been content to leave in the un-Max-U form in which Keynes and his followers had left it, be re-written as the adventures of the maximizing individual under constraints.

All this looked like the mathematics of physics. But as Philip Mirowski has pointed out, Samuelson never cashed in the metaphor of energetic to the point of actual measurement.<sup>2</sup> Samuelson's brother in law Kenneth Arrow soon joined in, bringing an even more Department-of-Mathematics as against Department-of-Physics spirit, as for example in his own Ph.D. dissertation, *Social Choice and Individual Value* (1951). In Arrow's and much subsequent work the issue was again supposed to be qualitative, but even further from mere vulgar quantities that might actually be measured: the issue was *existence*. Does there exist a stable equilibrium for such-and-such a toy model of an economy? It was similar to the spirit of an inquiry over in the Department of Mathematics into, say, the surprising Goldbach Conjecture: is there even one even number that is *not* the sum of two prime numbers? That a mere engineer is quite satisfied that every even number up to gigantic figures has been shown by vulgar calculation to be the sum of two primes, and that therefore the proposition can be safely used for, say, computer locks, does not impress her colleague in the Department of Mathematics. One counterexample would suffice to disprove it by Mathematics-Department standards.

And so the Samuelsonian mathematics of economic entities took two forms, a high-brow existence-theorem form and a middle-brow maximizing-under-constraints form. Economists to this day appear to think they can solve great social questions standing at a blackboard, proving the existence or non-existence of competitive equilibrium, say. No calculation, please: we're economic theorists. Even middle-brow articles in economics are decorated with "proofs" of a Mathematics-Department character, such as play no role at all in most physics articles. The story is told of a late-afternoon seminar in which a first-rate physicist and a first-rate economist were participating. An unanswered question arose. The physicist went home and solved it overnight with a simulation of the approximate magnitudes involved. He was startled to find the following day that the economist had solved it overnight, too---with an existence theorem.

But the middle-brow and strictly Samuelsonian argument (having in fact little to do with the Mathematics Department's peculiar if glorious intellectual values) is now the "mainstream" in economics. Suppose Mr. Max U is considering whether to get more information, *I*, about, say, the price of automobiles in his town. The more information he gets the better will be the deal he makes in buying an auto. Each unit of information is the price charged for a second-hand auto of known quality by the next seller he visits: \$10,000; then \$9,500; then \$10,250; then \$11,000; then \$9,600; and so on. Bits of information—that is, costly visits---exhibit diminishing returns. Once he has visited half of the auto sellers in town he has a pretty good idea of the lowest price available. Possible he will find a still lower price on the 10<sup>th</sup> visit, but the probability declines, in a fashion mathematically calculable from assumptions about the statistical distribution of prices he faces and the information already gathered through the 9 previous visits. The 10<sup>th</sup> seller he visits will give him less new information about what the lowest price is than the 1<sup>st</sup>, or 2<sup>nd</sup>, or 3<sup>rd</sup>. Suppose, too, that the marginal opportunity cost (as economists put it) of his visits increases as he makes more of them. The 10<sup>th</sup> trip is more

---

<sup>2</sup> Mirowski 1989.

disruptive of his other business, say, than the 1<sup>st</sup>, which he could easily fit into his lunch hour. Imagine axes with *I* on the x-axis and Marginal Benefit and Cost on the y-axis. At some point---the statisticians call it the "optimal stopping point"---it's not worth inquiring any more into the price of 10-year old Toyota Avalons in good condition in Chicago. You probably aren't going to find a better price, and anyway the additional search won't yield *enough* of a better one to overmatch the extra search costs. The optimal amount of *I* to collect is obviously where the downward sloping Marginal Benefit curve intersects the upward sloping Marginal Cost curve. Making still more visits beyond this blessed point would incur higher additional cost than the additional benefit it would earn: time to stop visiting. That's the stunningly simple essence of Samuelsonian economics: Max U seeks in all his activities, whether arbitraging the auto market or going to church, to arrive at such optimal points.

The usual criticisms of Samuelsonian economics are not very persuasive. People will complain that Max U is assumed to have powers of calculation that are unreasonably full. This is the essence of the new "behavioral economics," which has started to listen seriously (after about a century of not doing so) to what psychologists have to say about decision-making. But crude maximizing is all that most economic arguments need. You do not need to be a savant of calculation to see that if exchange rates among the dollar, pound, and yen are out of line there is money to be made. If safety conditions in coal mining improve tremendously, then people will show up at mines looking for work, and money wages will go down. And so on, through hundreds of economic arguments applicable to the real world.<sup>3</sup> In consequence one can show with computer simulations that rough-and-ready "calculation" suffices to keep an economy quite close to its optimal equilibrium. And the Darwinian pressures of entry and exit force people to be roughly prudent even if they have no such skills or inclinations. Restaurants and hairdressers open in numbers beyond rational expectation of profit. But then they close, and overall prudence is preserved.<sup>4</sup> So: whether from direct, calculating prudence of a Max-U sort or from the market-forced prudence of entry to and exit from evolutionary niches, an "economy" in the full Samuelsonian view is merely a summation of prudent people, facing "given" prices that are determined precisely by the interaction in markets of such people.

\* \* \* \*

But there *is* something strange about such modeling and mathematics to which it is not so easy to offer a satisfactory response. It is: *nobody talks*---except to say yes/no to offers expressed in numbers of dollars. "Toyota Avalon in good condition: \$9,600." "No." The automobile customer might feel moved to add, "Because I can get the same for \$9,400 down the street: shame on you for charging more than he does!" The seller might be similarly moved to say something like, "My good friend, that would be a mistake: the seller down the street is a nasty case." But in the economic theory of markets such remarks lack point. They are, as the game theorists put it, mere "cheap talk." They do not signal anything of import, precisely because they are cheap. If they worked, everyone would use them, and therefore they would stop working.

Is it a scientific problem that Samuelsonian economics and its mathematics of social entities has no room for talk, which humans do so much? Not necessarily. That some people

---

<sup>3</sup> As shown in detail in McCloskey 1985 (available in full at [deirdremccloskey.org](http://deirdremccloskey.org)).

<sup>4</sup> The argument in its modern form is due to Alchian DDDD, but it is of course older: Darwin himself appropriated it for biology from a reading of an book by Robert Malthus, the economist.

are left-handed is not something that economics needs to acknowledge, unless perhaps an economist were studying the market for scissors. Institutional economists of an older variety often claim that Samuelsonian economics is, say, bourgeois, and suitable therefore only to the Bourgeois Era. You will hear them claiming that an African economics suits Africa, and an Indian economics India. The Samuelsonian economist merely smiles and carries on taking a first partial derivative.

But if a certain activity bulked very large in the economy---larger than most foreign trade, say, or larger than investment expenditure---then a scientific suspicion would be aroused. And that is the case of talk. In particular, persuasion beyond mere transmittal of offers and acceptances and information is in fact a startlingly large item in a modern economy. We economists might have to stop ignoring the fact, if it is a fact.

Is it a fact? David Lodge's novel, *Nice Work*, shows an English professor, Robyn Penrose, seeing that the managing director she was assigned to watch was first and last a persuader:

It did strike [her] that Vic Wilcox stood to his subordinates in the relation of teacher to pupils. . . . She could see that he was trying to teach the other men, to coax and persuade them to look at the factory's operations in a new way. He would have been surprised to be told it, but he used the Socratic method: he prompted the other directors and middle managers and even the foremen to identify the problems themselves and to reach by their own reasoning the solutions he had himself already determined upon. It was so deftly done that she had sometimes to temper her admiration by reminding herself that it was all directed by the profit-motive. (Lodge, 1988/1990, p. 219).

About a quarter of national income, to be statistical about it, and to speak of many people motivated by profit of a Max U character, is earned from such merely bourgeois and feminine persuasion: not orders or information but persuasion, "sweet talk," you might say. One thinks immediately of advertising, but in fact advertising is a tiny part of the total. Take the detailed categories of employment and make a guess as to the percentage of the time in each category spent on persuasion. For example, read down the roughly 250 occupations listed in "Employed Civilians by Occupation" (Table 602) in the *Statistical Abstract of the U. S.* (2007) looking for the jobs with a lot of sweet-talking, or on the contrary the jobs without any of it. The 125,000 "appraisers and assessors of real estate" are not in an honest economy open to human persuasion, as any American knows who has had a house appraised recently. The 243,000 firefighters just do their jobs, with little talk---although one sees here the depth of sweet talk in a modern economy, because of course a firefighter with colleagues in a burning building does actually a good deal of talking, and sometimes engages in urgent persuasion. The 121,000 aircraft pilots and flight engineers persuade us to keep our seat belts fastened until the plane arrives at the gate and the seat-belt sign is turned off. But that's a trivial part of their job---though again think of the supervisory roles they often assume, and the sweet talk needed to keep the crew cooperating. The 1,491,000 construction laborers are not known for persuasive language, except in the old days when a pretty girl walked by, such as Dil in the movie *The Crying Game*. But anyone who has actually worked in such a job knows the necessity to get cooperation from your work mates, to soothe the feelings of the boss, to be a regular guy or gal: sweet talk. But set all those jobs aside.

Out of the 142 million civilian employment in 2005 it seems reasonable to assign 100 percent of the time of the 1,031,000 lawyers and judges to persuasion, or being an audience for persuasion; and likewise all the 154,000 public relations specialists and the large number of "Social, recreational, and religious workers" (such as counselors, social workers, clergy), 2,138,000 of them persuading people how to live.

Managers and supervisors of various sorts are the biggest category to which it seems reasonable to assign a somewhat lower figure, 75 percent of income earned from sweet talk. In a free society the workers are not merely peremptorily ordered about, to be beaten with knouts if they do not respond. They need to be persuaded. What the U. S. Census Bureau styles “managerial occupations,” such as CEOs, school principals, marketing managers, and the like are a massive 14.7 million, fully 10 percent of the labor force. Adding the “first-line supervisors” scattered over all sectors---which I suppose similarly to be a workforce earning 75 percent of its earnings from persuasion---such as in construction and personal services and gaming (i.e. gambling) workers, adds another big 5.5 million. Add 380,000 for personal financial advisors. The 150,000 editors and (merely) 89,000 news analysts, reporters, and correspondents are probably 75-percent folk. They imagine themselves to be doing “straight reporting,” but it doesn’t take much rhetorical education to realize that they must select their facts persuasively and report them interestingly in sweet words. Likewise the enormous 13.4 million salespeople (which excludes 3.1 million cashiers) are reasonably put down as 75-percent sweet talkers. “The dress is *you*, dear.” It may even be true. In my experience, actually, it usually is. We exaggerate the amount of lying that salespeople engage in.

At 50-percent persuaders we can put down loan councilors and officers (429,000: like judges, they are often professional audiences for persuasion, saying yes or no after listening to your sweet talk, and gathering your information), human resources, training, and labor relations occupations (660,000: “Mr. Babbitt, I just don’t think you have much of a future at Acme”), writers and authors (we are merely 178,000), claims adjusters and investigators (303,000), and a big category, the 8,114,000 educational, training, and library occupations, such as college professors (1.2 million alone) and nursery school teachers.

A mere quarter of the effort of the 1,313,000 police and sheriff’s patrol officers, detectives and criminal investigators, correctional officers, and private detectives, one might guess, is spent on persuasion. That’s what they’ll tell you (actually the ones I’ve talked to put it at higher than a quarter; one way of backing all this up would be to do in-depth interviews, probing in a job for sweet talk as against mere information or coercion or physical activity; or riding along in the squad car and listening). In health care anyone who has worked in it knows that sweet talk is important, to get the patient to stay on his medicine, of course, and to coordinate with other care-givers, to advocate for the patient, to deal with insurance companies and hospital administrators (some of whom are included above in the managerial category). But the large group of “health care practitioners and technical occupations” needs to have the technical occupations (x-ray technicians, medical records technicians, and so forth) removed, leaving physicians, dentists, nurses, speech pathologists, and so forth actually talking to patients and each other, for a total of 7,600,000 talkers persuading for a quarter of their economic value. Perform the mental experiment (which is still another way to back it up): imagine a speech pathologist, an occupation I am familiar with, with *no* persuasive skills whatever, a mere transmitter of the “information” that a child need not be ashamed of being a stutterer when Winston Churchill and Margaret Drabble were, and imagine how much less valuable she or he would be. The 353,000 paralegals and legal assistants figure in the one-quarter category, too. The quarter sounds low.

The occupations I mention alone, without hunting in putatively un-persuasive categories like mail carriers or bus drivers or “life, physical, and social science occupations” (within which are buried many of the persuasive economists and law professors themselves), amount to 36,100,000 equivalent workers---that is, weighted by 1.0, 0.75, 0.50, or 0.25 as the case warrants and then added up. That was in 2005 about a quarter of the income-earning numbers

of private employees in the U. S. Weighted instead by dollar incomes, considering the big role for managers and supervisors (about 20 million, remember, out of all the 142 million workers), who are of course paid much more---these days sometimes grotesquely more---than the people they persuade to work hard and long and well, the share would probably be larger still.

A similar calculation for 1988 and 1992, using the slightly different categories available for those years, yielded similar results (Klamer & McCloskey, 1995). Somewhat surprisingly the weight of sweet talk in the economy has not risen since then---though if police and health-care workers were put in the 50-percent category, and educators in the 75 percent, as the earlier calculations assumed, the share of persuasive work in 2005 would nudge up to 28.4 percent of the total.

The calculation could be improved with more factual and economic detail; for instance, the workers as I just said could be weighted by salaries; the marginal product of persuasion could be considered in more detail; the occupational categories could be subdivided; the premium to better persuasion could be estimated from sales commissions or promotions; squad cars could be ridden in, and---as Ronald Coase in fact did to discover transaction costs and as Robyn Penrose in fiction did to discover persuasion---the managers could be shadowed. I intend here only to raise the scientific issue, not to settle it.

The result can be checked against other measures. John Wallis and Douglass North reckoned that fifty percent of American national income was Coasean transaction costs, the costs of persuasion being part of these (1986). Expenditures to negotiate and enforce contracts---their definition of transaction costs---rose from a quarter of national income in 1870 to over half of national income in 1970 (Wallis & North, 1986, Table 3.13). Their measure is not precisely the one wanted here. Transactions costs include, for example, "protective services," such as police and prisons, some of whose income (I am claiming three quarters of it) is "talk" only in an extended and sometimes physically violent sense. Literal talk is special---in particular it is cheap, as guns and locks and walls are not---in a way that makes it analytically separate from the rest of transaction costs.

Not all the half of American workers who are white-collar talk for a living, but in a not-very-extended sense many do, and more so as office work gets less physical in typing and filing and copying. So for that matter do many blue-collar workers persuading each other to handle the cargo just so, and especially pink collar workers dealing all day with talking people. And a good percentage of the talkers are persuaders. The secretary shepherding a document through the company bureaucracy is often called on to exercise sweet talk and its evil twin, veiled threats. If she can't use sweet talk she's not doing her job. The bureaucrats and professionals who constitute most of the white-collar workforce are not themselves merchants, but they do a merchant's business inside and outside their companies. Walk with me, talk with me. What news on the Rialto? Note the persuasion exercised the next time you buy a necktie. Specialty clothing stores charge more than discount stores not staffed with rhetoricians. The differential pays for the persuasion: "The fish tie makes a statement." As Smith said "everyone is practicing oratory." Not everyone, perhaps, but in Smith's time a substantial percentage and in modern times fully twenty-five percent.

The same point can be made from the other side of the national accounts, the product side. The more obviously talkie parts of production amount to a good share of the total, and much of these is persuasion rather than information or command. Out of an American domestic product of \$11,734 billion in 2004 (*Statistical Abstract 2006*, Table 650, p. 430) one can sort through the categories of value added at the level of fifty or so industries, assigning rough guesses as to the percentage of sweet talk produced by each---80 percent for "Management of

companies," 20 percent for "Real estate rental and leasing," 40 percent for "art and entertainment" for example---and get up to about 17 percent of the total. The figure squares crudely with the income side. Persuasion is anyway big, very big. Economists should stop ignoring it.

\* \* \* \*

In one sense the economists have *not* ignored talk. The economist Jacob Marschak, for example, wrote a paper in 1968 exploring the "economics of inquiring, communicating, deciding." But---like all *Samuelsonian economists*---he got no further in thinking about it than the model of transmittal and gathering of bits of information, such as offer-prices of second-hand Toyota Avalon autos or telephone numbers or the price of hog bellies. "Data are gathered. They are communicated [note the word] to the decision-maker. He, on the basis of the message received, decides upon the action" (Marschak, 1968, p. 2). The only fruit of the sender-receiver metaphor thus deployed is to observe that "perfection is costly" (p. 3), in other words that encoding and decoding are costly (see his diagram on p. 5) and are therefore subject to a rational calculus of cost and benefit. The same point had been made in 1961 by another economist, George Stigler, who developed the mathematics more elegantly than Marschak did, and stated the basic point more eloquently, too: "One should hardly have to tell academicians that information is a valuable resource: knowledge *is* power. And yet it occupies a slum dwelling in the town of economics. Mostly it is ignored" (Stigler, 1961/1968, p. 171).

Thanks to economists such as these---Kenneth Boulding, for example (1958, pp. 87-97); or Ronald Coase and his "transaction costs"; or George Akerlof and "asymmetric information"---the transmittal and gathering of bits of *information* (again, note the word) is no longer ignored in economics. In fact it could be said to be one of the two main preoccupations of economic theory since the 1960s, the other being further explorations to and beyond the outer limit of reason of "rational" behavior assuming one has already acquired all profitable information, "non-cooperative game theory."

But the metaphor of "transmittal of bits of information" has narrow limits. When Thoreau was told by some technology-admirer that the extensions of the new telegraph now made it possible for "Maine to speak to Texas," he replied, "But does Maine have anything to *say* to Texas?" The meaning of the message in economics has been left aside. Do we have anything to say?

Students of communication, rhetoric, linguistics, philosophy, and the like call "speaking to Texas" the "conduit metaphor." In 1979 the linguist Michael Reddy gave fully 141 expressions of the conduit metaphor in English rhetorical practice, such as "You'll have to try to *get* your real attitudes *across* to her better" (expression-type A, "implying that human language functions like a conduit," number 1, p. 311) or "Her unhappy feelings *fell* on deaf ears" (type G, "implying that the [bits of information] may or may not find their way into the heads of living humans," number 141, p. 320). The point is, as Reddy puts it, that "English has a preferred framework for conceptualizing communication, and can bias thought processes toward this framework, even though nothing more than common sense is necessary to devise a different, more accurate framework" (p. 285). He gives also 45 expressions that when used alone, without the conduit metaphor lurking in the background, imply a quite different framework: for example, "How do you *build readings* for sentences like that?" Building readings is a cooperative enterprise in a common space, a cooperative game, not a pre-formed bit of information sent hurtling through the conduit, like signed checks whisking in the pneumatic

tube to your drive-in bank teller. My personal metaphor, less felicitous than “the conduit” because it depends on a specifically American cultural reference, is the “Roto-Rooter theory of communication.” Communication in the Stigler-Marshak-et al. view is a matter of pipes between minds. If they get clogged, the sending of information costs more, and so it is then worthwhile to call the Roto-Rooter man and have the pipes reamed out, re-establishing clean conduits in which “Your concepts *come across* beautifully”(Reddy, number 8).

“But pause,” one might say. “What’s wrong with the conduit metaphor? Isn’t it true? Aren’t we in fact engaged in *getting* our ideas *across* and *gathering* information?” No, we are not, not entirely. The conduit metaphor describes some part of economic language, such as the report that hog bellies were \$0.9283 per pound at 2:30 Eastern time on June 28, 2007. Obviously some language is transmission as through a conduit, as when you give your friend your telephone number or when you inform an economically naïve audience that Ben Bernanke’s portfolio as Fed chief is after all only a few percent of existing world bonds. Humans do such “communication,” but so do birds signaling territorial limits, or fish in a school. Trademarks and brands are of course linguistic items, “signs” literally. Informational advertising would provide some of the data for a study of social language in this restricted sense, making use of the immense academic literature on marketing, for example. Semiology arises at that point---again in animals and plants as well. Flowering plants are signalers, and co-evolved with insects and birds and mammals: “Here I am, oh pollinating insect, oh seed-spreading bird or mammal.”

And beyond the point of honest persuasion in “conveying” information comes the temptation to lie, “misinformation,” “manipulation,” which is the vulgar, newspaper meaning of “rhetoric.” This we humans have to a notable extent in common with other great apes---but also indeed with camouflaging plants and animals. Though advertising is, financially speaking, mainly informative or a bond as to quality, notoriously it is sometimes persuasive in dishonest ways. Precisely because signs and signals and advertising and rhetoric are sometimes *not* mere information, and meant instead to change ones mind, humans (and other great apes) are suspicious of rhetoric. it is one reason that since the 17<sup>th</sup> century the study of rhetoric has been devalued, as merely democratic beside the aristocratic glories of first-order predicate logic.

\* \* \* \*

In explaining the fact of 25 percent of national income being sweet talk a temptation of the modern economist is to try to model it in the style of Samuelson, as the outcome of still another adventure of the prudent person, Mute Max U. (I say “Mute” because we are talking about talking here, and Samuelsonian economics does not talk about it.) The modern Samuelsonian economist does so because it is her only model. If something---love or justice or courage---does not fall within a utilitarian maximization subject to a resource constraint, she has nothing to say. But language, I am suggesting, unless reduced to bits of information, as it cannot entirely be so reduced, cannot be modeled as Mute Max U.

The limits and patterns of human speech do of course limit and give pattern to the economy. Some conversations are impossible in humans. At the most abstract level, some sort of Chomskyan limits of deep structure might possibly apply, though it seems doubtful. Perhaps there are deals, orders, desires, plans that would be possible in a language of another species but are interestingly impossible, or at any rate difficult, in human language. Beings that were not differentiated individually, for example, would find orders naturally persuasive in a way that humans do not. Wittgenstein said that “to imagine a language is to imagine a form of life” (Wittgenstein, 1963, p. 19). He might as well have said that to imagine a form of life is to



imagine a language. "It is easy," he remarked, "to imagine a language consisting only of orders and reports in battle" (Wittgenstein, 1963, p. 19). An army that is something other than a gang of Homeric heroes clashing one-on-one in single combat is a form of life that responds to particular orders issued by particular people. The phalanx on the left flank moves when the general speaks, as though it were an organism and not a collection of free citizens of Athens.

But the binding constraints are much more likely, it seems to me, to be matters of pragmatics and socio-linguistics than matters of syntax and vocabulary. I have a friend, a Dutch woman, who built a vacation home on a Greek island. She found that within Greek society it was impossible, simple impossible, for a woman to tell a male contractor what to do. Her contractor ignored her requests, and she was forced to hire *another* Greek, a man, to give the orders. Even that did not work perfectly: her indirectly transmitted order to have large waste pipes for the toilets was ignored, with the result that---as is common practice in rural Greece---her soiled toilet paper is not flushable. There's an economic effect.

The formal attempts to extract any interesting constraints that language places on economic behavior from sheer logic or even from an enriched logic of the rules which linguists call conversational implicatures has not borne fruit, and seems unlikely to. The attempt of the game theorist Ariel Rubinstein to do so shows how little can be expected even from very canny ruminations on evolutionarily stable strategies or a supposition that the equation  $\psi = [\varphi(x,y) \cap \varphi(y,z) \cap T] \rightarrow \varphi(x,z)$  is a tautology (Rubinstein, 2000).

But economics still has something to say. To Texas. The economist and rabbi Israel Kirzner put his finger on what a free society achieves, from which we can understand how meaningful language works in one. "It [is] highly desirable to choose among alternative social arrangements those modes of organization that minimize [ignorance of knowledge that can be absorbed without decision and search, by the sheer noticing of it]. . . that is, those modes of organization that generate the greatest volume of spontaneous, undeliberate learning" (Kirzner, 1979, p. 147, 145). His assertion runs against the love of explicitness in modern life, the proliferation of handbooks on leadership and of axiomatizations of thinking. Surely, the handbook-writer avers, we need to transmit through a conduit to the student's mind numerous bits of information, and if this can be centrally planned, all the better. Every schoolchild in France is on the same page at the same hour of the same day, thanks to the planners in Paris. But real innovation, Kirzner is saying, entails real ignorance, that is, "knowledge about which nothing is known" (1979, p. 144).

It can be put economically: *known* knowledge (shades of Donald Rumsfeld) earns its normal reward. If you know how to read a balance sheet you do not on that account alone become Warren Buffett, because so many other people know how to read a balance sheet. *Unknown* knowledge, on the other hand, generates supernormal profits. When sometime before 1211 an anonymous Florentine invented the idea of a double-entry balance sheet, then he, or his Italian imitators, could pick up the profit from the innovation, and did (Origo, 1957/1986, p. 109). Once the reading of balance sheets is widely known, however, the supernormal profits fell to zero.

It is still a good idea for people to learn to read balance sheets, engaging in "search" that has a known reward to the MBA graduate or law student who engages in it. The opportunity cost of such searching may be good for the society, as against a worthless search for, say, learning to read the stars astrologically. But it is not an innovation. National income does not actually fall, since learning to read balance sheets has a marginal product equal to its opportunity cost, at the margin, and therefore has intramarginal gains ("rents" economists call them, if not the "supernormal" profit of real entrepreneurship), whereas learning to read the

stars does not. The intramarginal reward to routine learning sustains the national income. As a matter of fact, as an economist can persuade you in one of her maddening diagrams, it simply *is* the national income. But national income will not *rise* unless the innovation is Kirznerian.

"The ease of calculation provided by money," writes Kirzner, "is thus not merely a device for lowering transaction costs relevant to deliberate search," as the Samuelsonians claim (Kirzner, 1979, p. 150). "It represents a social arrangement with the ability to present existing overlooked opportunities in a form most easily recognized and noticed by spontaneous learners." Kirzner makes a parallel point in his writings on entrepreneurship.

\* \* \* \*

Kirzner's analysis is correct so far as it goes. What is missing from it, however, is language. The alertness that Kirzner thinks of as the essence of entrepreneurship involves language in its fulfillment. Unfulfilled it is just another bright idea. The necessary, next entrepreneurial step---which Kirzner does not treat---of persuading oneself, a banker, a supplier, an employee, a customer, oneself is rhetoric all the way down. In consequence a community of free speech briefly unique to Northwestern Europe after 1700 or so, for example, "represents a social arrangement with the ability to present existing overlooked opportunities in a form most easily recognized and noticed by spontaneous learners" (Kirzner, p. ).

The crucial point was discovered in 2007 by Sarah Millermaier, who argues in the way of Jürgen Habermas that communication is after all a *cooperative* game (Millermaier, 2007). A real conversation, "communicative action," in Habermas' words, "specifies which validity claim a speaker is raising with his utterance, how he is raising it, and for what" (1981 [1984/1987], p. 278). I would say that a real conversation entails serious and self-conscious rhetoric. What Habermas calls "strategic" speech is on the contrary a reading *through* the speech to the "underlying" interests. It is speech meant to achieve a result external to the practice (to use, as Millermaier does, the language of still another student of these matters, Alasdair MacIntyre). Millermaier observes---and here with MacIntyre and myself---that the conversation must be ethical and the ethics must be of the virtues and therefore that what I am calling "real conversation" must draw on the seven principle virtues (McCloskey 2007). Habermas constrains communicative action on the level of logic, pragmatics, and participation.

Think of an academic discussion---perhaps one on how the way that language works in an economy adumbrates a humanistic science of economics going far beyond the prudence-only, Benthamite-Samuelsonian routine on which economists have been grinding for so long. Imagine contrary to the urgings of Rawls or Habermas or MacIntyre or McCloskey that the main speaker is *not* trying earnestly to uncover the truth, say, or to learn from the audience by listening, really listening. Suppose instead that he is focused entirely on some result external to the practice of serious scientific inquiry---getting a job offer that will raise her salary at home, perhaps; or demonstrating to the admiring audience how very intelligent she is. Imagine that the audience is similarly engaged in a non-cooperative game (the old Industrial Organization seminar held at the Law School of University of Chicago in the 1970s was like this when certain members were present, and others absent). Such a boys' game may be fun to play. But it is not serious conversation, not science---except in those cases in which the science is run on boys' rules.

If speech is merely strategic, a non-cooperative game, then the only virtue in play is prudence. *Every attempt to characterize speech by a well-trained Samuelsonian economist is going to*

*try to reduce it to such prudent tactics.* Economics is after all the pure theory of prudence. It is natural to the rhetoric of economics since Bentham and especially since Samuelson to imagine that all behavior is reducible to that of the charmless, unloving, and above all calculating fellow, Mute Max U.

Millermaier's point is that such a reduction is corrupting of real conversation. It makes impossible the mutual formation of meaning which much of our economic life is about, and depends on. We engage in polite chatting around the water cooler and are able thereby to cooperate with our colleagues. If we engage in it obviously *for that purpose*, though, people catch on, and we find it more difficult to gain cooperation. An economic way to make the point is a paper by Paul Ingram and Peter Roberts in the *American Journal of Sociology* in September, 2000, "Friendship Among Competitors in the Sydney Hotel Industry." They find that the friendships among competing hotel managers in the 40 Sydney hotels in their study generate about \$2.25 million Australian more of gross revenues per year per hotel – for example, through recommendations of the competing hotel when it is fully booked – than would be generated by a hotel with friendless managers (p. 417). So far so good for Judge Posner. They add, however, "the critical caveat that the instrumental benefits of friendships are inextricably tied to the affective element," that is, you can't successfully fake friendship (p. 420; compare Mueller 1999, p. 39). The faithless ones get found out. Considering the depth of skill among primates in performing and detecting falsehood, this is not surprising. Both Prudence and Solidarity work. "Individuals who try to form and maintain friendships solely as a means to material gain will fail to evoke trust and reciprocity." That is, Prudence Only will not work, and so "those who would limit the intrusion of society into economy by . . . characterizing embedded relationships between buyers and suppliers as predictable outcomes of a repeated, non-cooperative game" are mistaken (Ingram and Roberts 2000, p. 418).

That's another reason that prices and meanings cannot be sheer, non-cooperative games. It would be like insisting that married people *only* deal with each other instrumentally, in the style of a Beckerian marriage between "M" and "F." As Millermaier observes, for another example, programs of corporate ethics that declare themselves as "using" values to achieve Mute Max U's goals will undermine the cooperative game that makes language and ethics possible.

The conundrum of language in the economy, then, cannot be solved within Mute Max U models. To the extent that language is reduced to Mute Max U it ceases to exhibit one defining characteristic of human language, which is, I hope you believe by now, *not* the mere transmission of information but the making of meaning and the imagining of novelties:

The mind, that ocean where each kind  
Does straight its own resemblance find;  
Yet it creates, transcending these,  
Far other worlds and other seas,  
Annihilating all that's made  
To a green thought in a green shade.

To put it another way, the Mute Max U model fits smoothly with the conduit metaphor, which would be good news if human communication were largely a matter of transmitting preformed messages between minds. But Mute Max U does not fit at all with a rhetorical (or Wittgensteinian or Burkean or Austinian or Habermasian or MacIntyrish) theory of language. If these were just silly theories, amusing to the effete snobs in the Department of English but unworthy of the tough, masculine science of economics, and econowannabe sciences like political science or law-and-economics, then economics could go on ignoring them. But they are

in fact the best thinking about what language is that the 20<sup>th</sup> century offered. It would be unscientific to go on insisting that all we economists can talk about is our old, if unreliable, friend, the implacably silent Mute Max U.

\* \* \* \*

What, then would be the scientific payoff of letting Max U speak? We are just at the beginning of fashioning a mathematics of sweet-talking Max (or, rather, Maxine).

But here's one implication of sweet talk in a context of market economics. Over the very long run of centuries the sweet talk is surely rising as a share of income---that appears to be a fact---and will become very large indeed over the next century---that is a factual prediction. Jobs for peasants, proletarians, and aristocrats are disappearing, and jobs for the talkative bourgeoisie are what remain. The production of things has become and will continue to become cheaper and cheaper relative to persuasion. A piece of cotton cloth that sold for 70 or 80 shillings in the 1780s sold in the 1850s for 5 shillings, and now adjusting for inflation it sells for pennies. The cheapening of things first led peasants off the land: three-quarters of American workers in 1800 worked on farms; forty percent in 1900; eight percent in 1960; two-and-a-half percent in 1990. The two-and-a-half percent produced 800 times more than the three-quarters had. A lawyer or professor was not much more productive in 1990 than in 1800. But an American farmer was more productive by a factor of 36. The making of things in factories will go the same way as the preparing of food in kitchens and the growing of crops on farms. The calculating power---adding, multiplying, and carrying---that sold for \$400 in 1970 sold for \$4 in 1990 and 4 cents in 2000. The silent proletarian labor required to make a radio, a window pane, or an automobile is dropping towards zero. Workers on the line in manufacturing peaked at about a fifth of the labor force after World War II and have since been falling, at first slowly and now quickly. In 2003 a mere 2 percent of the civilian labor force was in agriculture, 10 percent in manufacturing. What is left is hamburger flipping and secretarial work on the one side and bourgeois occupations, largely persuasive, on the other. In fifty years a maker of things on an assembly line will be as rare as a farmer is now, the non-persuaders vanishing into the automated background of the economy.

The delivery of information and commands, as opposed to sweet talk, partakes in the euthanasia of the maker. A farmer can turn on his computer in the morning and know at once the price of hogs on every exchange. A single electronic source of information on the hog prices does the work of fifty newspapers. When a Grameen bank finances the purchase by a local woman of a cell phone the farmers in her neighborhood suddenly know for sure the prices on offer in Dacca. In an army the order to march can be conveyed cheaper by radio than by a lieutenant on a horse. Information and commands become cheaper and cheaper.

*But persuasion does not become cheaper.* It will not go the way of goods and information, the subject of conventional economics since Bentham, into close-to-zero-opportunity-cost extinction. The decision what to do with the farmer's hogs, knowing all there is to know about prices, is still made in the kitchen council by farmer and son and wife, persuading each other; or in the councils of the farmer's mind. The decision about where to send the regiments, into the Wheat Field or around the Union left, is still a matter of persuasive talk.

And sweet talk is sometimes adversarial. If the other salesman has a computer-assisted video to persuade the customers, then you as his competitor will need one, too. If the defense attorney in a product liability case starts hiring economists to testify that Fisherian statistical

significance is true science, then the plaintiff's attorney, if she has good sense, will start hiring economists to persuade the judge that Fisherian statistical significance is nonsense. If teachers get better at persuading people to read books, then television executives will devote more resources to persuading them to watch reruns of *Sex and the City*.

*The technology is irrelevant*, and therefore the fevered talk about the "information society" and the economist's over-simple focus on bits of information is misleading. Persuasion is in this way like pure queuing. The time (or something else) must be spent in a queue somehow or else the queuing will not serve its function of allocating bread or gasoline or Bears season tickets being sold for below the market price. Oregon Plans, queue tickets, and other technology of queuing, we Chicago economists delight to point out, have no effect at all on the amount spent, when time and other inconvenience is measured at its money value.

Likewise, persuasive energies must somehow be spent arguing, or else the persuasion will not serve its function of allocating decisions to the proper side. (This, by the way, is good news for lawyers, politicians, advertisers, poets, scholars, scientists, and the like.) The economic problem is that the decision-making itself, unlike the acquisition of information or cotton cloth, is intrinsically costless. After all, we could decide in an instant henceforth never to produce anything different from what we produced today, as rotten as such a plan would be. Do tomorrow exactly what you did yesterday. The decision to adopt such a Groundhog-Day central plan would take the stroke of a dictator's pen. Since it is not intrinsically costly (unlike the very production of information or orders, which require paper and computers and loudspeakers with opportunity costs) decision-making has to be made, so to speak, artificially costly.

The problem is that economics after---but not including---Adams Smith has no room for persuasion. And yet one quarter of national income is earned by it, and rising. It would be as though economics had no room for an analysis of land and physical capital, which in some periods earned as much as one quarter of national income---though these are falling, while the earning of sweet talk gradually but inevitably rises.

\* \* \* \*

Another example. A common property resource, such as a lake for fishing or a park for picnicking, will always be overused if people are prudence-only, unspeaking (or perhaps "unspeakable") Mute Max U types. The fish will be overharvested, to extinction. The park will be strewn with trash, and the life of man will be solitary, poor, nasty, brutish, and short. In 1994 three economists at the University of Indiana, Elinor Ostrom, Roy Gardner, and James Walker, looked into the matter in full historical ("field settings") and experimental detail. As they note, Thomas Hobbes "justified the necessity of a Leviathan on the frailty of mere words" (Ostrom et al., 1994, p. 145). In his own words, "the bonds of words are too weak to bridle men's ambition, avarice, anger, and other passions, without the fear of some coercive power" (Hobbes, 1651/1914, p. 71).

But this is not so. In the world as it is people don't behave always as Mute Max U, ignoring every virtue but the virtue of prudence, and never finding meaning in talking to each other. In Ostrom et al.'s amusingly stilted language, "Studies of repetitive common property resource situations in field settings show that appropriators [e.g. fishers in a common lake] in many, but by no means all, settings adopt cooperative strategies that enhance their joint strategies without the presence of external enforcers" (p. 148). That is, in the real world, and even without a Leviathan government making it happen, you find that people often cooperate

in getting the most out of a resource such as fish in a lake, instead of cheating for their personal gain and ruining the resource for all.

Thus for example the famous "tragedy of the commons" that in 1968 Garrett Hardin wrote on (in aid of the propositions that freedom to breed is intolerable and that population policy should be mutual coercion mutually agreed upon) was factually mistaken.<sup>5</sup> True, if medieval agricultural communities in Europe allowed the common fields to be overstocked there would be a loss, as the sheep and cattle trod down the grass, or ate up the early shoots renewing it. But not surprisingly the communities in question understood the point as well as modern academics do, and talked about it, and introduced stinting to prevent the loss. The loss is gigantic at small numbers of grazers if, as Hardin assumes, each grazer acts as a Cournot oligopolist, that is, if he idiotically ignores his influence on others.<sup>6</sup> Hardin admits that "in an approximate way, the logic of the commons has been understood for a long time, perhaps since the discovery of agriculture or the invention of private property in real estate." That's right. His only argument for the relevance of non-property is that "even at this late date, cattlemen leasing national land on the Western ranges demonstrate no more than an ambivalent understanding, in constantly pressuring federal authorities to increase the head count to the point where overgrazing produces erosion and weed-dominance." Of course they do: they are farming the government, and the public lands are of course nowadays overgrazed. But in olden days, the land was private when it mattered. Anyone who troubles to examine local regulations or legal cases in the not-so-wild West, or in English villages in the 13<sup>th</sup> century, will find stinting enforced.<sup>7</sup> Hardin, though an impressive scientist, appears not to have looked into the evidence.

Ostrom et al. tried it out in the laboratory, letting the experimental subjects talk to each other, sometimes just one time and sometimes many times. They found that when the players were not allowed to talk at all the joint rewards were low. But when they talked, everything changed. The more the kids were allowed to talk the closer they came to achieving the best payoff for the group. The talking players certainly never adopted what is known in game theory as the "trigger" strategy, that is, punishing defectors by initiating a war of all against all. As someone put it, "Yeah, someone is cheating [he didn't know who it was], but that is the best we can do" (p. 156). In another experiment someone said, "Go for a free-for-all? Shucks, no, we all lose" (p. 159). The "shucks" makes one worry that the choice of genial Hoosiers as experimental subjects is biasing the result; but such results have for twenty years been pouring out of all the economic laboratories, such as those in fifteen small-scale societies worldwide studied by Heinrich et al. in 2004. Time to take the science seriously.

And communication, whether free or costly---Ostrom et al. charged the players money to engage in periods of negotiation---radically increased the amount of cooperation. True, the "experiments should not be interpreted as supporting arguments that communication alone is sufficient to overcome repeated dilemma problems in general. . . . [Players] might well want to add the sword to a covenant" (p. 169). That is, the pious hope that "better communication" can solve all the world's problems---Darfur, for example, or Kosovo---is often vain. But the opposite

---

5 Hardin 1968.

6 "Since, however, the effects of overgrazing are shared by all the herdsmen, the negative utility for any particular decisionmaking herdsman is only a fraction of 1." A rather large fraction of 1 if N is small.

7 Cite Hill and Anderson; documents

conclusion is not sustainable either---that talk is merely "cheap" and language does not matter for economic outcomes in foreign relations or in marketplaces.

\* \* \* \*

Another example. Trust, of course, is one outcome of sweet talk. Economists have devoted a good deal of attention to trust over the past decades, though they have usually tried to make it fit the Procrustean bed of a no-language, single-virtue, prudence-only view. Even if an economic actor does not herself talk, the economist gamely claims, she will nonetheless form opinions about the trustworthiness of others, looking merely as a prudent person at their actions. We say, "Actions speak louder than words."

But the proverb is false if taken always to be true, as economists now do. Sometimes words speak louder than actions. Borrowing and lending take place only after a persuasive story has been told and believed. You do not lend to your brother-in-law if you do not believe his promises to repay, or if you do not share his vision of the millions to be earned in real estate. The more so with strangers. In the absence of signals of trustworthiness such as belonging to your own unpopular religion, say, or having a high rating from Dun and Bradstreet, no stranger gets a loan.

A classic paper in 1963 by the legal sociologist Stewart Macaulay studied firms that did business in Wisconsin. He confirmed what everyone in business knows, that business normally depends on a state of trust, not on explicit contracts to be enforced in courts. One large manufacturer of cardboard boxes looked into how many of its orders had *no* agreement on exact terms and conditions that would satisfy a lawyer looking for a "contract." The manufacturer found that in the mid 1950s the percentage ranged from 60 to 75 percent of the orders, in an industry in which an order canceled means you end up holding a lot of useless boxes shaped and printed to the particular customer's specifications (Macaulay, 1963, p. 196).

It drove the company lawyers crazy. One said, "Often businessmen do not feel they have 'a contract'—rather they have 'an order.' They speak of 'canceling the order' rather than 'breaching the contract'" (Macaulay, 1963, p. 197). Another lawyer declared that he was "sick of being told, 'We can trust old Max,' when the problem is not one of honesty but one of reaching an agreement that both sides understand" (Macaulay, 1963, p. 195).

The non-lawyer businessmen didn't see it that way. "You get the other man on the telephone and deal with the problem. You don't read legalistic contract clauses at each other if you ever want to do business again. One doesn't run to lawyers if he wants to stay in business because one must behave decently" (Macaulay, 1963, p. 198). One uses the courts only when someone defects. But few defect. There's a purely prudent reason, to be sure—that defecting is bad for business. But there's a just, faithful, loving ("good old Max") reason, too.

People want to be virtuous in business as elsewhere in their lives, and their virtues depend on relations developed through talking with good old Max. (Talking to Mute Max U, by contrast, is valueless cheap talk.) Macaulay concluded that "Two norms are widely accepted. (1) Commitments are to be honored in almost all situations; one does not waltz on a deal. (2) One ought to produce a good product and stand behind it" (Macaulay, 1963, p. 199).

In 1912 before a House committee on the money trust J. P. Morgan was being questioned by a hostile Samuel Untermyer:

*Untermyer*: Is not commercial credit based primarily upon money or property?

*Morgan*: No sir; the first thing is character.

*Untermyer*: Before money or property?

*Morgan*: Before money or property or anything else. Money cannot buy it. . .  
because a man I do not trust could not get money from me on all the  
bonds in Christendom.

Of course. If you want to be frightfully sophisticated about people's *real* motives and claim that these are *not* the rules of bourgeois life, that capitalists are a pack of liars and thieves, you will need to explain why you get indignant when the rules are violated, and why in your daily transactions you assume they will be obeyed. Breaches of contract and negligent torts are worth worrying about, but they are not the central business of business, which is talking people into cooperation to get the job done.

Trust, of course, runs stock markets. The rumor of the Street determines the price of stock, at any rate within limits of fundamentals---though the very fundamentals, such as imagined futures sales and returns, or the fairy dust of the Federal Reserve Board, are themselves often sweet talk. Trust and friendship, therefore, make possible speculative bubbles, from the tulip mania of the 1630s to the dot-com boom of the 1990s. The very fact of capitalism's speculative instability, in other words, argues for an entirely new prevalence of belief in strangers. "Credit" is from *creditus*, "believed." Each of the hundred-odd quotations in the *Oxford English Dictionary* illustrating the noun and the verb date from after 1541, and most of the commercial quotations from the 16<sup>th</sup> century are suspicious of it. An act of 34-35 Henry VIII (that is, 1542) noted that "sundry persons consume the substance obtained by credit of other men." Shame on them. Contrast the neutral language of Locke in 1691: credit is merely "the expectation of money within some limited time." A shift in talk had taken place, 1542-1691, and a shift in the ideological support for capitalism (McCloskey, forthcoming).

A business cycle based on pyramids of credit was therefore impossible in the distrustful 16<sup>th</sup> century and before. The macro-economy could in earlier times rise and fall, of course, but from harvest booms and busts, wars and pogroms, not from credit booms and busts. In those olden days God's hand, not human beliefs, made for aggregate ups and downs. Medieval and early modern people trusted only allies, and had wise doubts even concerning some of them: "How smooth and even they do bear themselves!/ As if allegiance in their bosoms sat,/ Crowned with faith and constant loyalty" (*Henry V*, II, ii, lines 3ff). Pre-moderns had to keep faith with God and with their lords temporal. Late moderns keep faith with the market and with their friends, and build upon credit.

On this theory the episodes of disorder and unemployment in capitalism from the 1630s in Holland, and from 1720 in Northern Europe generally, arose from the virtues of capitalism, not from its vices, from its trustworthiness, not from its greed. To be more exact: the business cycle arose from trustworthiness breaking down suddenly in an environment of quite normal human greed for abnormal gain, the accursed love for gold which has characterized human beings since the Fall. What is novel in capitalism is the faithful trust, generated by talk. Why do people ride on airplanes at great expense to have sit-downs with bankers or customers or Mafia godfathers? To generate the trust to do business with.

\* \* \* \*

Another example. "A gap persists," writes the game theorist Judith Mehta, "between accounts of behavior framed by rational choice theory and experimental evidence of how people actually behave in a bargaining situation" (1993, p. 85). The way people frame the story they are in, the meaning of the story as much as the plain facts, changes the outcome. A "bargaining situation" would be, for example, that of two people who meet in the middle of the Sahara, one with food only, the other with water only. At what ratios will they trade? The



solutions are obviously multiple. If Ms. Jones, with her water jug, is a canny bargainer, while Mr. Brown, the food fellow, is a bit of a simpleton, you get one solution, favorable to Jones. If the skills at talking and thinking are reversed, you get another. If Jones and Brown are Rawlsian, they share the water and the food exactly equally, because behind a veil of ignorance as to what position they are in, that is the best solution, supposing (as the Rawls of *A Theory of Justice* did quite arbitrarily did) that they are both risk averse. . . and if one is not much taller than the other; if one does not have stored fat and the other does; if they can reach reflective equilibrium; if they have somehow become before the story begins ethical actors; if they are Moslems; if they are Buddhists; if, if, if. The two may wish to be fair. But, Mehta observes, the word "'fair' does not have some singular, objective meaning" (p. 94). We make the meaning, through talk.

As Mehta puts it, "real individuals ascribe particular and shifting identities to themselves and their opponents in a bargaining situation (for example, as 'friends' or 'non-friends,' or as partners in a relationship). . . . They adopt a particular set of expectations and behavioral responses contingent on the meaning they ascribe" (p. 93). These are roles we assign in stories we tell. An example is the role---literally, the theoretical, fairy-tale role---played by the chairman of the Federal Reserve Board in "setting" the interest rate. There is no evidence that Ben Bernanke actually "sets" the world interest rate. The notion that he does so is impossible, though a wildly popular tale, considering the bit of information that the portfolio he has influence over is a tiny portion of the loanable funds available in the world's capital markets. But the exchanges dance, at least in the short run, to Ben's tune, because of the heroic story that people tell about the meetings of the Fed open market committee.

\* \* \* \*

One can go on like this. The best tactic, though, is to go back to the rhetoric of economics itself, looking hard at the metaphors economists use and noting the language games supposed in them. Take consumption. Imagining having ice cream to consume entails a language of thought (a point that the philosopher Jerry Fodor makes); that is, choice entails a language, an internal debate (as Aristotle pointed out), even a rhetoric. This is true of animals, and certainly of Crusoe on his island alone. He said so. The human ability to imagine is merely a more extreme form of choice-making common to all living things. But it *is* extreme. A bird imagines (we suppose) a nest of a species-particular kind. But only language-using humans, so far as we can gather from watching whales and elephants and chimps a little, can imagine a thousand different forms of Crusoe's cave and compound, those other worlds and other seas.

The very choice of technique, the tough-minded consideration of "production functions," involves language. How things are made with recipes will entail talk. "Take two eggs. . . ." The books of recipes that Paul Samuelson characterized as "the production function" are informational, and this is as far as economics gets in thinking about them. It is the conduit metaphor again communication as bits of information. But books of recipes are persuasive, too. "Hmm: that looks good." A chemical engineer must be persuaded that this or that technique he has heard of does in fact work as advertised, and indeed trade magazines directed at him are quite elaborate exercises in persuasions-for-a-sophisticated-audience, sweet talk of a professional sort. Look for example at the *Journal of the American Medical Association*, its articles, its editorials, its ads.

Likewise working. The metaphor of a production function must always involve getting people to *do* the job---*take* the eggs, *adopt* the technique, *arrive* on time. Organizing other

humans obviously involves language, about which popular books about management obsess. About a third of the business books on the airport rack are devoted to rhetoric. Count it the next time you're in an airport. Management, I noted, is the great realm of sweet talk in a free society---not so in a society of status and instant obedience backed by swords. And not so in a society of utter routine, the steady state, *Groundhog Day*, even if the workers are otherwise free. If every question of what to do is already answered, then people just do it, without the persuasive, "John, we want you to go on the road next month to consult with our big client in Milwaukee. it is an important assignment."

The management need not be suited and tied. Any human cooperation in a task requires language, at any rate for a new, non-routine task. A master electrician needs language to tell his journeyman to push the wire further behind the wall. The catcher signals the next pitch, the pitcher shakes off the sign, the catcher tries another. They are speaking, and persuading.

Social clotting can stop persuasion, well short of any purely syntactic inability to express this or that. If a worker resents every order, unwilling to imagine himself a member of a sacred Team or unwilling to try to see the economic point of the order (perhaps because he does not give a hoot whether the customer is well served, or whether the Team wins), then cooperation breaks down. A society in which low status people---women, blacks, untouchables, young people---are not listened to by high status people will forego a gain from cooperation. The point is similar to one defense of classic democratic theory, namely, that the more opinions that are expressed the better can the society choose the best ones. A mechanical form of the argument appears in the voting schemes of Condorcet. A less mechanical version is the advocacy of free speech by John Stuart Mill, and Lord Bryce's phrase, adopted enthusiastically by the economist Frank Knight, "government by discussion." The economist Scott Page has brilliantly discussed diversity in such terms (Page 2007). The question is how big the loss is from government by politburo as against government by discussion. The experiments in the 20<sup>th</sup> century with communism suggests that the loss is big, in treasure and in spirit.

\* \* \* \*

A creative conversation, whether in an economy or a seminar room or a jazz performance, has to be unpredictable. If it were predictable it would not be creative. Or to put it the other way, routine conversations---revealingly we call them "formulaic"---do not yield surprises. Much of economic life is surprising, the Greatest Surprise being the modern economic growth that increased the real income per head of, for example, the average Finn by a factor of 30 from 1800 to the present. Even the small parts of the economy are surprising, or else (to make the argument still another way) they would already have been done. If opening a computer service store in your neighborhood turns out to be what businesspeople call a "good business plan" it makes supernormal profits. It was surprising: no one had thought of it before, which is why that ecological niche still earned profits. Einstein's papers in his *annus mirabilis* of 1905 were all of them surprising. *Prudence-only models cannot account for surprises.*

Adam Smith was a professor of moral philosophy, not a student of prudence only. Economics since him, in Marxism and in Samuelsonianism, has become the exclusive study of Mute Max U, that unattractive character---indeed, literally an inhuman, sociopathic fellow, who never stoops to exercise voice. He is a character whom Jeremy Bentham invented, Karl Marx politicized, Paul Samuelson mathematized, Gary Becker applied to everything, and Richard Posner adduces to get that nonsense-upon-still "justice" out of jurisprudence. I want economics

to stop obsessing about Mute Max U and become "humanistic" in a particular, academic sense. I want it to take seriously, as old Adam did, "the humanities," and become what the French revealingly call a "*science humaine*."

What this would mean is that we economists would deal with fully human characters---real ones like Madame Bovary and Jesus of Nazareth. It would mean that we would acknowledge in our models (realizing at last that a "model" is not always just the same thing as "a Mute Max U formulation") all the human virtues: prudence, yes, but also justice, temperance, courage, faith, hope, and love. And the corresponding vices, alas.

### Partial References

- Akerlof, G. (2006). The missing motivation in economics. Manuscript of presidential address to the American Economic Association. Retrieved from [http://www.aeaweb.org/annual\\_mtg\\_papers/2007/0106\\_1640\\_0101.pdf](http://www.aeaweb.org/annual_mtg_papers/2007/0106_1640_0101.pdf)
- Arrow, Kenneth J. 1951. *Social Choice and Individual Values*. New York: Wiley; and London: Chapman & Hall.
- Boulding, K. E. (1958). *The skills of the economist*. Cleveland, OH: Howard Allen.
- Fodor, Jerry.
- Habermas, J. (1984/1987). *The theory of communicative action (vols. 1-2)*. (T. McCarthy, Trans.). Boston: Beacon Press. (Original work published in 1981).
- Hayek, F. (1945, Sept.). The use of knowledge in society. *American Economic Review*, 35, 519-530.
- Henrich, J., Boyd, R., Bowles, S., Camerer, C., Fehr, E., & Gintis, H. (2004). *Foundations of human sociality: Economic experiments and ethnographical evidence from fifteen small-scale societies*. Oxford: Oxford University Press.
- Hirschman, A. O. (1970). *Exit, voice, and loyalty: Responses to decline in firms, organizations, and states*. Cambridge, MA: Harvard University Press.
- Hobbes, T. (1914). *Leviathan*. London: J. M. Dent (Original work published in 1651).
- Ingram, Paul, and Peter W. Roberts. (2000). Friendship among competitors in the Sydney hotel industry. *American Journal of Sociology* 16 (Sept): 387-423.
- Jonung, Christina, and Charlotte Ståhlberg. (2008). Reaching the top: On gender balance in the economics profession." *Econ Journal Watch*, May.
- Kirzner, I. M. (1979). Knowing about knowledge: A subjectivist view of the role of information. In I. Kirzner, *Perception, opportunity, and profit: Studies in the theory of entrepreneurship* (pp. 137-153). Chicago: University of Chicago Press.
- Klamer, A., & McCloskey, D. (1995, May). One quarter of GDP is persuasion, *The American Economic Review*, 85 (2), 191-195.
- Knight, Frank. (1923). The ethics of competition. *Quarterly Journal of Economics*, reprinted as pp. 33-67 in Knight 1935. *The Ethics of Competition*. With a new introduction by Richard Boyd. New Brunswick, NJ: Transaction Publishers, 1997.
- Lodge, D. (1988/1990). *Nice work*. Harmondsworth: Penguin.
- Marschak, J. (1968, May). Economics of inquiring, communicating, deciding. *American Economic Review*, 58, 1-18.

- McCloskey, D. N. (1985/1998). *The rhetoric of economics*. Madison: University of Wisconsin Press.
- McCloskey, D. N. (1990). *If you're so smart: The narrative of economic expertise*. Chicago: University of Chicago Press.
- McCloskey, D. N. (1994). *Knowledge and persuasion in economics*. Cambridge: Cambridge University Press.
- McCloskey, D. N. (1997). *The vices of economists; the virtues of the bourgeoisie*. University of Amsterdam Press & University of Michigan Press.
- McCloskey, D. N. (2000). *How to be human\* \*though an economist*. Ann Arbor: University of Michigan Press.
- McCloskey, D. N. (2002). *The secret sins of economics*. Chicago: Prickly Paradigm Press.
- McCloskey, D. N. (2006). *The bourgeois virtues: Ethics for an age of commerce*. Chicago: University of Chicago Press
- McCloskey, D. N. (Oct, 2010). *Bourgeois dignity: Why economics can't explain the modern world*. Chicago: University of Chicago Press.
- McCloskey, Deirdre N., and Stephen Ziliak. (2008.) "Signifying Northing: A Reply to Hoover and Siegler." *Journal of Economic Methodology* (March).
- Mehta, J. (1993). Meaning in the context of bargaining games--Narratives in opposition. In Henderson, W., Dudley-Evans, T., & Backhouse, R. (Eds.). *Economics and Language*, pp. 85-99. London: Routledge.
- Millermaier, S. (2007, Spring). If the bourgeois are so virtuous, why don't English professors think so? Anti-linguistic 'virtue' in an age of corporate ethics. Unpublished paper for *Communications 594, The Economy and Language*. Department of Communication, University of Illinois at Chicago.
- Mirowski, Phillip. 1989. *More heat than light: Economics as social physics, physics as nature's economics*. Cambridge: Cambridge University Press.
- Nutter, J. Warren. 1979. "On Economism." *Journal of Law and Economics* 22 (Oct): 263-268.
- Origo, I. (1986). *The merchant of Prato: Francesco di Marco Datini, 1335-1410*. Boston: Nonpareil. Original work published in 1957.
- Ostrom, E., Gardner, R., & Walker, J. (1994). *Rules, games, and common-pool resources*. Ann Arbor: University of Michigan Press.
- Page, Scott E. (2007). *The Difference: How the power of diversity creates better groups, firms, schools, and societies*. Princeton: Princeton University Press.
- Reddy, M. J. (1979). The conduit metaphor---A case of frame conflict in our language about language. In A. Ortony (Ed.), *Metaphor and thought* (pp. 284-324). Cambridge: Cambridge University Press.
- Rubinstein, A. (2000). *Economics and language: Five essays*. Cambridge: Cambridge University Press.
- Samuelson, P. A. (1947). *The foundations of economic analysis*. Cambridge: Harvard University Press.
- Smith, A. (1978/1982). *Lectures on jurisprudence*. R. L. Meek, D. D. Raphael, & P. G. Stein (Eds.). Glasgow Edition. Oxford: Oxford University Press. Original work published in 1762-63/1766.
- Stigler, G. (1961, June). The economics of information. *Journal of Political Economy* 69. Reprinted in Stigler, G., (1968), *The organization of industry* (pp. 171-190). Homewood. IL: Irwin.

- Wallis, J., & North, D. C. (1986). Measuring the transactions sector in the American economy. In S. Engerman and R. Gallman (Eds.), *Long term factors in American economic growth*. Chicago: University of Chicago Press.
- Wittgenstein, Ludwig. (1963). *Philosophical investigations*, Vol. 1. New York: The Macmillan Company.
- Ziliak, Stephen, and Deirdre N. McCloskey. 2008. *The cult of statistical significance: How the standard error costs us jobs, justice, and lives*. Ann Arbor: University of Michigan Press.