

rhetoric. Rhetoric is the study and practice of persuasive expression, an alternative since the Greeks to the philosophical programme of epistemology. The rhetoric of economics examines how economists persuade – not how they say they do, or how their official methodologies say they do, but how in fact they persuade colleagues and politicians and students to accept one economic assertion and reject another.

Some of their devices arise from bad motives, and bad rhetoric is what most people have in mind when they call a piece of writing 'rhetorical'. An irrelevant and inaccurate attack on Milton Friedman's politics while criticizing his economics would be an example, as would a pointless and confusing use of mathematics while arguing a point in labour economics. The badness does not reside in the techniques themselves (political commentary or mathematical argument) but in the person using them, since all techniques can be abused. Aristotle noted that 'if it be objected that one who uses such power of speech unjustly might do great harm, that is a charge which may be made in common against all good things except virtue itself'. Cato the Elder demanded that the user of analogy (or in our time the user of regression) be *vir bonus dicendi peritus*, the good man skilled at speaking. The protection against bad science is good scientists, not good methodology.

Rhetoric, then, can be good, offering good reasons for believing that the elasticity of substitution between capital and labour in American manufacturing, say, is about 1.0. The good reasons are not confined by syllogism and number. They include good analogy (production is *just like* a mathematical function), good authority (Knut Wickssell and Paul Douglas thought this way, too), good symmetry (if mining can be treated as a production function, so should manufacturing). Furthermore, the reasonings of syllogism and number are themselves rhetorical, that is, persuasive acts of human speech. An econometric test will depend on how apt is an analogy of the error term with drawings from an urn. A mathematical proof will depend on how convincing is an appeal to the authority of the Bourbaki style. 'The facts' and 'the logic' matter, of course; but they are part of the rhetoric, depending themselves on the giving of good reasons.

Consider, for example, the sentence in economics, 'The demand curve slopes down.' The official rhetoric says that economists believe this because of statistical evidence – negative coefficients in demand curves for pig iron or negative diagonal items in matrices of complete systems of demand – accumulating steadily in journal articles. These are the tests 'consistent with the hypothesis'. Yet most belief in the hypothesis comes from other sources: from introspection (what would I do?); from thought experiments (what would they do?); from uncontrolled cases in point (such as the oil crisis); from authority (Alfred Marshall believed it); from symmetry (a law of demand if there is a law of supply); from definition (a higher price leaves less for expenditure, including this one); and above all, from analogy (if the demand curve slopes down for chewing gum, why not for housing and love too?). As may be seen in the classroom and seminar, the range of argument in economics is wider than the official rhetoric allows.

The rhetoric of economics brings the traditions of rhetoric to the study of economic texts, whether mathematical or verbal texts. It is a literary criticism of economics, or a jurisprudence, and from literary critics like Wayne Booth (1974) and lawyers such as Chaim Perelman (1958) much can be learned. Although its precursors in economics are methodological criticisms of the field (such as Frank Knight, 1940), censorious joking (such as Stigler, 1977), and finger-wagging presidential addresses (such as Leontief, 1971, or Mayer, 1975), the main focus of the work has been the analysis of how economists seek to persuade, whether good or bad (Klamer, 1984; Henderson 1982; Kornai, 1983; McCloskey, 1986). Econometrics has its own rhetorical prehistory, more self-conscious than the rest (Leamer, 1978), reaching back to the founders of decision theory and Bayesian statistics.

The movement has parallels in other fields. Imre Lakatos (1976), Davis and Hersh (1981), and others have uncovered a rhetoric in mathematics; Rorty (1982), Toulmin (1958), and Rosen (1980) in technical philosophy; and numbers of scientists in their own fields (Polanyi, 1962; Medawar, 1964). Historians and sociologists of science have since the 1960s accumulated much evidence that science is a conversation rather than a mechanical procedure (Kuhn, 1977; Collins, 1985). The analysis of conversation from scholars in communication and literary studies (Scott, 1967) has provided ways of rereading various fields (a sampling of these is contained in Nelson et al., 1987).

A rhetoric of economics questions the division between scientific and humanistic reasoning, not to attack quantification or to introduce irrationality into science, but to make the scientific conversation more aware of itself. It is a programme of greater, not less rigour and relevance, of higher, not lower standards in the conversations of mankind.

DONALD N. McCLOSKEY

See also PHILOSOPHY AND ECONOMICS.

BIBLIOGRAPHY

- Booth, W. 1974. *Modern Dogma and the Rhetoric of Assent*. Chicago: University of Chicago Press.
- Collins, H.M. 1985. *Changing Order: replication and induction in scientific practice*. London: Sage.
- Davis, P.J. and Hersh, R. 1981. *The Mathematical Experience*. Boston: Houghton Mifflin.
- Henderson, W. 1982. Metaphors in economics. *Economics* 18(4), No. 80, Winter, 147-53.
- Klamer, A. 1984. *Conversations with Economists: new classical economists and opponents speak out on the current controversy in macroeconomics*. Totowa, NJ: Rowman and Allanheld.
- Knight, F. 1940. 'What is truth' in economics? *Journal of Political Economy* 48, February, 1-32.
- Kornai, J. 1983. The health of nations: reflections on the analogy between medical science and economics. *Kyklos* 36(2), June, 191-212.
- Kuhn, T. 1977. *The Essential Tension: selected studies in scientific tradition and change*. Chicago: University of Chicago Press.
- Lakatos, I. 1976. *Proofs and Refutations: the logic of mathematical discovery*. Cambridge: Cambridge University Press.
- Leamer, E. 1978. *Specification Searches: ad hoc inferences with nonexperimental data*. New York: Wiley.
- Leontief, W. 1971. Theoretical assumptions and nonobserved facts. *American Economic Review* 61(1), March, 1-7.
- McCloskey, D.N. 1986. *The Rhetoric of Economics*. Madison: University of Wisconsin Press.
- Mayer, T. 1980. Economics as a hard science: realistic goal or wishful thinking? *Economic Inquiry* 18(2), April, 165-78.
- Medawar, P. 1964. Is the scientific paper fraudulent? *Saturday Review* 1, August.
- Nelson, J., Megill, A. and McCloskey, D.N. (eds) 1987. *The Rhetoric of the Human Sciences: papers and proceedings of the Iowa Conference*. Madison: University of Wisconsin Press.
- Perelman, C. and Olbrechts-Tyteca, L. 1958. *The New Rhetoric: a treatise on argumentation*. Notre Dame: University of Notre Dame Press.
- Polyani, M. 1962. *Personal Knowledge: towards a post-critical philosophy*. Chicago: University of Chicago Press.
- Rorty, R. 1982. *The Consequences of Pragmatism: essays*. Minneapolis: University of Minnesota Press.
- Rosen, S. 1980. *The Limits of Analysis*. New York: Basic Books.
- Scott, R. 1967. On viewing rhetoric as epistemic. *Central States Speech Journal* 18(1), February, 9-17.
- Stigler, G.J. 1977. The conference handbook. *Journal of Political Economy* 85(2), April, 441-3.
- Toulmin, S. 1958. *The Uses of Argument*. Cambridge: Cambridge University Press.