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Accounting as the master metaphor of economics

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It is now sixteen or seventeen years since I saw the Queen of France, then the Dauphiness, at Versailles. . . . Little did I dream that I should have lived to see disasters fallen upon her in a nation of gallant men. . . . I thought ten thousand swords must have leaped from their scabbards to avenge even a look that threatened her with insult. But the age of chivalry is gone. That of sophisters, economists, and calculators, has succeeded; and the glory of Europe is extinguished for ever.

Edmund Burke, *Reflections on the Revolution in France*, Everyman ed., p. 73

To outsiders the economist and the accountant look similar, both the calculators in whom the glory of Europe is extinguished for ever. Economists see themselves, however, as distinct, and distinctly more gallant. They see themselves variously as worldly philosophers or social physicists or empirical scientists – the ideal varies, but is anyway distinct from mere keepers of account books, grey men on tall stools.

Yet most economists do not know what they scorn. Few have experience in business. Few have taken a course in accounting. A business degree, in which such a course might be required, is viewed as poor preparation for economics. Mathematics or even history are thought to be better, the less about the world of business the better; ancient history, perhaps, or algebraic topology. Most economists have not read an article on accounting. In fact, most are startled to learn of the existence of academic articles on accounting. Academic accounting? One might as well have academic plumbing.

Economics, however, is dominated by accounting ideas. Most economists would be surprised by the proposition, but in fact their field is ruled

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by little else. Cost and benefit, rationality and calculation depend on a set of books as a closed system, covering by definition whatever is worth covering. Stocks and flows, capital and income; output net of depreciation; expenditure equals cost; the circular flow; scarcity; choice under constraints. Economists think and calculate with accounting.

A recent instance is an essay by the Nobel-prize economist Robert Solow and his colleague at the Massachusetts Institute of Technology, Peter Temin, 'The inputs for growth', a contribution to the seventh volume of *The Cambridge Economic History of Europe* (1978). The paper reviews the logic of the so-called 'growth accounting' initiated by an article of Solow's in 1957. It is a discussion of accounting conventions lightly spiced with economic theory. The tone is ironic self-deprecation, characteristic of Solow, with much talk of it being 'merely' accounting. Within a page: 'We want to account for changes in outputs by changes in the various inputs. "Account for" is perhaps more descriptive than "explain". . . . In order to perform this accounting, we need to know something about . . . the "marginal products". . . . These elasticities are natural concepts in the kind of accounting that we are trying to do' (pp. 7-8). And later, in a typical Solovian sentence, 'Suitably checked, this is probably the only way that the accounting exercise can be done, if it can be done at all' (p. 22). It is a mere 'exercise', and probably cannot be done, though we economists, wild and crazy guys, are doing it.

At a conference recently the distinguished economist Thomas Schelling recalled a visit to Yale in the 1950s of another distinguished economist, Peter Bauer. During the talk Bauer had asserted somewhat mysteriously that economists really knew only five things – distinguishing what they *really* knew and non-economists did not know from what the economists might be willing to defend on even days of the month or what they thought somewhat plausible when the moon was new. Schelling did not get around to asking Bauer which things he had in mind, and so had to reconstruct them himself. He concluded that what economists *really* know were accounting truths: (1) the national accounts add up, national product equalling national income; (2) the balance of foreign payments adds up; (3) the money supply is 'created' by a system of banks in which each holds as a reserve only a fraction of the money deposited with it; and a couple of demographic truths, which might be illustrated by the growth of the unmarried population by exactly two when a husband and wife get a divorce. Learning to think like an economist consists in good part of learning to speak such bits of accounting logic. As Adam Smith said in the first sentence of *An Enquiry into the Nature and Causes of the Wealth of Nations*, affirming the truth that national income equals national product, 'The annual labour of every nation is the fund which originally supplies it with all the necessaries and conveniences of life which it annually consumes.'

In view of its importance in their work the economists could be expected to have an interest in accounting. Once they did. But now they don't. For all practical purposes the accounting metaphor in economic discourse is dead and its reputation buried with it. Having been participants in the shunning of accountants, we economists are now, in the company of accountants, impelled to ask what would happen if the accounting metaphor were to be revived.

ACCOUNTING AS THE MASTER METAPHOR OF BOURGEOIS CULTURE

First the economists would have to change their thinking about the history of economics. The shunning of accounting is plain in all the histories. Almost none discusses the interaction between economics and accounting. Joseph Schumpeter's *History of Economic Analysis* (1954), the most comprehensive and exhaustive, contains only three references to accounting. A reference to Fra Luca Pacioli and the idea of double-entry bookkeeping was deleted by Schumpeter but then reinstated by his wife, who edited the unfinished manuscript after his death. Irving Fisher's *Nature of Capital and Income* (1906) gets a mention by Schumpeter as the first economic theory of accounting; of its content the reader is left uninformed. And in a brief review of recent developments in the applied fields (c. 1950) Schumpeter comments on the separation from business economics, which includes accounting and general economics. With apparent regret he notes that 'all we could do would be to list the results of explorations of business practice undertaken by business economists, which failed to inspire general economists as completely as the advance of economic theory failed to inspire business economists' (p. 945). He commends Fisher for having taken 'a first step toward co-ordinating the economist's and the accountant's work' (p. 945). That is all.

Economists evidently did not learn the accounting directly from accountants. One cannot learn from people while sneering at them. From where, then?

They learned accounting, we would argue, from a bourgeois culture that took its models for life from the language of business. Accounting as a metaphor, of course, existed before the dominance of the bourgeoisie. St Peter kept his books in heaven, and classical literature was littered with business jargon. Yet the businessman as hero awaited a businesslike age. Some of the heroes were real people. In his *Autobiography* (1793) Benjamin Franklin, a businessman of some acumen, tells famously how he set a course for virtue by keeping a daily account. Somewhat incongruously, in *The Protestant Ethic and the Spirit of Capitalism* Max Weber used Franklin as the type of Protestant businessman, in part because of his moral accounting. And, although the fire of Protestantism may have

cooled somewhat by the time it reached Franklin (who fought temptation mainly by surrendering to it), the spirit of accounting did none the less burn brightly in the eighteenth century.

But the greatest heroes of the account book were fictional, and the first among these was Robinson Crusoe (1719), the bourgeois as Odysseus. The details of business intrude on every page of Defoe's book and make it, technically speaking, realistic (the same is true of Defoe's *Moll Flanders*, published a few years later, with a feminine twist). After twenty-eight years on the island Crusoe's accounts were good to commercial standards: 'I found at the End of my Account I had lost a Day or two in my Reckoning' (p. 83). Before being shipwrecked, Crusoe 'brought home L. 5.9 Ounces of Gold Dust for my Adventure, which yielded me in London at my Return, almost 300.l.'. The accounting is not merely corroborative detail to lend an air of verisimilitude, but the spring of moral action: the accounting of the £300 gain 'fill'd me with those aspiring Thoughts which have since so compleated my Ruin' (p. 16). Once on the island 'I now began to consider seriously my Condition . . . and I drew up the State of my Affairs in Writing. . . . I state it very impartially, like Debtor and Creditor, the Comforts I enjoy'd, against the Miseries I suffer'd' (p. 53). The accounts are an occasion for moral reflection (as they were in an earlier literature of spiritual accounting): 'we may always find . . . something to comfort our selves . . . on the Credit Side of the Account' (p. 54).

When *The Life and Adventures of Robinson Crusoe* was first published, the technical details (to list those on p. 31 alone) of diversifying a portfolio, business correspondence, trust among merchants, the supplying of plantations and the hiring of labour were new as central concerns of literature. Defoe's story is one of foresight, and similar in this respect to the *Odyssey* or the *Aeneid* or *Pilgrim's Progress*. But Crusoe thinks ahead on matters of bread and butter further even than wily Odysseus or pious Aeneas, and certainly more than poor, simple Christian. He thinks out even to his old age, scheming to raise goats in an elaborate system of pasturage to feed himself when too feeble to hunt: 'for I consider'd from the beginning how I would provide for the Accidents that might happen, and for the time that was to come . . . even after my Health or Strength should decay' (pp. 51f).

Here – not in the pages of eighteenth-century philosophers, who were concerned chiefly with moral sentiments – is Economic Man. Defoe is cannily realistic about the type. Crusoe calculates, but also frequently and disastrously miscalculates, as when he makes with much labour a dugout canoe heavier than he can move. Crusoe *discovers* rational thought, put there by God, in the necessities of choice – this 'Thought of breeding up some tame Creatures, that I might have Food when my Powder and Shot was all spent' occurs to him two months into his stay (p. 61, 27 December

1658). He reinvents the arts and sciences by sheer methodical accounting: 'as Reason is the Substance and Original of the Mathematicks, so by stating and squaring every thing by Reason, and by making the most rational Judgment of things, every Man may be in time Master of every mechanic Art' (p. 55).

One might argue, in short, that the *Homo economicus*, or *Homo calculator*, of the eighteenth century was an invention of novelists and poets, not of economists and philosophers. Adam Smith is certainly a social accountant, a tradition already by his time a century old in Britain; his pages are filled with back-of-the-envelope accounting, such as filled also the pamphlets of projectors. (Swift's *A Modest Proposal* [1729] is of course the leading parody of the calculating social improver: 'I do therefore humbly offer it to public consideration that of the hundred and twenty thousand children, already computed, twenty thousand may be reserved for breed. . . . A child will make two dishes at entertainment for friends; and . . . will be very good boiled on the fourth day, especially in winter. I have reckoned upon a medium that a child . . . in a solar year if tolerably nursed increaseth to twenty-eight pounds'). Adam Smith and his contemporaries, however, were no modellers of individual greed, no late twentieth-century neoclassical economists. It is the playwrights, poets and novelists of the eighteenth century who provide the types of calculating individuals, from Defoe's shipwrecked merchant to Jane Austen's would-be mothers-in-law. The classical economists late into the nineteenth century were behind the times in the representation of bourgeois character and his methodical accounting.

THE DEMISE OF THE ACCOUNTING METAPHOR IN ECONOMICS

Instructed by literary artists, economists were accustomed by the nineteenth century to view the economy as analogous to a single household or business. Léon Walras' great book on *The Elements of Pure Political Economy* (1874/1902) is filled with explicit accounting. The relation between accounting and economics became particularly intimate during the first half of the twentieth century. The circular flow, or 'wheel of wealth', was an identification of the linkages among the accounts of households and businesses. It was invented by one Johanssen in 1908 and perfected by Frank Knight during his tenure at the University of Iowa (see Patinkin, 1981: at about the same time Chester Phillips of Iowa was inventing that other piece of accounting in economics, the money multiplier).

Again, Irving Fisher's *The Nature of Capital and Income* (1906) was 'an attempt to put on a rational foundation the concepts and fundamental theorems of capital and income. It therefore forms a sort of philosophy of economic accounting, and, it is hoped, may supply a link long missing

between the ideas and usages underlying practical business transactions and the theories of abstract economies' (p. vii). Fisher wanted to make the foundations of economics secure, by beginning with those accounting facts that economists really do know.

Fisher exposed the errors arising from poor accounting for capital and income. Adam Smith had defined capital as wealth that yields *cash* revenues, and did not therefore consider owner-occupied houses as part of the nation's wealth. The benefits derived from living in one's own house are a revenue from the house, Fisher argued: income may be non-pecuniary. John Stuart Mill had endorsed the wage fund theory of wages, according to which more workers would get lower wages out of a fixed wage fund held by firms. The theory mixes stocks and flows: the wage fund is a stock but the wage payments a flow. Fisher argued that Smith and Mill had obscured the joint determination of income and capital by confusing the two; and indeed Milton Friedman has argued that the confusion persists to the present (Friedman, 1976, Chapter 17).

The accounting foundation that Fisher put in place was not uncontroversial. Income is consumption alone, said Fisher. He excluded savings because he did not want to add discounted and undiscounted values: the income from savings is after all to be earned later, after the investment matures. The point is a reasonable one from the point of view of accounting, but economists have disagreed. Their preference has been to count as income all value added regardless of its use in the circular flow. Income should equate to today's consumption plus today's addition to wealth (which is saving).

Finding the accounting concepts to match economics on the macro level kept economists occupied throughout the 1920s and 1930s. In Sweden the economist Erik Lindahl pointed out that the time of measurement mattered. Savings that would be derived from the value of the opening stock as measured at the beginning date would be different from savings that are determined in hindsight, when all facts are in: that is, Lindahl distinguished between 'ex ante' and 'ex post', the one a matter of expectation and the other a matter of accounting after the fact. Keynes was to adopt Lindahl's distinction and the accounting steered the discourse of macroeconomics. Jens-Christoph Andvig has argued recently that the accounting over-steered the economics, being a substitute in the 1920s and 1930s for explicitly structural thinking of the sort that later became popular (Andvig, 1989). Economists thought that accounting could relieve them of having to think through explicitly the tangle of relations in their new and complex models of the economy.

Accounting reasoning also steered the new collection of economic data. The economic statisticians such as Bowley, Stamp, Clark, Kuznets, Stone, Prest and Goldsmith were making estimates of national income well before the theorists had use for it. John Hicks (1904-89) tried in the early 1940s

to bring economics and accounting closer together. His textbook, *The Social Framework: An Introduction to Economics* (1942 and later editions), treats in great detail the accounts for individual households, businesses, the government and the economy as a whole. 'The chapters on definitions, which formed so indigestible a portion of the old textbooks, have been kindled into life by the work of economic statisticians. . . . If we want a name for it, it might be described as Social Accounting, for it is nothing else but the accounting of the whole community or nation, just as Private Accounting is the accounting of the individual firm' (p. vi). The book instructs the reader to distinguish stocks and flows, and to recognize how economic magnitudes are codetermined in a system of accounts. The student learns to think about economic events in the first instance as altering the accounts. In other words, the economic student is to begin his intellectual journey equipped with accounting tools. For a few years Hicks's book was popular, and accounting and economics walked together.

But Hicks's pedagogic plan was undermined by an event to which he himself had contributed, the advent of 'modernism' in economics (Klamer, 1990). Hicks set the tone for formalist and abstract reasoning that characterizes modernist economics (and modernist architecture, painting, philosophy, mathematics) in his best work, *Value and Capital* (1939), written a few years before the text. It is a purely theoretical work 'considered as the logical analysis of an economic system of private enterprise, without any inclusion of reference to institutional controls' (p. 7). The methods of general equilibrium and marginal utility analysis constitute the cornerstones of the book. The reader is made to think about the interdependence of individual choices. Although the approach does not preclude accounting reasoning – income for the household is a cost to the firm – the emphasis shifts to the *behaviour* of individuals. The accounting restrictions are pushed into the background. The book does not emphasize balance sheets and income statements, only the diagrams of indifference curves, supply and demand, and the like. The accounting is present but implicit, and the metaphor is silenced.

It was Paul Samuelson, however, who decisively killed the accounting programme. *The Foundations of Economic Analysis* (1947) added mathematics to the Hicksian diagrammatic exposition and persuaded economists to think about economic processes as the outcome of maximization under constraints. In his hands the individuals became abstractions, imagined as rational calculators. To be sure, accountants – and novelists – could take some credit for the Hicks-Samuelson view of the world. Constrained maximization, after all, could be understood as the pursuit of net worth subject to the constraints of balance sheets and income statements. The analysis requires a clear understanding of the difference between stocks and flows and the interdependency of, say, income and capital. In all his work Samuelson, trained in an older economics, has been sharply careful

with accounting facts (in his treatment of the 'theorem' that society is made better off by price fluctuations, for example [1972]). But like Hicks's *Value and Capital*, *Foundations* keeps the underlying accounting metaphor in the background. Balance sheets and income statements are suppressed and accounting principles left implicit. Perhaps equally importantly, Samuelson wrote the textbook that cast Hicks's *Social Framework* into the shade. *Economics* (1948) silenced the accounting metaphor in economics shortly after *The Social Framework* (1942) had given it voice. The few, boring lectures on the national accounts are the only occasions in most economic educations for self-conscious accounting. The lessons are not extended explicitly into the chapters on demand and supply. And students of economics see a balance sheet only once, in the discussion of the money multiplier, although their macro-economics depends on its specification.

Hicks was not pleased with the drift away from accounting issues, and became alienated from the revolution that he had set in motion. Encounters with his followers after the War suggested to him that his intentions were being misunderstood. His later writing, informed by accounting ideas, was largely ignored by economists under the spell of the modernist wizard Samuelson. Hicks could not adjust to thinking solely in terms of constrained maximization problems. He preferred to think about economic processes as they influenced the accounts of businesses and households. When asked in a recent interview (a year before his death) whether he would like to be remembered as the accountant of the economics profession, he responded with enthusiasm. To other economists Hicks's association with 'mere keepers of account books' must be an embarrassment. Hicks explained:

I have actually seen business decisions being made on the basis of projected balance sheets. I think that is the rational way to make a business decision. A lot of these mathematical models, including some of my own, are really terribly much in the air. They lost their feet off the ground.

(Klamer, 1989: p. XX)

Hicks as an old man disavowed his youthful, modernist and anti-accounting *Value and Capital*, for which he would in 1972 receive the Nobel Prize. He would have preferred to have received the Prize for his work in economic history and economic accounting.

THE INESCAPABILITY OF THE ACCOUNTING METAPHOR

The turn away from accounting to the making of models, however, did not elude the accountingness of economic questions. The debates among economists in the 1950s and 1960s turned again and again on matters of accounting. The burden of the government debt is an obvious case. View-

ing the nation as a single person, à la Crusoe, we evidently owe the national debt to ourselves: someone (some American, say) owns the government IOUs, and is paid by taxes collected from some other American. Close the books with a slam. The weeping for our grandchildren that usually accompanies newspaper editorials about the debt is seen to be needless: if we fought a big war in the 1940s, then we of the 1940s paid for it. But wait, says James Buchanan (who had participated in the last stages of the so-called 'London School of Economics debate on costs', another accounting matter): the account is incomplete; when a grandchild is *taxed* in 1989 to pay off a bond *voluntarily* purchased by his grandfather in 1944 the transactions do not offset, or else people would line up to pay taxes the way they lined up to buy war bonds (Buchanan, 1958).

Issues of finance turn on accounting, too. The burden of inflation, for example, depends on a close accounting. Surely it is not the case, as the newspapers assert, that everyone is hurt by inflation. A crude accounting would note that every dollar expended in higher prices ends up as a dollar on the income side. But wait, says Phillip Cagan, a student of Milton Friedman (who in turn participated in the accounting of direct and indirect taxes, arguing that in a closed set of accounts no free lunch could be earned from changing the form of taxation [Friedman, 1976: Chapter 3]): the account is incomplete; the holder of dollar bills is hurt on that account, even if he is better off on some other account (Cagan, 1956: esp. pp. 77-86).

The untangling of mistaken accounting has in fact been one of the chief activities of late twentieth-century economists. The famous IS-LM curve, invented in 1939 by Hicks as a rough-and-ready account (in another sense) of Keynes's theory of national income (Hicks, 1939), was defective chiefly in its accounting, as Hicks himself was to point out later: it mixed up capital accounts (in the LM curve) with income-expenditure accounts (in the IS curve), as it had to if it was going to represent Keynes's muddled insight. The theorists of macro-economics spent much of the next forty years attempting to repair the accounting.

A parallel case is the misunderstanding of the balance of payments, seen persistently as having to do with current expenditures (which is the balance of trade, a flow of goods for use) instead of capital accounts (which is the balance of payments, a monetary flow into and out of assets). Economists had to teach other economists to think in proper accounting terms, keeping the two separate for purposes of analysis (Johnson and Frenkel, 1976).

The accounting metaphors are not confined to macro-economics, though that is where they are most obvious, even to economists. Ronald Coase's 'theorem' of 1959, famous in economics, was merely a careful accounting of the costs and benefits from pollution. It is significant that Paul Samuelson, irritated by the conservative implications of the so-called 'theorem',

has asked haughtily, 'Where's the theorem?' It is in all candour no theorem (Coase made no such claim), or, if a theorem, a trivial corollary of Adam Smith's (and Edgeworth's and Arrow's and Debreu's) theorem: if property can move around easily, then it will get into the hands of the people who value it the most: if not, not. What gives Coase's paper its magical power, aside from its fine attention to legal detail, is the accounting framework it imposes on the world. Coase says, in effect, 'You have been accustomed to accounting the smokestacks as the "cause" of pollution, and therefore assuming automatically that they deserve to pay fines. Has it occurred to you that one might just as well account the breathers of the polluted air as *the* cause? And that leaving the pollution on the breathers might lead to the cheapest avoidance of the evil, when indeed it should be viewed on balance in the social accounts as an evil?' (cf. Coase, 1988: esp. pp. 174-9).

Likewise, the notion of 'human capital', invented by Theodore Schultz, is nothing more than an agreement to account human skills the same way that plant and machinery is accounted. In 1946 Schultz, later to win a Nobel prize for the work, spent a term based at Auburn University interviewing Alabama farmers in the neighbourhood (Schultz, 1988). One day he interviewed an old and poor farm couple and was struck by how contented they seemed. Why are you so contented, he asked, though poor? They answered: You're wrong, Professor. We're not poor. We've used up our farm to educate four children through college, remaking fertile land and well-stocked pens into knowledge of law and Latin. You can see that we're rich.

The parents had told Schultz that the *physical* capital, which economists think they understand, is in some sense like the *human* capital of education. The children now owned it. Once it had been rail fences and hog pens and mules. Now it was in the children's brains, this human capital. Of course the farm couple was rich. Do the accounting correctly. Both the hog pen and the Latin course are paid for by saving. Both are valuable assets for earning income, understanding 'income' to mean 'a stream of satisfaction'. Both last a long time but finally wear out. And the one piece of 'capital' can be made into the other. An educated farmer, because of his degree in agriculture from Auburn, can get a bank loan to build a hog pen; later he can sell off the part of the farm that has the hog pen to pay for another term for Junior and Sis up at Auburn, too.

Questions about the appropriateness of a set of accounts are questions about our use of language, constrained by the universe sitting out there, to be sure, but matters of human decisions about human usefulness. To account education as 'human capital' may be appropriate for understanding modern economic growth, for example, but may (a non-economist would say) devalue education from another point of view.

THE IMPLICATIONS OF A REVIVAL OF THE ACCOUNTING METAPHOR

To give an account is to impose a set of saliencies. Moral accounting takes place in economics, too. Is insider trading a terrible evil, to be met by jail terms? Or is it a justifiable part of managerial compensation? Are the laws against insider trading actually protecting the public or merely imposing higher costs of management on the economy? The answer depends in part on how the moral accounting is arranged. The closed system for the prosecution division of the American Securities Exchange Commission and the federal prosecutor for Manhattan is simple: if it's against the law it's bad. The closed system for economists is the efficient running of the economy: is it good for General Motors, and therefore good for mankind? The two accounting systems conflict, of course. What is more interesting is that recognizing them might make both more sophisticated. The bureaucrat in the Securities Exchange Commission might recognize his responsibilities to capitalism and the economist might recognize her responsibilities to moral education.

The moral education does not go all one way. The economics of illegal immigration can instruct the American worker that he might benefit from trading directly with Mexicans here rather than indirectly through commodity trade across the borders. More deeply, it convicts him and his intellectual leaders of selfishness: why should the present population of the United States, asks the economic accountant, be the relevant unit for moral thought? If migration (or for that matter the commodity trade) helps the poor of Mexico, should an American worker with two cars in the garage be able to bring it to a halt?

The metaphors of accounting, in other words, need not serve conservative political purposes. Accounting has always played a large part in feminism, showing for example the costs borne by women in the Second Shift after 'work'. Most economists have long felt that including housewives in the national income makes sense. It has seemed silly to think that we are better off by the full value of her salary when a housewife stops food preparation at home and goes to work at Sara Lee making ready-made food to save the time of housewives.

More radical programmes in economics have their accounting, too: a master metaphor drives all manner of economic thinking. As Schelling suggested in his story of Peter Bauer's Maxim, it is accounting identities that we economists know together. The Marxists have long had an accounting-driven programme – the transformation problem, calculations of surplus value and so forth. It is no accident that Marxist economists most directly met the neoclassical challenge on the field of accounting theory – the measurement of capital. The radical economist Geoffrey Harcourt was educated in Australia, and remarked that 'one virtue of an

Australian degree in economics is that students have to have at least one course in accounting. I believe that it is not possible to understand the workings of capitalism unless you have a nodding acquaintance with accountants' conventions and procedures. Certainly the best economists – Marx, Keynes, and Hicks, for example – knew this' (Harcourt 1982: 1; he puts this remark into action in Parker and Harcourt, 1969). The new neoclassical Marxists (Roemer, Elster *et al.*) are anti-accounting, bringing the Samuelson programme of modernism into Marxist economics, a trifle late.

The trend in economic and accounting research is plain enough. Open an economics journal after 1955, or an accounting journal after 1970, and you will find explicit mathematical modelling, with econometrics. All to the good, one might say, bringing a wider range of methods to these fields. Mathematics has provided splendid metaphors (if not the only ones) for the enlightenment of economics, and surely of accounting, too. If we moderns are wrong to make mathematics the only grammar of science, none the less it is an important one.

But along with the modelling, which might have broadened the discussion, has come a narrowing philosophy of science. The trend in many business and social science fields since the 1930s, in psychology, economics, political science, management, finance, sociology and for a long while now accounting has been towards 'modernism'.

By 'modernism' we mean the claim to practise science as we understood the term in secondary school. Extract from life if you can what is historical, value-laden, judgmental, ethical, cultural, tacit, skilful, smooth, curved – 'all things counter, original, spare, strange'; and what will be left is modernism. It consists of the simpler parts of science and scholarship. Modernism has urged us since the seventeenth century and with increasing stridency during the twentieth century to dismiss as doubtful or worse that which does not come from formal and quantitative experiments directed at testing the implications of higher-order axioms; it has urged us to leave strictly to the side the matters of moral force and human meaning. Modernism shows in the modernist music that has been written by formula and in the modernist architecture that has remade our cities into a mathematician's disturbed dream. It is mainly an academic creation, taking its ideas of science from the blackboard and its ideas of science policy from the army. It shows therefore in many parts of academic life, in academic procedures for promotion, for instance, which require not reading and reflection and earnest argument by the candidate's immediate colleagues but a putatively objective procedure resembling Prussian bureaucracy, and having many of its charms.

In accounting, but not in economics, mathematics is associated with libertarian politics. (Mathematical economics was early associated with general equilibrium and central planning, both hostile to individualism.)

Yet one does not need to love governments to dislike the narrowing of evidence to number and argument to form. It is by no means necessary, therefore, to be a non-mathematical socialist or a littérateur bent on devaluing what he cannot understand in order to think that modernism has served its purpose and needs now to be broadened by history, by literary self-consciousness and by common sense.

We bring news of such a broadening in economics, which accounting scholars have already begun. The accountant Wai Fong Chua, in a wide-ranging survey of the matter, notes for example that '[t]he use of the hypothetico-deductive model of scientific explanation is the most consistent characteristic of extant accounting research. . . . Hence there is a relative neglect of "soft" methods such as case studies' (1986: 608). The categories of 'hard' and 'soft' have been brought into question elsewhere, as by the anthropologist Roy D'Andrade, reacting to the once-fashionable sneering about Freud's 'subjective' methods: 'One cannot expect to improve upon Freud by observing less about human beings than he did' (Fiske and Shweder, 1986: 39). In his writings on accounting research Edward Arrington has carried the point further (1989, 1991; Arrington and Francis, 1989). Of the mechanical methods that hide the real business of science he remarks: 'Method becomes the grammar of research, and the veil of the search for Truth masks . . . the act of persuading, the need for consensus, and the fundamentally contestable nature of the ideologies reflected in "acceptable" research questions.' The British journal *Accounting, Organizations and Society* publishes work by Tinker, Cooper, Hayes, Burchell, Hopwood and others that strains at modernist narrowings.

Some economists, too, although weighty with scientific status and complacent about American capitalism, are beginning to wonder whether modernism is really enough for human scientists (McCloskey, 1985; Klamer, 1983). In the same way, architects are beginning to wonder whether glass boxes are enough for human habitation and painters are beginning to wonder whether painted words are enough for human viewing.

The way to get beyond modernism in accounting or in economics is to pay attention to the 'rhetoric of inquiry' in these fields, to see the way people really argue. The word 'rhetoric' is at first confusing, because most people use it to mean ornament that deceives, a kind of camouflage cast over speech. One's opponent uses 'mere' rhetoric. But in an ancient and honourable sense it means simply the study of all argument, including honest as much as dishonest argument, logic along with metaphors, good argument from authority and bad argument from axioms.

The suggestion is not to 'introduce' rhetoric in the vulgar sense. To say that scholars will do better if they recognize their rhetoric is not to say that they should adorn their speech with verbal trickery. The point is that

they already use the trickery, even in their most rigorously logical work. Any piece of writing meant to persuade uses rhetoric – that is, uses appeals to logic, precedence, analogy, authority, evidence, symmetry, simplicity – to change someone else's action. A metamodern scholar would not 'introduce' rhetoric; he would acknowledge it, the better to use it well and honestly.

Our claim in short is that economics, like the rest of our culture, is awakening from a modernist dream of three-and-one-half centuries' duration, turning to nightmare in its last century. The dream is that knowledge can be 'objectively' founded, that one can tell whether a number is large or small without asking how it fits into a human conversation, and that the conversation is best limited to the figures of speech approved by certain philosophers around 1900 as 'positive', 'quantitative' or, in brief, 'scientific'. It has been a useful dream, but it is time in economics to wake up.

So also is it time in other studies of business. The wake-up bell has sounded in finance (Berger, 1986) and in marketing (Peter and Olson, 1983), as in accounting. Arrington says that better academic accounting would 'supplant an objectivist rationality with a communicative rationality' (1986: 3). It would recognize among other obvious arguments that modernism conceals the salience of story-telling in giving 'an account'. Chua notes that '[t]here is much to be gained by moving accounting into the life-world of actors' (1986: 618). It suits the object of study in accounting, surely, to view scholarship as a social agreement. As Arrington remarks, quoting Burchell and others, 'accounting [in research or in practice?] is a "functioning, discursive component" of constructing reality, not the passive handmaiden for the . . . preferences of a select group of economists' (1986: 28).

The advantages of rhetorical self-awareness are thoroughly practical. It is practical, for example, to know why we disagree about the desirability of the Securities and Exchange Commission. A piece of economic argument against the Commission, such as the book by Susan Phillips and J. Richard Zecher, *The SEC and the Public Interest* (1981), needs to be responded to if the conversation is to go on towards a conclusion. It cannot be answered if the grounds for argument are not made plain; and modernist rhetoric is too narrow to encompass the actual grounds. The modernist rhetoric that only this or that argument has weight will not restrain the human impulse to argue on all reasonable grounds. It will merely hide the arguments, leaving the disputants in unreasonable disagreement. Is the Securities Exchange Commission desirable or not? With our present, modernist rhetoric the issue cannot be joined.

So: economics is rhetorical. One of its many metaphors, in fact its leading one, is the making of a set of accounts. Modern accounting, which has taken over the strict neoclassical model, is concerned with incentive

systems and information as an input into the incentive system. One can view economists as doing the same thing for larger accounting entities – governments and especially whole nations and whole worlds. The main point is that economics lives on accounting ideas. If research in accounting comes to imitate economics it had at least become aware that in the end it is eating its own tail.

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