

Storytelling in Economics

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It is good to tell the story of science and art, economics and the nineteenth-century novel, the marginal productivity theory of distribution and the tradition of the Horatian ode as similarly as possible. I intend to do so. Economists are tellers of stories and makers of poems, and from recognizing this we can know better what economists do.

There seem to be two ways of understanding things; either by way of a metaphor or by way of a story, through something like a poem or through something like a novel. When a biologist is asked to explain why the moulting glands of a crab are located just as they are he has two possibilities. Either he can call on a model – a metaphor – of rationality inside the crab, explaining that locating them just *there* will maximize the efficiency of the glands in operation; or he can tell a story, of how crabs with badly located glands will fail to survive. If he is lucky with the modelling he will discover some soluble differential equations. If he is lucky with the storytelling he will discover a true history of some maladapted variety of crabs, showing it dying out. Metaphors and stories, models and histories, are the two ways of answering 'why'.

It has probably been noticed before that the metaphorical and the narrative explanations answer to each other. Suppose the biologist happens first to offer his metaphor, his hypothetical individual crab moving bits of its body from here to there in search of the optimal location for moulting glands. The listener asks, 'But why?' The biologist will answer with a story: he says, 'The reason why the glands must be located optimally is that if

crabs did a poor job of locating their glands they would die off as time passed.' A story answers a model.

But likewise a model answers a story. If the biologist gives the evolutionary story first, and the listener then asks, 'But why?', the biologist will answer with a metaphor: 'The reason why the crabs will die off is that poorly located glands would serve poorly in the emergencies of crabby life The glands would not be located according to the metaphor of maximizing: that's why.'

Among what speakers of English call the sciences, metaphors dominate physics and stories dominate biology. Of course, the modes can mix. That we humans regard metaphors and stories as antiphonal guarantees they will. Mendel's thinking about genetics is a rare case in biology of pure modelling, answered after a long while by the more usual storytelling. In 1902 W.S. Sutton observed homologous pairs of grasshopper chromosomes. He answered the question put to a metaphor - 'Why does the Mendelian model of genes work?' - with a story: 'Because, to begin with, the genes are arranged along pairs of chromosomes, which I have seen, one half from each parent.'

The modes of explanation are more closely balanced in economics. An economist explains the success of cotton farming in the antebellum American South indifferently with static, modelling arguments (the South in 1860 had a comparative advantage in cotton) or with dynamic, storytelling arguments (the situation in 1860 was an evolution from earlier successes). The best economics, indeed, combines the two. Ludwig von Mises' famous paper of 1920 on the impossibility of economic calculation under socialism was both a story of the failures of central planning during the recently concluded war and a model of why any replacement for the market would fail (Lavoie 1985: 49).

The metaphors are best adapted to making predictions of tides in the sea or of shortages in markets, simulating out into a counterfactual world. (One could use here either an evolutionary story from the history of science or a maximizing model from the sociology or philosophy of science.) Seventeenth-century physics abandoned stories in favour of models, giving up the claim to tell in a narrative sense how gravity reached up and pulled things down; it just did, according to such-and-such an equation - let me show you the model. Similarly a price control on apartments will yield shortages; don't ask how it will in sequence; it just will,

according to such-and-such an equation - let me show you the model.

On the other hand the storytelling is best adapted to explaining something that has already happened, like the evolution of crabs or the development of the modern corporation. The Darwinian story was notably lacking in models, and in predictions. Mendel's model, which offered to explain the descent of man by a metaphor rather than by a story, was neglected for thirty-four years, all the while that evolutionary stories were being told.

The contrast carries over to the failures of the two modes. When a metaphor is used too boldly in narrating a history it becomes ensnared in logical contradictions, such as those surrounding counterfactuals (McCloskey 1987). If a model of an economy is to be used to imagine what would have happened to Britain in the absence of the industrial revolution then the contradiction is that an economy of the British sort did in fact experience an industrial revolution. A world in which the Britain of 1780 did not yield up an industrial revolution would have been a very different one, before and after 1780. The model wants to eat the cake and have all the ingredients, too. It contradicts the story. Likewise, when a story attempts to predict something, by extrapolating the story into the future, it contradicts some persuasive model. The story of business cycles can organize the past, showing capitalist economies bobbing up and down. But it contradicts itself when it is offered as a prediction of the future. If the models of business cycles could predict the future there would be no surprises, and consequently no business cycles.

The point is that economists are like other human beings in that they both use metaphors and tell stories. They are concerned both to explain and to understand, *erklären* and *verstehen*. I am going to concentrate here on storytelling, having written elsewhere about the metaphorical side of the tale (McCloskey 1985). What might be called the poetics or stylistics of economics is worth talking about. But here the subject is the rhetoric of fiction in economics.

I propose to take seriously an assertion by Peter Brooks, in his *Reading for the Plot*: 'Our lives are ceaselessly intertwined with narrative, with the stories that we tell, all of which are reworked in that story of our own lives that we narrate to ourselves We are immersed in narrative' (Brooks 1985: 3). As the historian J.H. Hexter put it, storytelling is 'a sort of knowledge we cannot live

without' (Hexter 1986: 8). Economists have not lived without it, not ever. It is no accident that the novel and economic science were born at the same time. We live in an age insatiate of plot.

Tell me a story, Dr Smith. Why, of course:

A pension scheme is proposed for the nation, in which 'the employer will pay half'. It will say in the law and on the worker's salary cheque that the worker contributes 5% of his wages to the pension fund but that the employer contributes the other 5%. The example is a leading case in the old quarrel between lawyers and economists. A law is passed 'designed' (as they say) to have such-and-such an effect. The lawyerly mind goes this far, urging us therefore to limit the hours of women workers or to subsidize shipping. The women, he thinks, will be made better off; as will the ships. According to the lawyer, the workers under the pension scheme will be on balance 5% better off, getting half of their pension free from the employer.

An economist, however, will not want to leave the story of the pension plan in the first act, the lawyer's and legislator's act of laws 'designed' to split the costs. She will want to go further in the drama. She will say: 'At the higher cost of labour the employers will hire fewer workers. In the second act the situation created by the law will begin to dissolve. At the old terms more workers will want to work than the employer wishes to hire. Jostling queues will form outside the factory gates. The competition of the workers will drive down wages. By the third and final act a part of the "employer's" share - maybe even all of it - will sit on the workers themselves, in the form of lower wages. The intent of the law', the economist concludes, 'will have been frustrated.'

Thus in Chicago when a tax on employment was proposed the reporters asked who would pay the tax. Alderman Thomas Keane (who as it happens ended in jail, though not for misappropriation of economics) declared that the City had been careful to draft the law so that only the employers paid it. 'The City of Chicago', said Keane, 'will never tax the working man.'

Thus in 1987, when Senator Kennedy proposed a plan for American workers and employers to share the cost of health insurance, newspapers reported Kennedy as estimating 'the overall cost at \$25 billion - \$20 billion paid by employers and \$5 billion by workers'. Senator Kennedy will never tax the working man. The manager of employee relations at the US Chamber of Commerce

(who apparently agreed with Senator Kennedy's economic analysis of where the tax would fall) said, 'It is ridiculous to believe that every company . . . can afford to provide such a generous array of health care benefits.' The US Chamber of Commerce will never tax the company.

The case illustrates a number of points about economic stories. It illustrates the delight that economists take in unforeseen consequences, a delight shared with other social scientists. It illustrates the selection of certain consequences for special attention: an accountant or political scientist would want to hear how the pension was funded, because it would affect business or politics in the future; economists usually set such consequences to the side. It illustrates also the way economists draw on typical scenes - the queues in front of the factory - and typical metaphors - workers as commodities to be bought and sold. Especially it illustrates the way stories support economic argument. Since Adam Smith and David Ricardo, economists have been addicted to little analytic stories, the Ricardian vice. The economist says, 'Yes, I see how the story starts; but I see dramatic possibilities here; I see how events will develop from the situation given in the first act.'

It is not controversial that an economist is a storyteller when telling the story of the Federal Reserve Board or of the industrial revolution. Plainly and routinely, ninety per cent of what economists do is such storytelling. Yet even in the other ten per cent, in the part more obviously dominated by models and metaphors, the economist tells stories. The applied economist can be viewed as a realistic novelist or a realistic playwright, a Thomas Hardy or a George Bernard Shaw. The theorist, too, may be viewed as a teller of stories, though a non-realist, whose plots and characters have the same relation to truth as those in *Gulliver's Travels* or *A Midsummer Night's Dream*. Economics is saturated with narration.

The analogy on its face seems apt. Economics is a sort of social history. For all their brave talk about being the physicists of the social sciences, economists do their best work when looking backwards, the way a biologist or geologist or historian does. Journalists and politicians demand that economists prophesy, forecasting the social weather. Sometimes, unhappily, the economists will take money for trying. But it is not their chief skill, any more than earthquake forecasting is the chief skill of seismologists, or election

forecasting the chief skill of political historians. Economists cannot predict much, and certainly cannot predict profitably. If they were so smart they would be rich (McCloskey 1988). Mainly economists are tellers of stories.

Well, so what? What is to be gained by thinking this way about economics? One answer can be given at once, and illustrates the uses of the literary analogy, namely: storytelling makes it clearer why economists disagree.

Disagreement among scientists is suggestive for the rhetoric of science in the same way that simultaneous discovery is suggestive for its sociology. The lay person does not appreciate how much economists agree, but he is not entirely wrong in thinking that they also disagree a lot. Economists have long-lasting and long-disagreeing schools, more typical of the humanities than of the sciences. Why then do they disagree?

When economists themselves try to answer they become sociological or philosophical, though in ways that a sociologist or philosopher would find uncongenial. When in a sociological mood they will smile knowingly and explain that what drives monetarists or Keynesians to 'differentiate their product', as they delight in putting it, is self-interest. Economists are nature's Marxists, and enjoy uncovering and then sniggering at self-interest. When they are in a more elevated and philosophic mood they will speak sagely of 'successive approximations' or 'treating a theory merely as if it were true'. Some have read a bit of Popper or Kuhn, and reckon they know a thing or two about the Methodology of Science. The stories that result from these ventures into ersatz sociology and sophomore philosophy are unconvincing. To tell the truth, the economists do not know why they disagree.

Storytelling offers a richer model of how economists talk and a more plausible story of their disagreements. The disagreement can be understood from a literary perspective in more helpful ways than saying that one economist has divergent material interest from another, or a different 'crucial experiment', or another 'paradigm'.

It is first of all the theory of reading held by scientists that permits them to disagree, and with such ill temper. The oversimple theory of reading adopted officially by economists and other scientists is that scientific texts are transparent, a matter of 'mere communication', 'just style', simply 'writing up' the 'theoretical

results' and 'empirical findings'. If reading is so free from difficulties, then naturally the only way our readers can fail to agree with us is through their ill will or their dimness. (Leave aside the unlikely chance that it is we who are dim.) It's right there in black and white. Don't be a dunce.

A better theory of reading, one that admitted that scientific prose like literary prose is complicated and allusive, drawing on a richer rhetoric than mere demonstration, might soothe this ill temper. The better theory, after all, is the one a good teacher uses with students. She knows well enough that the text is not transparent to the students, and she does not get angry when they misunderstand. God likewise does not get angry when His students misunderstand His text. In fact, like scientists and scholars, God writes obscurely in order to snare us. As Gerald Bruns has noted, St Augustine viewed the obscurity of the Bible as having 'a pragmatic function in the art of winning over an alienated and even contemptuous audience' (Bruns 1984: 157). He quotes a remark of Augustine about the difficulty of the Bible that might as well be about the latest proof in mathematical economics: 'I do not doubt that this situation was provided by God to conquer pride by work and to combat disdain in our minds, by which those things which are easily discovered seem frequently to be worthless.'

One source of disagreement, then, is a naïve theory of reading, the theory that would ask naïvely for the 'message' in a poem, as though poems were riddles in rhyme. Another source of disagreement is likewise a source of disagreement about literature: compression, a lack of explicitness. Partly this is economic. Had she but world enough and time the writer could make everything explicit. In a world of scarcity, however, she cannot. Yet explicitness is no guarantee of agreement, because if the writer has all the time in the world the reader does not. I cannot listen long enough to understand some of my Marxist friends (though I ask them to keep trying). Similarly, the mathematician in economics has an expository style based on explicitness and a zero value of time. Everything will be clear, he promises earnestly, if the readers will but listen carefully to the axioms. The readers grow weary. They cannot remember all the axioms and anyway cannot see why one would wish to doubt them. They do not have the toleration for such speech that the mathematician has.

The point involves more than the economic scarcity of journal

space and of the leisure time to read. It involves the anthropology of science, the customs of its inhabitants and their ability to read a language. A scientist convinced of what she writes will come from a certain background, supplied with a language. Unless her reader knows roughly the same language – that is, unless he has been raised in approximately the same conversation – he will misunderstand and will be unpersuaded. This is an unforgivable failure only if it is an unforgivable failure to be, say, non-Javanese or non-French. The reader comes from another culture, with a different tongue. The training in reading English that a D.Phil. in English provides or the training in reading economics that a Ph.D. in economics provides are trainings in rapid reading, filling in the blanks.

A third and final source of disagreement in literature and in economics, beyond the naïve theory of reading and the limits on understanding foreign speech, is an inability of the reader to assume the point of view demanded by the author. A foolishly sentimental poem has the same irritating effect on a reader as does a foolishly libertarian piece of economics. The reader refuses to enter the author's imaginative world, or is unable to. A literary critic said, 'A bad book, then, is a book in whose mock reader we discover a person we refuse to become, a mask we refuse to put on, a role we will not play' (Gibson 1950: 5). The reader therefore will of course misread the text, at least in the sense of violating the author's intentions. We do not submit to the authorial intentions of a badly done greeting card. In a well-done novel or a well-done scientific paper we agree to submit to the authorial intentions, so far as we can make them out. The entire game in a science such as biology or chemistry or economics is to evoke this submission to authorial intentions. Linus Pauling commands attention, and his readers submit to his intentions, at least outside of vitamin C; Paul Samuelson likewise, at least outside of monetary policy.

The argument can be pushed further. An economist expounding a result creates both an 'authorial audience' (an imagined group of readers who know that this is fiction) and a 'narrative audience' (an imagined group who do not). As Peter Rabinowitz explains (Rabinowitz 1980: 245) 'the narrative audience of "Goldilocks" believes in talking bears'; the authorial audience knows it is fiction. The split between the two audiences created by the author seems weaker in economic science than in explicit fiction, probably

because we all know that bears do not talk but we do not all know that marginal productivity is a metaphor. In science the 'narrative audience' is fooled, as in 'Goldilocks'. But the authorial audience is fooled, too (and commonly so also is the literal audience, the actual readers as against the ideal readers the author wishes into existence). Michael Mulkay (1985) has shown how important is the choice of authorial audience in the scholarly correspondence of biochemists. The biochemists, like other scientists and scholars, are largely unaware of their literary devices, and become puzzled and angry when their audience refuses to believe in talking bears. Small wonder that scientists and scholars disagree, even when their rhetoric of 'What the facts say' would appear to make disagreement impossible.

Taking economics as a kind of writing, then, explains some of the disagreements of economists. Economists go on disagreeing after the 'theoretical results and empirical findings', as they put it, have been laid out for inspection not merely because they are differentiating their product or suffering from inflammation of the paradigm but because they read a story or a scientific paper written in an unfamiliar language inexpertly, yet do not realize it. They are like the British tourist in Florence who believes firmly that Italians really do understand English, and can be made to admit it if one speaks very slowly and very loudly: 'WHERE . . . IS . . . YOUR . . . STORY???'

Telling the stories in economics as matters of beginnings, middles, and ends has many attractions. One can start with pure plot, breaking 100 economic stories down into their components as Vladimir Propp did in 1928 for 100 Russian folk tales (Propp 1968: 19–24): the capitalization of Iowa corn prices tale, the exit from and entry to computer selling in the 1980s tale, the correct incidence of the Kennedy health insurance tale, and so forth. The tales can then be analysed into 'functions' (Propp's word for actions). And, to Proppize it entirely, one can ask whether the sequences of functions prove to be constant, as they are in Russia.

The task sounds bizarre. But in a way economics is too easy a case. Economics is already structural, as Ferdinand de Saussure suggested long ago (Saussure 1916: 79, 113). The actions of an economic folklore are few: entry, exit, price setting, orders within a firm, purchase, sale, valuation, and a few more. It is indeed this self-consciously structural element that makes

economics so irritating to outsiders. Economists say over and over again: 'action X is *just like* action Y' – labour is just like a commodity, slavery is just like capitalization, children are just like refrigerators, and so forth. The economist's favourite phrase would please Claude Lévi-Strauss: 'Underneath it all.' Underneath it all, international trade among nations is trade among individuals, and can be modelled in the same way. Underneath it all, an inflated price is earned by someone as an inflation wage, leaving average welfare unchanged. Underneath it all, we owe the national debt to ourselves, though the people who pay the taxes might wonder about this. In such a highly structured field, whose principles of storytelling are so well known by the main storytellers, it would be surprising to find as many as thirty-one distinct actions, as Propp found in his 100 Russian folk tales (Propp 1968: 64). He found seven characters (*ibid*: 80). That seems more likely: David Ricardo in his economic tales got along with three.

Tale-telling in economics follows the looser constraints of fiction, too. The most important is the sense of an ending, as in the story of the pension scheme. Go all the way to the third act. The 5% pension gained by the workers is 'not an equilibrium', as economists say when they do not like the ending proposed by some unsophisticated person. Any descendant of Adam Smith, whether by way of Marx or Marshall or Menger, will be happy to tell you the rest of the story.

Many of the disagreements inside economics turn on this sense of an ending. To an eclectic Keynesian the story idea 'Oil prices went up, which caused inflation' is full of meaning, having the merits that stories are supposed to have. But to a monetarist it seems incomplete, no story at all, a flop. As A.C. Harberger says, it doesn't make the economics 'sing'. It ends too soon, half-way through the second act: a rise in oil prices without some corresponding fall elsewhere is 'not an equilibrium'. From the other side, the criticism of monetarism by Keynesians is likewise a criticism of the plot line, complaining of an ill-motivated beginning rather than a premature ending: where on earth does the money *come* from, and why?

There is more than prettiness in such matters of plot. There is moral weight. The historian Hayden White has written that 'The demand for closure in the historical story is a demand . . . for moral reasoning' (White 1981: 20). A monetarist is not morally

satisfied until she has pinned the blame on the Bank of England. The economist's ending to the pension story says, 'Look: you're getting fooled by the politicians and lawyers if you think that specifying the 50-50 share in the law will get the workers a 50% cheaper pension. Wake up; act your age; look beneath the surface; recognize the dismal ironies of life.' Stories impart meaning, which is to say worth. A *New Yorker* cartoon shows a woman looking up anxiously from the telly, asking her husband, 'Henry, is there a moral to *our* story?'

The sense of adequacy in storytelling works in the most abstract theory, too. In seminars on mathematical economics a question nearly as common as 'Haven't you left off the second subscript?' is 'What's your story?' The story of the pension scheme can be put entirely mathematically and metaphorically, as an assertion about the incidence of a tax on a system of supply-and-demand curves in equilibrium:

$$w^* = - [E_d / (E_d + E_s)] T^*$$

The mathematics here is so familiar to an economist that he will not require explanation beyond the metaphor. But in less familiar cases he will. Like the audience for the biologist explaining moulting glands in crabs, at the end of all the modelling he will ask insistently *why*; 'What's your story?' His question is an appeal for a lower level of abstraction, closer to the episodes of human life. It asks for more realism, in a fictional sense, more illusion of direct experience. It asks to step closer to the nineteenth-century short story, with its powerful and unironic sense of *being there*.

And of course even the most static and abstract argument in economics, refusing to become storylike and insisting on remaining poetic and metaphorical, is part of 'that story of our own lives which we narrate to ourselves'. A scholar has a story in which the work in question is an episode: this is why seminars so often begin with 'how I came to this subject', because such a fragment of autobiography gives meaning to it all. You will hear mathematicians complain if a seminar has not been 'motivated'. The motivation is a story, frequently a mythic history about this part of mathematics or about this speaker. The audience wishes to know why the argument might matter to the speaker, or to the audience itself. The story will then have a moral, as all good stories do.

Economics-as-story provides some places from which to see the

plot of economics. To repeat, the author is either a narrator or a poet, a user of either a story or a metaphor. But the reader, too, figures in economic thought. A distinction has been drawn by Louise Rosenblatt between *aesthetic* and *efferent* reading. In efferent reading (*effero*, carry off) the reader focuses on what she will carry off from the reading. Efferent reading is supposed to characterize model-building and science. In aesthetic reading the reader focuses on her experience at the time of the reading, which is supposed to characterize storytelling and art. Yet an aesthetic reading of a scientific text commonly carries the argument. The feeling 'Yes: this is right' in the last stanza of 'Among school children' resembles the feeling that comes upon one when concluding the ancient proof that the square root of 2 cannot be expressed as the ratio of two whole numbers. Rosenblatt supposes that 'To adopt an aesthetic stance . . . toward the directions for constructing a radio is possible, but would usually be very unrewarding' (Rosenblatt 1978: 34). Well, yes, usually. Yet the computer repairman takes an aesthetic attitude toward the schematics for a Murrow computer: 'A nice little machine', he says, and smiles, and is brought to this or that solution. The physicist Steven Weinberg argues that aesthetic readings govern the spending of millions of dollars in research money (Weinberg 1983). The pleasure of the text is sometimes its meaning, even in science.

Rosenblatt anticipates such an argument, noting that theories of literature that do not stress the reader's role are left puzzled by pleasurable nonfiction, such as *The Decline and Fall of the Roman Empire* or, one might add, the best applied economics. The reader's response gives a way of keeping track of the aesthetic readings when they matter. The usual theory of scientific reading claims that they never do.

The telling of artful stories has its customs, and these may be brought to economics, too. Take for instance the bare notion of genre, that is, of types of literary production, with their histories and their interrelations. The scientific report is itself a genre, whose conventions have changed from time to time. Kepler wrote in an autobiographical style, spilling his laboratory notes with all their false trails onto the page; Galileo wrote in urbane little dramas. It was Newton, in some other ways also an unattractive man, who insisted on the cramping literary conventions of the

Scientific Paper (Medawar 1964). An economist should be aware that he adopts more than a 'mere' style when he adopts the conventions.

Pure theory in economics is similar to the literary genre of fantasy. Like fantasy it violates the rules of 'reality' for the convenience of the tale, and amazing results become commonplace in a world of hypothesis. That animals exhibit the foibles of human beings is unsurprising in a world in which animals talk. No blame attaches. The task of pure theory is to make up fantasies that have a point, in the way that *Animal Farm* has a point. Pure theory confronts reality by disputing whether this or that assumption drives the result, and whether the assumption is realistic. The literary analogy, by the way, puts the debate about the realism of economic assumptions into a strange light. Is it the talking animals or the flying carpets, both of which are unrealistic, that makes *The Arabian Nights* on the whole 'unrealistic'? The question is strange to the point of paradox, but economists talk routinely as though they can answer it.

To speak of pure theory as fantasy, I repeat, is not to put it at a low value. *Gulliver's Travels* is fantasy, too, but pointed, instructive, useful fantasy for all that. Theorists usually know what genre they are writing. Their awareness reveals itself in their little jokes, of 'turnpikes' along the way to economic growth and 'islands' of labour in the economy. Yet the Ricardian vice is most characteristic of high theory: the vice of allowing fancy too free a rein. Auden remarks, 'What makes it difficult for a poet not to tell lies is that, in poetry, all facts and all beliefs cease to be true or false and become interesting possibilities' (quoted in Ruthven 1979: 175). The hundredth possible world of international trade gives the impression of a poetry gone to Bedlam. Economists would do well to know what genre they are reading or writing, to avoid misclassifying the fantasy and to assure that they are doing it well.

Good empirical work in economics, on the other hand, is like realistic fiction. Unlike fantasy, it claims to follow all the rules of the world. (Well . . . all the *important* ones.) But of course it too is fictional.

The modernist schoolmasters so long in charge of our intellectual lives would reply crossly that it is my analysis that is the fantasy and the fiction. They will complain that the proper scientist *finds* the story; no fiction about it.

The answer to such an assertion has long been understood. The storyteller cloaks himself in Truth – which is what annoyed Plato about alleged imitations of life in sculpture or poetry. Just ‘telling the story as it happened’ evades the responsibility to declare a point of view. Realist fiction does this habitually – which shows another use for the literary analogy, to note that realist ‘fiction’ in science can also evade declaring a point of view. Michael Mulkey notes in the epistolary arguments of biologists a Rule 11: ‘Use the personal format of a letter . . . but withdraw from the text yourself as often as possible so that the other party continually finds himself engaged in an unequal dialogue with the experiments, data, observations and facts’ (Mulkey 1985). The evasion is similar in history: ‘the plot of a historical narrative is always an embarrassment and has to be presented as “found” in the events rather than put there by narrative techniques’ (White 1981: 20).

Admitting that the Battle of Waterloo has more promising material than today’s breakfast, still it is true that nothing is given to us by the world in story form already. *We* tell the stories. John Keegan has nicely illustrated the point in reference to Waterloo in his book *The Face of Battle* (1977). He speaks of the ‘rhetoric of battle history’ (ibid: 36) as demanding that one cavalry regiment be portrayed as ‘crashing’ into another, a case of ‘shock’ tactics. Yet an observant witness of such an encounter at Waterloo reported that ‘we fully expected to have seen a horrid crash – no such thing! Each, as if by mutual consent, opened their files on coming near, and passed rapidly through each other’ (ibid: 149). A story is something told to each other by human beings, not something existing ready-told in the very rocks or cavalry regiments or mute facts themselves. Niels Bohr once remarked that physics is not about the world but about what we as human beings can say about the world.

Stories, in other words, are selective. In this they are similar to metaphors and models, which must select, too. We cannot portray anything literally completely, as another Niels Bohr story illustrates. He asked his graduate class to *fully* describe a piece of chalk, to give *every* fact about it. As the students found, the task is impossible unless radically selective. We cannot know about the history of every atom in the chalk, or the location of every atom that bears any relation to the atoms in the chalk, since every atom bears some relation, if only by not being that atom in the chalk.

We decide what matters, for *our* purposes, not for God’s or Nature’s.

The fictional writer selects like the scientist, and invites the reader to fill in the blanks. Stories or articles can give only a sample of experience, because experience is overwhelmed by irrelevance: taking out the rubbish, bumping the table, scratching the back of one’s head, seeing the title of the book one was not looking for. What distinguishes the good storyteller and the good scientific thinker from the bad is a sense of pointedness.

The vaunted parsimony of scientific stories is not the result of some philosophy commending parsimony. It is a result of the way we read science, our ability to fill the blanks, telling stories in our culture. The economist can read the most unreadable and compressed production of his fellows, but only if they participate in the same community of speech. Wholly fictional stories are parsimonious in the same way.

Skilful fiction, whether in the form of *Northanger Abbey* or *The Origin of Species*, ‘stimulates us to supply what is not there’, as Virginia Woolf remarked of Austen: ‘What she offers is, apparently, a trifle, yet is composed of something that expands in the reader’s mind and endows with the most enduring form of life scenes which are outwardly trivial’ (Woolf 1953: 142). Remarking on Woolf in turn, Wolfgang Iser put it this way:

What is missing from the apparently trivial scenes, the gaps arising out of the dialogue – this is what stimulates the reader into filling the blanks with projections [the image is of the reader running a motion picture inside his head, which is of course why novels can still compete with television] The ‘enduring form of life’ which Virginia Woolf speaks of is not manifested on the printed page; it is a product arising out of the interaction between text and reader.

(Iser 1980: 110–11)

As Arjo Klamer (1987) has shown for the postulate of economic rationality, scientific persuasion, too, is like that. Persuasion of the most rigorous kind has blanks to be filled at every other step, if it is about a difficult murder case, for example, or a difficult mathematical theorem. The same is true of a difficult piece of economic storytelling. What is unsaid – but not unread – is more important to the text as perceived by the reader than what is there on the page. As Klamer puts it (ibid: 175), ‘The student of the rhetoric of economics faces the challenge of speaking about the unspoken,

filling in the "missing text" in economic discourse.'

The running of different motion pictures in our heads is going to produce different texts as perceived. The story here circles back to disagreement. Tzvetan Todorov makes the point: 'How do we explain this diversity [of literary readings]? By the fact that these accounts describe, not the universe of the book itself, but this universe as it is transformed by the psyche of each individual reader' (Todorov 1980: 72). And elsewhere: 'Only by subjecting the text to a particular type of reading do we construct, from our reading, an imaginary universe. Novels do not imitate reality; they create it' (ibid: 67f.). Economic texts also are made in part by the reader. Obscure texts are often therefore influential. Keynes left many opportunities for readers to run their own internal motion pictures, filling in the blanks.

What, then, is to be done? Should economists go on pretending that scientific texts are transparent and complete in themselves? If economists read texts differently, and know that they do, is economics left in chaos? Will admitting that economics like other sciences depends on storytelling lead to the war of all against all, and low wages?

No. In grim little wars of misreading the chaos already exists. A literary turn might bring a peace of toleration and trade. A community of readers is built the same way a community of listeners to music or a community of businesspeople is built, by making them sophisticated readers and listeners and businesspeople, willing to try other ways of reading or listening or dealing.

Perhaps there is something to treating economics as stories. The advantage would be self-consciousness, though self-consciousness itself is disparaged by certain economists anxious to manipulate the rules of conversation. Economists would do better to know what they are talking about. Looking on economics as poetry or fiction – or for that matter, as history – gives the economist a place to look in from outside. It is a better place than is provided by the usual philosophies of science; it is a great deal better than the homespun sociologies and philosophies that economists commonly use.

There is another advantage, to the larger culture. Economics should come back into the conversation of mankind. It is an extraordinarily clever way of speaking, which can do much good. The

way to bring it back is to persuade economists that they are not so very different from poets and novelists. They do not have to abandon their lovely mathematics. For a long time now they have been standing aside, believing they have only the mathematical sciences as models. They practise a physics-worship that misunderstands both physics and themselves. Economists could get their gods from poetry or history or philology and still do much the same job of work, with a better temper and with better results.

Reunifying the conversation of mankind is best accomplished with hard cases. Economics is a hard case, wrapped in its prideful self-image as Science. If even economics can be shown to be fictional and poetical and historical its story will be a better one. Technically speaking it will be a comedy, comprising words of wit, an amused tolerance for human folly, stock characters colliding at last in the third act, and, most characteristic of the genre, a universe in equilibrium and a happy ending.

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