
Some Pair-Wise Classifications Employed in Historiography

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ABSTRACT

Various pair-wise classifications have been employed in historiography, the most recent being Waterman's distinction between intellectual history and the history of economic analysis. Other dichotomies are rational reconstruction and historical reconstruction, the context of discovery and the context of justification, internal history and external history and relativist and absolutist accounts. In the 1930s Butterfield differentiated the Whig interpretation of history from the non-Whig approach. Another dichotomy which has a much older history is the distinction between text and context. Perhaps the oldest dichotomy of all is the distinction between particulars and universals. An attempt is made to show that the age-old controversy between nominalism and universals provides a common thread to the dichotomies discussed in this paper.

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INTRODUCTION

The distinction between what happened and how we account for what has happened provides the rationale for various pair-wise classifications that have been employed in historiography.

The most recent dichotomy employed in Economics is that of Waterman (1998) who distinguishes between intellectual history and the history of economic analysis. In the previous decade, Rorty (1984) contrasted historical reconstruction with rational reconstruction.

In the 1970s Lakatos also used the term rational reconstruction which he considered equivalent to internal history. It had been fashionable in the 1950s and 1960s to distinguish between internal and external histories of science. Earlier Reichenbach had distinguished between the context of discovery and the context of justification, the latter also being termed a rational reconstruction (Reichenbach, 1938: 5-7).

In the 1930s Butterfield identified the whig interpretation of history with the view that the past should be viewed through the eyes of present. In the whig interpretation, history is viewed as a march of progress written by the triumphant. Butterfield argued that the correct way of doing history was to view the past through the eyes of the past.

Over a century ago, John Neville Keynes distinguished between absolutist and relativist interpretations of economic events. In the extreme version of the absolutist account, a theory is considered applicable to all ages and in the extreme version of the relativist account, a theory is time-bound.

The distinction between the meaning of a text and the context in which it was written must be as old as writing itself. Some like to find timeless truths in the texts they study, while others regard a text as very much a document of its time. Another distinction of ancient origin is that between particulars and universals.

This essay is primarily an exercise in clarification, not an attempt to identify the reasons behind the decline and fall of dichotomies. A couple of examples should illustrate that some clarity is called for. While Rorty (1984), Lakatos (1974) and Reichenbach (1938) all use the term rational reconstruction, they use it in different ways. Rorty refers neither to Reichenbach nor Lakatos, and Lakatos does not refer to Reichenbach. When Lakatos introduced his version of the internal history-external history division, he pointed out that it differed from the conventional split, but when writers today talk about internal or external histories, they do not always state whether they are using the dichotomy of Kuhn or Lakatos.

PAIR-WISE CLASSIFICATIONS

History_{But} and the whig interpretation of history (history_{whig})

The Whig interpretation of history has been discussed in detail elsewhere (see Torr 2000) and will be dealt with briefly. Butterfield (1931) identified the whig interpretation of history as a procedure in which events of the past are viewed through the eyes of the present, a practice which he considered unacceptable. He argued that as far as was possible, events of the past should be interpreted through the eyes of the past. His preferred method of doing history will be referred to as history_{But}.

In Britain, the Whig political party no longer exists. It disappeared in the second half of the nineteenth century and became the Liberal Party. The opposition party was the Tory or Conservative party. We can place the Tories in the

conservative, right-wing part of the political spectrum, and the Whigs in the liberal, left wing part. A Tory would tend to side with the monarchy, whereas a Whig would want the absolute power of the monarchy curtailed through parliament democracy and a bill of rights, such as the Magna Carta (Butterfield, 1957: 109). If the monarchy issue provided a litmus test as to whether someone harboured Whig or Tory sympathies, an even quicker test was one's stance on William the Conqueror. A Whig would tend to regard William as the "accursed Norman" (Colbourn, 1965: 7) who rode roughshod over the ancient liberties enjoyed by Anglo-Saxons prior to the invasion. A Tory would be inclined to view William as someone who restored stability to a dishevelled kingdom.

A whig interpretation of history is not necessarily a historical account provided by somebody with Whig sympathies, although it may be. In other words you don't (or didn't) have to vote Whig in order to write a whig interpretation of history (Burrow, 1981: 2). Butterfield illustrates the whig interpretation of history with the aid of the Catholic-Protestant schism. If today there is religious liberty, whom do we have to thank for this? In the whig interpretation, we have Luther to thank. The whig interpretation is a story of progress from religious intolerance to religious tolerance. In such a story the Whigs and the Protestants are cast as the progressives and the Tories and the Catholics as the reactionaries. The whig interpretation is a story of progress told by the victors - the progressives. The past is viewed through the eyes of the present.

Butterfield points out that the movement towards religious liberty was not simply the result of progressive forces, but often the result of compromise between opposing forces. In centuries gone by, the state was on the side of the catholic church and it was unthinkable that the church and state would allow heretics to promote unorthodox views. The subsequent idea that both catholics and protestants be allowed their place in the sun, and that the state should act as a disinterested referee, may have played no role at all in Luther's attempt to reform the church. The emergence of religious toleration cannot therefore only be seen as the triumph of progressive over reactionary forces.

Butterfield (1944) later acknowledged that we all harbour some or other whig interpretation, and perhaps one of the chief virtues of Butterfield's original polemic was to draw attention to the fact that if we are writing whig history, we should be aware that we are so doing, and caution our readers accordingly.

The absolutist view and the relativist view

Over a century ago, it was common to distinguish between absolutist and relativist views in economics. For example, *Palgrave's Dictionary of Political Economy* (1900) has an entry written by John Neville Keynes on: "relativity,

principle of, in political economy” and Keynes (1890: 319) uses the term “the relativity of economic doctrines” fifteen years before Einstein presented what was later to be referred to as the special theory of relativity.

Keynes presents the relativist-absolutist debate against the background of the *methodenstreit*. A relativist would argue that economic theory does not embody timeless truths and Keynes links the relativists to the historical school (*The New Palgrave*, vol 4: 136). Although he gives the relativists a good hearing in terms of changing institutions and policy, Keynes’s sympathies lie with the absolutists. He intimates that there are abstract economic principles that have timeless validity. Referring to the classical English economists, he writes that “Much of what they wrote will be valuable for all time” (*The New Palgrave*, vol 4: 138).

In Keynes’s story, Schmoller comes across as an extreme relativist, against not only absolutism, but against theory in general. In Blaug’s (1997) view, a relativist is not necessarily against theory, but rather somebody who would be reluctant to say that a particular theory was wrong and another right. A relativist would argue that theories are reasonable representations of conditions at the time that they were presented, such representations reflecting the institutional arrangements of the time. With the benefit of hindsight we might consider the view that all value stems from land as a rather quaint doctrine put forward by the physiocrats two hundred and fifty years ago. A relativist would claim that physiocratic theory was a perfectly reasonable theory to advocate in the 1750s. And if today we think the mercantilistic doctrine seems a bit odd, we should remember that it held sway for nearly three hundred years.

Blaug (1997: 2) views Stark (1944) as a super relativist. Stark is not against theory, however, but against the notion of timeless theory. Would it have been rational around 1700 to have entertained a view which we today call mercantilistic? Is it rational for us today to entertain S&D thoughts which by the year 2400 may be regarded as odd? An absolutist would tend towards the view that rationality is timeless and unchanging, and a relativist to the view that the notion of rationality itself changes over the centuries. In the fifteenth century it was not considered rational to believe that the earth went round the sun.

The absolutist view incorporates the notion of progress and the idea of theory embodying truths independent of institutional arrangements (Chalk, 1967: 9). When we start puzzling over whether such truths are to be regarded as timeless or modern, we encounter the problem that Whigs had with the idea of an ancient constitution. The Whigs eventually conceded that it was more appropriate to suppose that liberty was a modern idea. The whig interpretation of history is by definition modern rather than timeless. There is a close link between the whig interpretation and the absolutist view:

... the Whig historian makes the present the *absolute* judge of past controversies and the sole criterion for the selection of episodes of historical importance. ... Some historians of science have, therefore, seen the present state of scientific knowledge as an *absolute* against which earlier attempts to understand Nature could be evaluated. ... In its crudest form 'Whig' history of science, like its political counterpart, degenerates into a tale of heroes ... and villains. The extreme 'Whig' approach has been severely criticized ... and is now largely disappearing from the discipline [*Dictionary of the History of Science* 1983: 445, emphasis added].

Like the whig interpreter of history, an absolutist views the march of economic analysis as a march of progress. Theories are viewed right or wrong in terms of today's notion of rationality, which may or may not be considered timeless. The absolutist would say that over the course of time, wonderful theories have emerged, irrespective of the institutional arrangements of the time. When the idea of progress is combined with the notion of timeless truths, we arrive at the strange conclusion that economic theory advances by presenting better and better timeless truths. A relativist would argue that the emergence of different institutional arrangements may call for a new theory. (For a discussion of a modern relativist, see Backhouse's (1995: ch 2) discussion of Dasgupta.)

Stark's views are similar to those of Butterfield even though he does not refer directly to the whig interpretation. Stark (1944: 1) writes:

There are ... two ways of looking upon the history of economic thought: the one is to regard it as a steady progression from error to truth, or at least from dim and partial vision to clear and comprehensive perception; the other is to interpret every single theory put forward in the past as a faithful expression and reflection of contemporary conditions...

When it comes down to the practice of writing history, Stark attempts to look at the past in terms of the past:

We shall never succeed in measuring the past by the standards of the past, but neither may we judge it according to the standards of the present: true historiography aims at *understanding* the past by the past Stark (1994: 156).

Such an approach appears to be identical to that put forward by Butterfield (1931). Butterfield even uses the terms relative and absolute when illustrating the whig interpretation:

If we turn our present into an absolute to which all other generations are merely relative, we are in any case losing the truer vision of ourselves which history is able to give; we fail to realise those things in which we too are merely relative..." (Butterfield, 1931: 63).

Like the whig interpreter, the absolutist tells a story of progress, but timeless truths and progress make strange bedfellows.

Internal history₁ and external history₁

Once upon a time a scientist had two daughters. From an early age, the elder daughter displayed an interest in science and would often accompany him to work. Once when she was asked to describe what he did at work, she answered that he read instruments and books, wrote articles and books and spoke to people about reading instruments and books. At university she majored in science and also ended up reading instruments and books, writing articles and books and speaking to people about these activities.

The younger daughter also used to accompany him to work on occasion. When her friends asked her what her father did, she said his work seemed to have something to do with the space race but that for security reasons she wasn't allowed to divulge much. She had heard that the government had given a lot of money to his university and that he complained about all the time he spent sitting on committees. When she was asked if her father ever went to church she said that he was a devout believer and that one of the reasons he worked so hard on the space program was that he didn't want the first man on the moon to be an atheist. The younger daughter was never much good at mathematics or science and when she went to university she studied sociology.

Many years later each daughter wrote a biography of the father. That of the elder didn't contain much of what some call history, although she did mention on page one that he was born and on the last page that he had died. She concentrated instead on his activity in and around the lab, his discussions with fellow scientists on academic matters and his theoretical and empirical writings, and his attendance of scientific conferences. Although extra-scientific affairs featured not at all, the story was in other respects a warts and all story, since it dealt with scientific success and failure. On the dust jacket it was described as an internal history, and those scientists who understood it described it as fascinating.

The younger daughter wrote a history in which the only time she mentioned his theoretical and experimental work was when she said it had been adequately discussed elsewhere. The lack of detail on what happened inside the lab was

compensated by the wealth of detail on what went on outside. The book provided a background of political, religious, psychological and economic factors, and an account of an acrimonious divorce took up a chapter. On the dust jacket it was described as an external history, and politicians, priests, psychologists and economists described the account as fascinating (see Laudan, 1990: 51,58 and Hacking, 1979: 394).

The internal-external distinction was once all the rage (see Olby; Cantor; Christie and Hodge, 1990: xix-xx). Although Kuhn was hardly the first to draw attention to the internal-external distinction, his account is a standard reference (Kuhn, 1977: 110-14; 1971: 140). The Kuhnian type of internal and external history will be referred to as internal₁ and external₁ history. Basalla (1968) contains readings from both sides. Kuhn (1979: 128) warns that the internal-external split has been used in different ways. He mentions, for example, that Lakatos uses the terms in ways different from his. Lakatos's version, which will be discussed in the following section, will be indicated by internal₂ history and external₂ history.

Externalism₁ can be regarded as the view that science cannot be viewed independently of social, political and religious matters. Internalism₁ can be seen as the view that science is an intellectual activity somewhat insulated from sociological, political and religious issues. Porter (1990: 39) points out that the ideas of the internalists were challenged in the mid 1960s. Kuhn regarded himself as an internalist₁, and was rather nonplussed to find himself interpreted by the British as an externalist₁ (Kuhn; Baltas; Gavroglu and Kindi 1997: 171).

There are times when the internalist₁ view is presented as being very close to the absolutist view. For instance, Blaug notes that "... the absolutist has eyes only for the strictly intellectual development of the subject It is doubtful whether such dramatic shifts in the focus of attention [Blaug is referring to the Keynesian revolution] can be explained solely in terms of intellectual forces - as absolutists are inclined to argue" (Blaug, 1997: 2, 4).

Toulmin (1976: 143) points out that up to about the 1960s, the notion of interdisciplinary studies was frowned upon. When interdisciplinary studies started becoming more popular, the internal₁-external₁ distinction lost its bite.

Internal history₂ (rational reconstruction₂) and external history₂

Lakatos (1974: 196) presents an internal-external cut different from that of Kuhn. Lakatos's version will be specified by writing external₂ and internal₂. To distinguish his use of rational reconstruction from that of Reichenbach (RR₁) - see next section - Lakatos's version will be given as RR₂. Lakatos (1974: 215)

talks about RR_2 and $internal_2$ history in the same breath. For him an internal history is the same thing as a rational history and a rational reconstruction is equivalent to an internal reconstruction. Leijonhufvud (1976: 66-67, 72-74) links Lakatos's $internal_2$ history (RR_2) with the idea of endogeneity, thereby suggesting that an $internal_2$ history could be seen as endogenous history. The rationality involved is the rationality of the scientists when they make methodological decisions. It is not the rationality associated with profit or utility maximising characters.

Much depends, of course, on what definition of rationality is being used. Lakatos identifies four rival methodologies of science, inductivism, conventionalism, naive falsificationism and Lakatos's methodology of scientific research programmes (MSRP), and each comes with its own notion of rationality. Faced with an experiment which refutes a cherished theory, the rational procedure for a naive falsificationist would be to give up that theory. If it is not abandoned, the scientist is acting irrationally :

All that I meant by the internal-external demarcation is something very simple. For instance, suppose someone accepts falsification and further says that the Michelson-Morley experiment refuted the ether theory. If he then looks at Lorentz and finds him still working on the ether theory, the falsificationist has to say that this is not a rational activity - so he needs to explain this by some other kind of factor. It can't be explained by the rational standards of falsificationism, but it can be perhaps explained by psychopathology, by the fact that he was senile, or by claiming that this is the way the establishment behaves. This is what I call giving an external explanation, as opposed to explanations supplied by the given theory of rationality, which I term internal [Lakatos, 1974: 294-95].

For an MSRP supporter, it could be considered rational to persist with a theory even if nature responds to the question asked by the experimenter in an unexpected way. The way that $internal_2$ history is written is dictated by one's notion of rationality. Lakatos (1974: 215) acknowledges that $internal_2$ history will not tell the whole story, and must be supplemented by $external_2$ history. However, he regards $internal_2$ history as primary and $external_2$ history as secondary.

Lakatos (1974: 196) calls his demarcation "unorthodox". Backhouse (1997: 94) points out that Lakatos's cut is "unconventional" and Arabatzis (1994: 189) views it as "idiosyncratic". The $internal_2$ - $external_2$ distinction has been criticized by Kuhn (1979, 1971 and 1980) and McMullin (1984).

Lakatos's notion of rationality is a notion introduced at the meta-language level, as opposed to the object-language level. The rationality at issue has to do with the methodological inclinations of the philosopher of science. A Newtonian scientist and an Einsteinian scientist can disagree on whether or not it is rational to postulate the existence of an ether, and whether or not it is rational to be an alchemist. This is precisely the type of rationality that Lakatos is not talking about. They can, however, both be conventionalists, and share identical views on rationality at the meta-level, which is the kind of rationality that Lakatos has in mind.

Because rationality plays such an important role in economics, it is of particular importance in the history of economic thought to establish whether terms are being used at the meta-language level or at the object-language level. A Keynesian and a modern classical economist can disagree on what constitutes the rational behaviour of agents in a model. Here "rationality" is being used at the object-language level. Both economists, however, can be falsificationists, and may agree what notion of rationality is at issue at the meta-language level. (This meta-language level seems to be equivalent to the capital M Methodological level that Weintraub (1989) objects to.)

For Lakatos's approach to be applicable, the assumption has to be made that the notion of MSRP rationality is the rationality employed by the historical figures under consideration (McMullin, 1984: 141-2, Arabatzis, 1994: 180). In other words Lakatos is assuming that his twentieth century rationality is the rationality being employed by scientists in (say) the sixteenth century. This is a type of rational expectations argument applied at a methodological level.

The context of discovery and the context of justification (rational reconstruction₁)

In analysing the emergence of theories, Reichenbach (1938: 6-7) distinguishes between the context of discovery and the context of justification. He relates the context of discovery to psychological processes and points out that there is no apparent logic behind the act of discovery, where intuition rather than logical connections can play an important role. However, once a discovery had been made, the findings could be incorporated into a coherent body of reasoning. Reichenbach (1938: 5) terms the transition from discovery to justification a rational reconstruction (RR₁), noting that the term *rationale Nachkonstruktion* had been used by Carnap in 1928. Reichenbach's RR₁ involves (timeless) logical reasoning in which chronological dating (important in the context of discovery) is not important.

Once a scientist makes a discovery, he usually communicates it to fellow scientists by means of an article or book which would usually not contain any mention of how the discovery was made. In this sense, Reichenbach's RR_1 involves the study of completed science. It can be argued that the study of completed science is not history.

Reichenbach links the context of discovery to psychological and sociological factors, and refers to them as external relations. Epistemology and hence RR_1 is linked to what he calls internal relations (Reichenbach, 1938: 4). There is, therefore, an apparent correspondence between Reichenbach's discovery-justification dichotomy and Kuhn's external-internal distinction which we shall encounter in the next section. For Kuhn (1977: 110), however, internal history is not merely the study of completed science. Although Reichenbach's rational reconstruction has more in common with Lakatos's version of internalism than with Kuhn's, Lakatos seems to turn Reichenbach's point about the difference between discovery and justification upside down, when he writes that "the *rational* aspect of scientific growth is fully accounted for by one's logic of scientific discovery" (Lakatos, 1974: 215). Reichenbach's point was that the rational aspect of scientific growth was not accounted for by the discovery aspect - it was the justification aspect that supplied the rational aspect.

McMullin (1970: 15-16) distinguishes between the type of completed science one finds in text-books (which he refers to as S_1) and the type of science associated with the day to day activities of the scientist as scientist (termed S_2). An S_2 history would include provisional work, false starts, mistakes and completed work, whereas S_1 would normally include only completed works.

Salmon (1970: 68-70) suggests that there is a close link between the discovery-justification distinction and the boundaries between the history of science and the philosophy of science. According to some, writes Salmon (1970: 69), "... the study of completed science is not the study of science at all." Burian (1977: 4) who employs the logicist-historical dichotomy emphasizes that the "logicists are primarily concerned with the evaluation of theories and explanations *conceived as finished products*."

Rational reconstruction₃ and historical reconstruction

Rorty (1984) does not consider philosophy to be a discipline that provides different answers to timeless questions. He suggests that the very issues which philosophers contemplate will change from age to age, and that it is the questions, rather than the answers that change from age to age. Nevertheless Rorty argues that we often examine the past through the eyes of the present and this process is labelled rational reconstruction, with Rorty's version being

denoted by RR_3 . Thus Rorty (1984: 56) admits to a certain amount of whiggishness in RR_3 .

RR_3 is seen as an attempt to have a sort of dialogue with past writers in terms of our language (which may include mathematics). For example, a twentieth century economist can cast the features of *Das Kapital* in matrix algebra and point out that Marx was right here, made a mistake there, expressed himself badly there and so on. RR_3 contains a notion of progress - the idea is to see if the writings of past intellectuals can measure up to what we know today.

Rorty's historical reconstruction seems to lie close to Butterfield's notion of how history as (opposed to a whig interpretation of history) ought to be written. Historical reconstruction is an attempt to understand the past in terms of the past. This is, course, a council of perfection. There would seem to be little point in obtaining an education if - when it comes to undertaking a historical reconstruction - we must forget everything that we have learnt. The gist of the argument is clear enough, however. We must attempt to gain an understanding of the past through the eyes of the past. That does not mean that we have to check Kepler's calculations by means of long division.

Rorty (1984: 53) points out that historical reconstruction and RR_3 are not watertight compartments, and that in doing one, we often need to make use of the other. His exposition has been popular among economists (see Mirowski, 1987: 1858; Cot & Lallement, 1996: 55; Blaug, 1990, 1997; Brown, 1993 and Backhouse, 1994b: 116, 1995: 38). Blaug (1997: 7) and Backhouse (1994a: 5) argue that the distinction between historical reconstruction and RR_3 has a lot in common with the distinction between relativism and absolutism. Backhouse adds, however, that whereas it would be quite consistent for somebody to engage in both historical reconstruction and RR_3 , it would be inconsistent to entertain both relativistic and absolutist views. Like Rorty, Cot and Lallement (1996: 55) consider RR_3 to be whiggish, and they regard his historical reconstruction as a "contextualist account".

Whereas Lakatos (1974) makes great play of the fact that an RR_2 will depend on the type of rationality employed by the philosopher of science, when we come to Rorty (1984) we find scant mention of naive falsificationism, inductivism, conventionalism or the methodology of scientific research programmes - in fact in presenting RR_3 , Rorty (1984) makes no mention of the RR_2 of Lakatos (1974).

Text and context

When we read a document from the past, does it contain truths that are as applicable today as they were when the document was first written - in other words does the text contain timeless truths? Or was it rather a document of its time - something that needs to be viewed in the context of the time in which it was written? An admirable account of the text-context issue - an issue which has a lot in common with the absolutist-relativist question, can be found in Skinner (1969). The view that the text is all important inclines to the view that it contains timeless truths, whereas the contextualist approach suggests that the text was contingent upon particular circumstances. Skinner outlines the difficulties on either side of the divide. For instance, the reader may ascribe intentions to the author that the author never entertained, and the author may also have employed oblique strategies. Michael Jackson sings "I'm bad" when he means "I'm good".

On the contextualist side, the fact that social conditions of the time *may* be of assistance in understanding what a writer is trying to say does not mean that the meaning of a text *must* be understood in these terms. McMullin (1979: 66) writes that "The theory of science ... cannot disregard the historical practice of science, while on the other it cannot take this practice to be a consistent and sufficient norm."

The text-context issue is a perennial source of controversy in the field of literature, an issue that in turn is closely related to the issue of the intention of the author. From our school days we can all remember struggling with the meaning of poems, and what the author did or did not mean.

Is the meaning of a text to be discovered by trying to find out what the intention of an author was? There are those who offer a resounding yes to this question. Opposed to this is the view that the meaning of a text is to be found in the response of the reader (see Searle, 1994: 637). Brown (1993: 74) points out that in the history of economic thought it is normally taken for granted that the interpretation of a text will uncover an author's meaning. Despite the differences between historical reconstruction and rational reconstruction the intention in both is to recover the intention of the original author (Brown, 1993: 77). One of the features of post modernism is that it is reluctant to assign a privileged status to any particular point of view, whether it be the author or the reader.

Adam Smith introduced the labour theory of value with the aid of the famous deer-beaver example. The quantity of labour involved in catching a deer as opposed to the quantity involved in catching a beaver dictates how many deer swap for how many beavers. The example is presented in the context of a rude and early stage of civilization - in a forest in which there is no machinery. In the

forest economy labour inputs determine exchange rates. The million dollar question, in interpreting Smith, is whether the labour theory of value can be applied to forest and non-forest economies. This text-context issue is, of course, closely related to the relativist-absolutist distinction. A relativist could argue that Smith's deer-beaver theory is a theory applicable to the centuries in which men hunted in forests without machinery, whereas an absolutist might wish to claim that the labour theory of value is independent of institutional arrangements.

Intellectual history (IH) and the history of economic analysis (HEA)

In the course of presenting an overview of recent Malthus scholarship, Waterman (1998) introduced a distinction between intellectual history (IH) and the history of economic analysis (HEA). IH is linked to an attempt to understand the meanings that texts of the past had for their writers and contemporaries, partly by placing texts in the context of the times in which they were written. Since IH has a look at intellectual conversations in the light of conditions prevalent when the conversations were taking place, Waterman (1998: 303) links IH loosely to both relativism and externalism and to absolutism and internalism. An intellectual history of Malthus would thereby include an analysis of the logic of Malthus's economic doctrines, with the perspective as far as possible being that of the past. Waterman (1998: 313) points out that some intellectual historians of economic thought tend to shy away from discussing Malthus's economic theories.

The gist of Waterman's argument is that when the perspective (on the theories) shifts to the present, the economist concerned is engaged in HEA rather than IH. "HEA is a merely 'internalist' inquiry that includes ... 'rational reconstruction' ..." (Waterman, 1998: 304).

To appreciate Waterman's approach, it will be useful to dwell on the notion of rationality. The discourse is at the object-language level.

On their weary way home Odysseus and his followers light fires on the beach and place meat over them. Are they being rational in offering sacrifices to their gods? If from our vantage point we interpret their actions as having a barbecue on the beach, could we consider that as rational? It makes a great deal of difference if we analyse their behaviour in terms of our rationality or if we interpret their behaviour in terms of what they and their contemporaries would have considered rational.

McMullin (1984: 136-41) distinguishes between implicit and imputed rationality. If today we think that there were no such things as Greek gods, we might wish to say that it was irrational for Odysseus and company to offer

sacrifices. In such a situation the rationality that we are applying to them is imputed or induced. It is not the (implicit) rationality that they would have employed. (In an earlier article, McMullin (1979: 68-69) compares implicit rationality with explicit rationality. His 1984 definition of implicit rationality seems to correspond with his 1979 definition of explicit rationality.)

Newton's conception of the natural world is regarded as one of the great triumphs of science. Must we regard his sustained interest in alchemy as an aberration? Was it irrational of Newton to have entertained such alchemic ideas? If we think so, the rationality we are applying to Newton is imputed by us to him. The rationality implicit in his alchemic musings is a rationality different from that which we might wish to impute to him.

McMullin (1979: 68) points out that a distinction can be made between (1) the factors which led Copernicus to reject Ptolemy's account of celestial motion and (2) the factors we think make Copernicus's account better than Ptolemy's. The answer to (1) is not necessarily the answer to (2). Point (1) is associated with what we are here calling (after McMullin 1984) implicit rationality and Point (2) is associated with induced rationality.

Closely related to the imputed and implicit distinction is the distinction between what Burian (1977: 15-17) refers to as D-type rationality and E-type rationality. D-type rationality has to do with decisions made in the face of an uncertain future. Once the future has unfolded and everybody knows it's okay to say that the world is round, the type of rationality involved in making round-world-judgements is E-type rationality. But when Columbus sails west in the hope of coming back from the east, his rationality is of the D-type. In the face of uncertainty Columbus makes a D-type decision that we might later wish to classify as E-type. Feyerabend's (1975) analysis of Galileo's trial can be seen as an attempt to show that Galileo's argument was of a D-type rationality although it is today viewed as E-type.

D-type rationality is associated with Reichenbach's discovery context, and E-type rationality with his justification context. The link between the implicit-induced rationality distinction and the D-type-E-type distinction is close because eccentric views can become conventional wisdom.

If the past is anything to go by, it would be rational (D-type) to suppose that present day theories in economics may turn out to be quaint a couple of centuries from now. That does not prevent us from entertaining E-type rational thoughts.

When for example Waterman (1991: 222-9) discusses the economic ideas of Chalmers and contrasts them to those of Malthus, he is engaged in IH rather than HEA insofar as he is discussing their approaches in the light of implicit rationality - the rationality implicit in the economic writings of Malthus and Chalmers. In the Appendix when Waterman (1991) presents a mathematical-graphical exposition of Malthus's approach, the accent shifts from implicit to imputed rationality and Waterman's approach migrates from IH to HEA.

Waterman associates IH with history and HEA with pseudo-history. History is concerned with implicit rationality and pseudo-history with imputed rationality.

Universals and particulars

A realist posits the existence of some problematic entity, in opposition to the view that denies the existence of that entity. Since there are all sorts of problematic entities, there are all sorts of realists. Here we need to distinguish between two types of realism, namely realism as opposed to idealism, and realism as opposed to nominalism.

A person who believes in the existence of a world out there, independent of her imagining it, will be referred to as a realist_{wot}. A person who maintains that that alleged world exists only as an idea in our minds will be referred to as an idealist (idea-ist).

A person who believes in the existence of universals will be termed a realist_{univ}. A person who maintains that particulars exist, but not universals, will be referred to as a nominalist.

A nominalist would be happy to say that things such as particular stones, particular mothers, particular fathers, particular planets and particular mammals exist independently of our minds, but would be unwilling to grant existence-status to stonehood, motherhood, fatherhood, mammals and planets. A nominalist would thus admit that a particular tomato is real, that a particular painting is real, and that a particular animal that suckles its young is real, but would deny that there are things out there, independent of our minds, called redness, beauty and mammals. A realist_{univ}, however, would be prepared to admit such abstract entities into the realms of reality.

If we place nominalists and realists_{univ} at the two extreme ends of a spectrum, then somewhere between lie the views of the conceptualists. Conceptualists say that terms such as mammals, planets, redness and beauty perform useful classificatory purposes, but that they are concepts designed by humans. Rather

than contrasting nominalists with realist_{univ}, Keynes (1894) compares nominalists with conceptualists.

Questions of taxonomy inevitably enter the argument when we compare nominalism with realism_{univ} or conceptualism. Nominalists suggest that while taxonomy can perform a useful function, it is, at heart, an arbitrary exercise (see Bambrough 1961: 124-5).

Realists_{univ} maintain that universals are discovered, while conceptualists and nominalists maintain that they are invented. In the past couple of years a controversy has raged in astronomical circles on the issue of whether or not Pluto is a planet. Pluto is small - not much larger than the largest asteroid. Admittedly Pluto has a moon, but then so too do some of the asteroids. The number of asteroids discovered so far is close to 10 000, and one of the compromises put forward in the debate is that Pluto should be assigned dual citizenship, i.e., that planetship should be retained but that Pluto should also be labelled as asteroid number 10 000 (see Beatty, 1999 and *The Economist*, February 6th 1999: 89-90).

Whereas particulars are time- and space-bound entities, the same is not true for universals. At four o'clock on Friday afternoon there may be three red tomatoes in my kitchen. Those three particular tomatoes are not likely to be around for long, but their presence in my kitchen does not preclude you from having red things in your kitchen.

CONCLUSION

A list of the dichotomies discussed appears in Figure 1, which has been drawn to correspond to the distinction Waterman (1998: 325) makes between left and right eye vision. The right hand side of the diagram contains items that have to do more with particulars than with universals. (This is by definition true of the row in which universals and particulars appear.) Items on the right hand side need to be linked to time and space. The items on the left hand side of the diagram are associated with the general rather than the particular and are less likely to be linked to time and space.

In the opening pages of undergraduate science textbooks, one is likely to come across statements to the effect that science is concerned with making general statements. From the particular observations that cork floats on water, that balloons float in the air and that steel floats on mercury, a scientist would be interested in drawing a general conclusion such as: the item with the lower specific gravity of the two is the one that will float.

Figure 1 **Various dichotomies employed in historiography**

history_{whig}	&	history_{But}
absolutism	&	relativism
justification context (RR₁)	&	discovery context
internal history₁	&	external history₁
internal history₂ (RR₂)	&	external history₂
text	&	context
rational reconstruction (RR₃)	&	historical reconstruction
history of economic analysis (HEA)	&	intellectual history (IH)
universals	&	particulars

Such a general statement contains a theoretical term (specific gravity) that is not tied to particular events.

Reichenbach (1951: 5,7,8) points out that generalization is one of the hallmarks of science (see also Backhouse 1997: 84). For the historian, however, it is the particular rather than the universal that is of importance. The following statements from Butterfield, Kuhn and McMullin attest to this. In each quotation the emphasis is added.

[The historian] deals with the tangible, the concrete, the *particular*, he is not greatly concerned with philosophy of abstract reasoning... His training and habits of mind and all the methods of his research fasten him down to the *particular*... he piles up the concrete, the *particular* ... The whole process of historical study ... is to carry us from the *general* to the *particular*... [Butterfield, 1931: 66,67,69].

The final product of most historical research is a narrative, a story, about *particulars* of the past. ... The philosopher, on the other hand, aims principally at explicit generalizations and at those with *universal* scope [Kuhn, 1977: 5].

Its goal [i.e. the goal of the history of science] is to establish the *singular*, not the *universal* ... The historian is concerned with what happened just

because it did happen. He may call upon *universal* of all sorts in his effort to establish what happened or why it happened. But his goal is not the assertion of a *universal*, a pattern, or the interlinking of such patterns. That is the task of the philosophers, the sociologist, the economist, whose use of the materials of history does not commit them to the reconstruction of any specific set of historical events... The historian tries to recreate the *singular* in all its individuality; he emphasizes context and distrusts *generalization*. [McMullin 1970: 54-5, 58].

The belief that rationality (at the object level) is timeless tends to be associated with the left-hand side of the figure, whereas the view that rationality is time-bound is more in keeping with the right-hand side.

It would appear that one's temperament has a lot to do with whether one is more interested in the right or the left hand side of the figure (see Russell, 1998: 57; Winch, 1998: 59 and McMullin, 1979: 78-9). Toulmin (1976) tries to identify long term cyclical swings between the approaches that favour timeless logic and those which accentuate the temporal. Another way of looking at Figure 1 is to associate the left-hand side with facts and the right hand side with theory. That we may need theories to tell us what facts to look for (and what not to look for) indicates that the left and right hand sides of the figure are complements, rather than substitutes.

Although the two are intertwined, the left hand side of the figure has more to do with observing than explaining, and the right hand side has more to do with explaining than observing. That raises the question of who is doing the observation and who is doing the explanation. Suppose we have in front of us a picture of a comet, drawn in the thirteenth century. Those whose temperaments place them on the left hand side of the figure would want to try to understand what is going on in the picture through the eyes of those who observed it in the thirteenth century. Those who prefer the right hand side of the figure indicate that they wish to accord greater weight to what twentieth century observers of comets know.

ENDNOTE

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