Bristol Polytechnic 1981 – MA in Historical Studies

"Causes certainly are connected with effects; but this because our theories connect them, not because the world is held together with cosmic glue." (N.R.Hanson) Do you agree with this view? What implications does it have for the writing of history?

"There is nothing either good or bad, but thinking makes it so." [*Hamlet* IIii]

Efforts to define the idea of causation have always run into great difficulties. Some writers, such as Bertrand Russell, considered that the word 'cause' should be done away with entirely. However, this does not solve the problem, since in order to make any efforts to interpret, or even describe, an historical event the use of substitute terms such as "gave rise to", "resulted in", and "brought about" is required. Such terms are obvious attempts to link together two or more 'facts' or events, yet beg the question of what the nature is of such links.

'Objective' definitions have been attempted, for example by Hume. He postulated that if any one event were observed to be followed with regularity by another then such a sequence might provide a definition of cause and effect. Yet obvious cases (such as night following day) show that these sequences often have a more complicated relationship – such as having a common 'higher cause' (the earth revolving). The problem then arises of how far back, or 'up', one should go in looking for a 'higher cause' in order to find the 'complete cause' behind any particular effect. This in turn had led to suggestions, going back to the Greeks, that there must somewhere be a First Cause which is ultimately the 'cause' of everything.

These kinds of problems arise in the first instance from a false conception of language itself – the idea that its function is to 'correspond' as closely as possible to an external objective reality. It is this misconception which has led people such as Taine to see a genuine distinction between 'facts' and 'causes', as if they were different species of phenomenon (as if 'causes' were the threads linking the hard 'facts'), and as if it were the task of language, and therefore philosophy, to make the distinction clear. Eighteen-century philosophy had a similar problem with 'mind' and 'matter', discussing how the two could be linked, and only subsequently was the distinction shown to have been a false one in the first place.

Similarly it will be the burden of this essay to show that there is no qualitative distinction to be made between 'facts' and 'interpretation' (since even perception itself is an interpretive process), and that there is therefore no fundamental distinction to be drawn between 'causation' and 'explanation'. Instead 'causation' is a particular kind of explanation, though it falls within the framework of the general concept of 'explanation'.

The fact that the title quotation is seen as controversial is perhaps a demonstration of how uncertain many people are about the nature of knowledge itself. They feel the need to show that causes exist 'out there', independent of the human mind. The fear is that if it cannot objectively be proved that there is a 'real' connection between, for example, the social structure of eighteenth-century France and the subsequent revolution, or the magnetic field and the electric current passing through it, there is no way of being scientifically certain of anything. If the connections are 'only' in our minds, the world suddenly seems to many to become a much more uncertain place, where anyone can more or less believe what they want. Furthermore when the phenomenalist suggests that matter only exists as sense-impressions, the fear arises that matters outside man's immediate apprehension cannot exist independently and in their own right. Under such circumstances how can we study the world around us with any confidence that we might gain knowledge of which we can be reasonably certain?

The first step is to realise that there are other, perfectly satisfactory possible solutions apart from the Scylla of complete certainty and the Charybdis of absolute relativism (in its various forms). The second step is to realise that the search for such solutions is neither just a task for purely empirical research, nor is it a task for logical reasoning alone. Instead it is a conceptual question, which will have to rest at some point on a value decision – a presupposition. Alongside this it is important to realise that this is a task we share with the people often thought to be closest to pure, deep objective knowledge – the physicists. It was after all a physicist, Heisenberg, who formulated the Principle of Uncertainty.

The major breakthrough out of classical physics was made by Einstein when (among other things) he showed that it is impermissible to speak of absolute time. It is because time requires an observer to take readings in order to determine 'simultaneity' and measurement, that modern physicists began to realise that the observer was an essential and active element in their study. Under Einstein this element combined with the fact that the speed of light is finite, and is also independent of the movement of its source, to produce the theory of relativity. Einstein however rejected the further step taken by Heisenberg, (but which is now generally accepted by physicists), which showed that the tiniest atomic particles could only be studied in relation to an observer. Because such particles are so small, they react strongly to any medium, such as light, by which they might be observed; so that they can only be observed in their reaction to such media. They can therefore only be observed as a pattern of movement, and to speculate on what they are 'really' like (when nobody is looking) is completely meaningless. This quantum theory is perhaps the ultimate illustration of Heisenberg's Principle of Uncertainty, and although Einstein himself rejected such a conclusion ("He does not play dice.") his work on relativity had pointed the way. Indeed it is Einstein's comment "It is the theory which decides what we can observe" [J. Bernstein, *Einstein*, p155] which might be considered to be the theme not only of this essay, but also for the entire study of the natural and social sciences. Only Hamlet puts it more eloquently.

For I do not wish to labour these points taken from modern atomic physics, but merely use them as an illustrative starting-point. They show that even the most respected of modern scientists will now only study their material as observable phenomena, and they have decided that to speculate as to the 'true' nature of reality (unrelated to a human observer) is a literally meaningless exercise in science.

However I must emphasise, digressing briefly, that this does not mean that every scientist has to become a phenomenalist, believing that our world is 'really' just a series of sense-impressions. Instead he has only to recognise that this is the only way in which the material world can be studied scientifically i.e. in a way which is empirically verifiable. So when William Blake asks, in 'The Marriage of Heaven and Hell':

> "How do you know but ev'ry Bird that cuts the airy way,
> Is an immense world of delight, clos'd by your senses five?"

- the answer or answers are to be sought in art, literature, religion, metaphysics or philosophy (all perfectly legitimate in themselves), but not in science.

Meanwhile the next step is to realise that we do not receive these sense-impressions passively. Countless experiments, together with selected everyday experiences, show that the act of vision itself is an interpretive process, in which learned presuppositions will influence what one 'sees'. For example, Western man expects most angles to be rectilinear, so that in one celebrated experiment involving a cleverly-constructed room of peculiar proportions the Western 'eye' (in fact the brain) perceives one of two men in that room as a giant and the other as a midget. The very act of perception itself is an interpretive process whereby we

relate the sense-impressions of the moment to our own expectations of the world, built up from experience, and form the new picture accordingly. In order to comprehend what we are perceiving we need to impose patterns, which in turn help us to remember, and make sense of, what we are seeing. Indeed it can be argued that without our minds imposing some kind of pattern (whether 'scientific', 'artistic' or whatever) our level of actual perception and comprehension is very limited indeed. If a chess grandmaster and a non-player are each asked to memorise the positions of chessmen after (say) move 15 in a tournament match it is not surprising that the grandmaster can do this far better than the non-player – but if the thirty-two chessmen are placed on a board at random the non-player's recollection is likely to be as good.

Our "theory" therefore "decides what we can observe" in everyday life as well as in atomic physics, and the value of the theory is not measured by some idea of whether it is 'ultimately' true or 'real', but in its usefulness in making sense of the world for us. For example a beam of light displays the properties of waves, when shone through a prism, and of particles, when directed onto an energy-sensitive plate. In theory it is impossible for something to be 'really' both a stream of particles and a series of waves at the same time – yet it is an accepted paradox in physics that light does display both characteristics. But the physicist does not (any longer) waste his time trying to prove that light is 'really' either waves or particles, but instead accepts that in this case he has a phenomenon which displays the properties of both. The language we use to describe the properties of light has succeeded in making the phenomenon intelligible – which is the important job – and its failure to reveal the 'true' nature of light is irrelevant.

The best illustration, or analogy, of the nature of knowledge is to think of the function of maps. When photographs (i.e. exact visual representations) are taken of our world (whether it be a picture of all Europe taken from a satellite, or Bristol taken from a light aircraft) perhaps the most staggering realisation is just how little information they immediately reveal. The earth is frankly unrecognisable from the moon, Bristol (or any other town) looks just like a mass of tiny boxes, while the TV weatherman always has to draw on the satellite photograph to show where Great Britain is. Of course a great deal of information can be extracted by an expert, but all everyday information about the world around us is much more readily available by the use of maps.

The 'boundary' of a map is an arbitrary, or value, decision based on defining the scope of a particular inquiry, e.g. an atlas is needed to show the relative positions and features of Brazil and China, but an Ordnance Survey map would to the equivalent job better for Bristol and Bath. Similarly each map sets its own terms and symbols depending on what exactly it is trying to illustrate, i.e. a map showing political boundaries, physical features, climate, vegetation or whatever. No one, incidentally, tries show that one kind of map (or scale of map) is intrinsically better than any other – since they are designed to answer different questions. The map makes the world intelligible according to the 'rules' it sets itself – and a false map is one that has broken its own 'rules' – but there is no attempt to offer an exact representation of the world in the sense of saying that motorways are 'really' blue and the British Commonwealth is 'really' pink. Indeed it is typically the function of maps to highlight features such as roads, giving them exaggerated physical proportion, because of their specially useful significance to us.

The way in which a map transmits 'knowledge' to us therefore illustrates how 'fact' and 'interpretation' are not separate items, but are irrevocably part of each other. Nevertheless, in history and indeed in science, when the element of time enters the proceedings, the

temptation remains to think of causes and effects as an 'extra' dimension that is being 'added to' the given material – the 'cosmic glue' in the title dimension.

Yet what these expressions of 'cause' and 'effect' usually relate to is practice are the properties of the subject-matter. When we say that radioactive material 'causes' a Geiger counter to click we describe the effect of radioactivity on the functioning part of the Geiger counter – and thereby imply that if the counter didn't click then either we did not have radioactive material or we did not have functioning Geiger counter. To say that 'steam pressure' causes the Flying Scotsman to move is to say something the property of water when heated to comparatively high temperatures – and also something about engines which can make use of such steam. However, causation in this scientific context does not in principle admit exceptions or contradictions: - if a prism did not split a beam of 'white' light into the colours of a spectrum (all other conditions being equal) then it could not be 'white' light as know it. To say that a prism 'causes' white light to split up is to describe a property that has been observed in white light. Any light which did not display this property must be something else.

The concept of 'causation' does not therefore really add anything to what is simply already being described. The relations between the 'things themselves' are not additional to, or separate from, the 'things themselves' – those relations are part of those properties which make those 'things' the things they are.

Nevertheless we still use 'causation' in order to offer a 'complete' explanation of a phenomenon – but when we do, as in the examples given above, it takes on the quality of a tautology. The 'glue' which is holding the explanation together is not out in the external world, but is within the explanation itself, in that it defines itself in such a way as to admit of no exceptions. Thus a scientific law can be reduced in an exercise of logic, to a generalisation about the properties of the material we are studying: Kepler's law in this saying "Planets behave like planets". The so-called Principle of the Uniformity of Nature in fact only tells us that there is a relatively finite number of different classifications of phenomena in the universe, and that within each classification a phenomenon can be reasonably be expected to continue to display the properties and characteristics it has always displayed. It is this relatively low number of classifications that allows the natural scientist to come up with 'general laws' that offer a high degree both of certainty and methodological value. (The fact that they are tautologies does not detract one iota from their value – any more than it does for mathematical equations.)

In the social sciences, in which I include history, the subject-matter is very different – human beings are much less subject to completely reliable generalisations. A few display characteristics (or properties) that contrast sharply with the norm - .e.g. having no legs, or being prepared to starve themselves to death – yet in contrast to our earlier examples these kinds of exception to the rule do not (for most people) remove them from remaining within the general category of, in this case, mankind. Therefore when the historian talks of one event 'causing' another he is much less likely, despite the persuasion of Popper and Hempel, to refer to general laws – because it is rarely possible to reduce the explanation to a tautology.

Nevertheless I would still argue that the structure of the explanation he offers does not differ so radically from that offered by the natural scientist. The scientist does not go on and on proving that his general laws are continuing to hold good, but instead they become a presupposition for him, offering a basis for an explanation of particular events. Interestingly a lot of these kinds of explanation are about why the general law didn't apply – because of some other factor intervening. For the natural scientist the 'general law', once formulated, becomes in effect a presupposition – a set of defined terms – upon which a particular explanation will

then be founded. For explanation in both the natural and social sciences consists entirely in the linking, in our minds, of what we do not yet understand to what we already do understand. Without an accepted staring-point no explanation can take place – and in this sense the 'link' is clearly in the mind.

But in relation to 'explanation' perhaps this is not controversial. Yet for many 'causation' will still be seen as a different thing altogether – as something which goes on outside the human mind, something 'objective'. However it is my contention that when analysed 'causation' is shown to be no more than a part of the concept of 'explanation'. We have seen that the only way we can scientifically come to know the external world is through measuring the observable, and that the process of perception/observation alone is an interpretive one. Furthermore we have seen that the relations between observed phenomena themselves; when we make 'general laws' about such relations we are in effect describing and defining the properties of the different phenomena. It is therefore my next step to argue that if 'explanation' is the overall process whereby we make the external world intelligible to the human mind, then 'causation' is a particular concept we use in order to discuss the relations between different phenomena. Because the relations are not separate from the phenomena themselves the use of the concept of causation is therefore to be seen only as a figure of speech.

Such a description is not used in order to make the concept of causation redundant; rather the opposite. The term 'cause' and its synonyms, together with 'effect', announces that it is the relationship between two or more phenomena that we want to talk about. It is the fallacy of hypostasis which leads some to see what is only a figure of speech as a separate class of phenomena.

It is therefore my case that the overall structure of an explanation is much the same in both the natural and social sciences – in both cases a presupposition is required so that a link can be made between what we do not (yet) understand to what we do understand. The important general difference between the two sciences is in the kinds of presupposition to which the relevant explanations are attached. As referred to earlier, because of the nature of their subject-matter natural scientists are able to formulate reliable 'general laws' which serve to define that subject-matter – and these become presuppositions upon which most people therefore agree. Then when a particular question is asked – "What caused the car to stall?" – the presuppositions about how an internal combustion engine functions are assumed as the starting-point, and the particular answer to the question – "The handbrake was left on" – supplies the answer within the terms of those presuppositions in an uncontroversial manner.

The "presuppositions" in the natural sciences are not absolute or objective in the way that is frequently thought, as I explained earlier, but nevertheless because of the subject-matter the presuppositions find a wide level of agreement. This level of agreement is not in evidence in the social sciences for two fundamental reasons. The first is that there is a level of variety in the subject-matter – mankind itself – which would appear to be virtually limitless. The second is that we, the 'observer', are *within* that subject-matter itself, which means that the perspective we gain on this particular subject-matter is very different from that which we have on any other. Complementary to these factors is the problem that each individual man has the *apparent choice* of how he will behave – but I am going not further into that minefield on this occasion. Instead at this stage I want to show that the kind of causal explanation given in the preceding paragraph rarely suffices for a piece of human behaviour.

In that last example a car which did not become liable to stall when the handbrake was fully applied would not comply with our normal assumptions of what is a motor-car. "The

handbrake was left on" is the element in which our 'particular' car deviates from our normal expectation of a car, and is therefore the 'cause' of its failure to function properly. In a human example – "Why did Hitler invade Poland? (What caused him to do it?)" – the possible answers vary according to, first, one's assumptions about human behaviour in general, and secondly one's assumptions about what kind of human being Hitler was. "Because he was bad" or "Because he was mad" might be perfectly satisfactory explanations for some people, but others might wish to find a more complicated explanation. The psychoanalyist might connect Hitler's behaviour with the fact that he hated his mother, the student of Clausewitz might seek to show that it was only a miscalculation within a carefully-thought-out war plan. Evidence can of course mustered to support each of these kinds of explanation, but more fundamental is whether the observer is prepared to accept the different presuppositions on which each explanation is based.

However, although such explanations vary, none of them put Hitler outside the definition of 'human being', and therefore as much of the debate is about human behaviour in general as it is about this particular act of this particular man. In the social sciences the presuppositions continue to be as subject to continuous debate as are the 'particular explanations', and the two debates are often confused with each other. The natural sciences, with their relatively uncontroversial presuppositions, then come to be regarded with some envy and admiration. But if the social scientist does his job properly, clearly stating what his assumptions and terms are, he has nothing to be ashamed of in the kinds of explanation he is giving. He is making the world intelligible in a way that does not differ qualitatively from natural scientific method.

In my view this ought to bring clearer thinking into the writing of history – but this does not involve any kind of radical change. E.H.Carr once described history as a dialogue between the historian and his facts. Although this has been described by some as 'neo-positivist' outlook (perhaps because of the word "facts"), it serves instead for me as a reminder that the study of history is a continuous process of evaluation. The key word for me is the original Greek 'ιστορια – inquiry. The task of any scientist, including the historian, is to put his question, or series of questions, to nature (as it was once called), and, particularly importantly, to define the boundaries and terms of that inquiry and of the kind of answer(s) being sought. If you omit to do that, you richly deserve the consternation experienced by those pandimensional beings in *The Hitch-Hikers' Guide to the Galaxy* who waited seven and a half million years for their computer Deep Thought to work out that the definitive answer to the Great Question of Life, the Universe and Everything was "forty-two".

Once the general scope of the particular inquiry has been properly set the idea of causation, far from becoming either dangerous, deceptive or redundant, becomes invaluable. The word "cause" and its synonyms serve as 'red alert' signs that an interpretation is being offered by the writer. Despite my insistence that such terms add nothing to our concept of explanation, we need them badly as figures of speech. In our language ideas and concepts are nouns – and as nouns they are very convenient to handle for discussion purposes. But it is not the job of language to 'correspond' objectively with the outside world, and it is a mistake to make a noun into a 'thing', just as it is to think of an object and its properties as being two separate 'things'.

"Pilot error" does not exist as a 'thing', but it was the 'cause' of a recent air crash according to the Spanish inquiry. The British Airline Pilots Association said it was the "Spanish air traffic control system" that was at fault. Nobody thinks that either mysterious entity found some way of plucking the aeroplane out of the sky – instead they each represent to us ideas about what can make a modern airline flight safe or unsafe. The decision as to which aspect deviated

more from the expected norm in this particular case is an evaluative decision to be made by each 'observer'. This example would appear to be a suitable case for the counterfactual conditional – should one or other factor not have been present, would the crash have still occurred? Whatever the actual answer, 'the cause' is a relative concept, not an absolute one. It is the part of the problem which, for the purpose of a particular inquiry, we have decided to mark out as being enough to explain the problem once the presuppositions are agreed upon.

Causation is therefore an invaluable linguistic device, which if handled properly emphasises the evaluative nature of historical inquiry – but it is only thinking which "makes it so".

[The tutors were kind, described it as "pure Bridges", and marked it at 73%]