HUME: A REASSESSMENT*

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ABSTRACT

The purpose of this paper is to consider an alternative to the logical positivist interpretation of Hume. A non-rationalist interpretation of the Scottish Enlightenment, is discussed as the context for Hume's thought, putting the focus on his theory of human nature as the basis for science. By emphasising the limitations both of reason and of observation for understanding reality, Hume showed how science could draw on other human faculties to provide a basis for action. Smith's adaptation of Hume's work in his philosophy of science and in his economics is discussed as further evidence that Hume's thought can be interpreted as being incompatible with logical positivism.

Key words: Hume

Smith

Scottish Enlightenment

logical positivism.

INTRODUCTION

David Hume has been characterised as laying the foundations for the development of logical positivism, by philosophers of science such as Rosenberg (1993), and by economists such as Fitzgibbons (1995). This characterisation of Hume (or at least Humean philosophy) is most consistently made by critical realists (see Lawson, 1997), following on the characterisation of Enlightenment philosophy made by the transcendental realist philosopher Bhaskar (1975).

Logical positivism is associated with the view that science consists solely of empirically-testable statements. As Ayer (1959: 14, emphasis in original) depicted the approach:

> 'First it is *empiricist and positivist*: there is knowledge only from experience, which rests on what is immediately given. This sets the limits for the context of legitimate science. *Second*, the scientific world-conception is marked by the application of a certain method, namely *logical analysis*. The aim of scientific effort is to reach the goal, unified science, by applying logical analysis to the empirical material.'

Hume was critical of idealism, claiming that knowledge arises only from experience, or 'sensation':

> 'When we run over libraries, persuaded of these principles, what havoc must we make? If we take in our hand any volume; of divinity or school metaphysics, for instance; let us ask, *Does it contain any abstract reasoning concerning quantity or number?* No. *Does it contain any experimental reasoning concerning matter of fact and existence?* No. Commit it then to the flames: for it can contain nothing but sophistry and illusion.'

(Hume, *EHU*: 165, emphasis in original)

Further, the way in which we use sensation in order to infer causal relations is by observing constant conjunctions of events:

> 'It follows, then, that all reasonings concerning cause and effect, are founded on experience, and that all reasonings from experience are founded on the supposition, that the course of nature will continue uniformly the same. We conclude, that like causes, in like circumstances, will always produce like effects.' (Hume, *TM:* 651).

Taken in isolation, these quotes provide evidence in support of the view that Hume did indeed provide inspiration for the development of logical positivism.

> Yet there is a growing philosophy literature now which questions the logical positivist reading of Hume (see for example Wright, 1983 and Strawson, 1989); this work builds on the pivotal work of Norman Kemp Smith (1905a, 1905b, 1941) which was the first modern statement of a non-positivist interpretation of Hume. It is the purpose of this paper to reassess Hume along these lines particularly in relation to economics. This is compatible with some of the discussion of Hume arising from the Keynes's philosophy literature (see Carabelli, 1988 and Meeks, 1991, for example). The discussion here extends to Smith, because of Hume's undoubted influence on him, and because of

Smith's influence in turn on the development of economics. Indeed, we will reconsider the philosophical contribution of the Scottish Enlightenment in general in relation to positivism. Such a reconsideration is of interest in itself, but is also important for the interpretation of Hume. In considering Hume's context, we will draw on another reassessment: that of the nature of the Scottish Enlightenment as has emerged recently in the history literature (see for example Allan, 1993). While it had been conventional to treat key figures in the Scottish Enlightenment (and particularly Hume) in isolation from their intellectual context, the focus of the reassessment has been on the distinctive features of the Scottish Enlightenment, and its origins, which were a common influence on all who were part of that tradition.

In what follows, we outline the environment which shaped Hume, identifying key features which Hume shared and subsequently developed. We then consider Hume's influence on Smith and the relation between Smith's approach to economics and logical positivism. The conclusion is reached that, while the traditional interpretation of Hume was indeed an inspiration for logical positivism, another interpretation may be supported which suggests that Scottish Enlightenment thought in general, and that of Hume in particular, are incompatible with logical positivism.

INTELLECTUAL CONTEXT

The nature of the intellectual environment which shaped Hume and Smith has been a matter for dispute. The traditional view has been that the key figures of the Enlightenment period were an aberration in an otherwise backward economic and cultural environment. This view stems from influential Victorian historians such as Buckle, was reinforced by Trevor-Roper (1967) and was given authority more recently by Smout (1969, 1983). Lough (1985: 9) puts it in its most extreme form as follows:

> 'such Enlightenment as existed in eighteenth-century Scotland was confined to a tiny minority who lived surrounded by a narrow-minded nationalism and bigoted puritanism which have survived in part down to our own day'.

This view supports the interpretation of Scottish Enlightenment thinkers in the terms of other national Enlightenments, and can thus serve to explain why Hume and Smith have been misunderstood (in relation to what they may be said to have meant in terms of their own intellectual environment).

Yet this view of the Scottish Enlightenment is now seriously challenged by those who have placed it in the context of intellectual developments in Scotland which date back to the fifteenth century and can only be understood in terms of the political, religious, educational and cultural environment (see Davie, 1961, 1973; Broadie, 1990; Allan, 1993; Beveridge and Turnbull, 1997). Considering Hume and Smith against this background suggests a very different interpretation of their philosophy of science from that which led to logical positivism.

Unlike England, the political environment in Scotland was one in which questions of jurisdiction and authority did not have clear answers, or clear means of establishing answers. It has been argued that, in medieval times, personal authority had played as much a part as birth in the royal succession. The union of the Scottish and English crowns in 1603 and the Act of Union in 1707 raised new questions about

royal succession, as well as questions about nationhood, legitimation and the relationship between church and state. Hume, it should be remembered, was writing around the time of two armed rebellions (in 1715 and 1745) which revolved around the question of the British royal succession. It has been argued that it is this context which nurtured the characteristic Scottish interest in metaphysics. As Sutherland (1982: 136, italics in original) points out:

> '..the Scots are theologians and metaphysicians, for the origins of Scotland, as Knox and his collaborators helped to shape it, lie *in part* at least in metaphysical arguments about nationhood and legitimation. As such there was a peculiar Scottish need for systematic thought, the outcome of which was an unusually strong preoccupation with questions about the nature and scope of reason.'

Scottish metaphysics had a strong historical focus. 'History itself would become the means to defining and identifying the characteristics of the model social leader' (Allan, 1993: 88). Calvinism had further encouraged the view that social leadership should be based on virtue rather than birth, and historical study indeed was seen by the Church as second only to scriptural study as a means of revealing God's work.

Revelation of God's work in turn can be understood as a process of learning about causation (see Beveridge and Turnbull, 1997). The purpose of learning was thus not scholastic, but practical, a means of promoting virtue at both individual and social levels. Nor was this learning to be the preserve of an elite. The Church promoted general primary education explicitly to promote general literacy in order to read scripture; it is estimated that reading literacy was almost universal, at least in the Lowlands, by the mid-eighteenth century (see Anderson, 1997). Those Enlightenment thinkers who questioned the authority of the Church nevertheless adopted a similar agenda, studying history in order to learn about causation with a view to promoting personal and social virtue, discussing the proper basis for identifying causation, and grappling with the same issues with respect to freedom and determination. While the traditional view of the Scottish Enlightenment saw it as a dualistic rejection of Calvinism, there is good reason to see it rather as a secular continuation from Calvinism.

Further, while Scottish Enlightenment thought did refer to issues raised elsewhere, notably by Mandeville, Hobbes and Locke, the moderate scepticism of Scottish metaphysics was already well-established in the stream of common sense philosophy which could be traced back at least to John Mair in the early sixteenth century. Common sense philosophy originated in the Aristotelian tradition. It saw the possibility of transcendent knowledge arising, not from individual senses, but from the operation of all senses in conjunction. According to the seminal statement by Dugald Stewart (1915: 231-2), this transcendent knowledge allowed the identification of causal laws, where most outcomes are in fact the result of a combination of causes. The philosophy is founded on a belief in existence as a metaphysical or transcendent truth whose pragmatic adoption could be justified in the same way as we justify adoption of mathematical axioms.

Also stemming from Aristotle was the tradition of natural law philosophy, referring to an underlying order in natural phenomena (see O'Brien, 1975: 22). In Scotland, the natural law approach was applied also to jurisprudence and to morals.

While Calvinism provided a theological basis for belief in natural law, Enlightenment thinkers, under the lead of Hutcheson, attempted to provide an empirical basis for that belief. Hume was notable for denying the possibility of empirically proving a divine origin for natural law, and thus for aiming to establish instead a purely secular natural law on an empirical footing (see Forbes, 1975: 61). But Hume was not sanguine about the existence of natural laws. The application of natural law to jurisprudence and morals implied that an underlying social order was not assured, ie that action was required to ensure order:

> 'discovery of natural laws,.. if followed, lead to the best possible situation; ... positive legislation should reflect these natural laws'
> (O'Brien, 1975: 22).

It is worth emphasising the importance of practical reason for the Scottish Enlightenment. While Bhaskar (1975), for example, emphasises the epistemological character of Scottish Enlightenment thought, the underlying purpose was action (both individual and social), in terms of virtue, in terms of politics and in terms of science. The historical foundation for all knowledge, further, laid emphasis on change and evolution, and the possibility of action to transform that evolution. As Macfie (1990: 12) puts it:

> '[t]he central assumptions of Benthamite Utilitarianism are themselves antithetic to the whole spirit of the Scottish social school. The main philosophic contrast is between a mechanistic psychology, which inevitably eliminates any truly moral theory, and the optimistic forward-looking assumptions of the Scottish school; or again it is seen in the fact that the Scots saw the central fact as a *growing* society, a creature quite different from any mere individual, whereas to Bentham any society was merely an aggregate of individuals.'

At the heart of the Scottish Enlightenment, therefore, was a theory of human nature, where individuals were seen as social beings (Wokler, 1988: 146). With some exceptions, the predominant view was that there is a uniformity to human nature, although that uniformity is manifested differently in different contexts. This issue was of immediate significance, in terms of how the native North Americans should be viewed, in terms of the attitude to slavery and, closer to home, the attitude of the Hanoverian officers in the aftermath of the 1745 rebellion which suggested that 'they regarded the Scots in general as an inferior race, and the Highlanders in particular as benighted savages' (Beveridge and Turnbull, 1997: 75).

This intellectual background for the Scottish Enlightenment can thus be seen to have various features not normally associated with logical positivism: a grounding in history; history understood as an open system; knowledge understood as an open system and as a social product; the purpose of knowledge being action; a consciousness of the distinction between ontology and epistemology. It is against this background that we now consider the contribution of David Hume.

DAVID HUME

Hume was one of the key figures in Scottish Enlightenment philosophy (along with Hutcheson and Smith), publishing his *Treatise on Human Nature* in 1739-40 (*THN*),

his *Enquiry Concerning Human Understanding* in 1748 (*EHU*) and his *Enquiry Concerning the Principles of Morals* in 1751 (hereafter *EPM*), as well as numerous essays, some addressing economic subjects. He is best known for his scepticism, and his empiricism, both of which have been taken by many to lay the groundwork for logical positivism. We examine this claim in this section. It should be pointed out at this stage that Hume's work is large and complex and, as with all great thinkers, involves contradictions. It is therefore not at all surprising that there should be several competing interpretations of Hume. At the very least, the aim here is to demonstrate that the interpretation of Hume as the father of logical positivism is only one possible interpretation. The alternative interpretation offered here is put forward as making more sense in terms of the interpretation of Hume's context offered in the previous section.

First, Hume took the distinction between ontology and epistemology seriously. He argued that neither existence nor causation could be established by means of reason:

> 'there is nothing like a proof concerning our rational notions of ourselves and of the world outside. We have experience, but experience only suffices to give us factuality, not necessity. It therefore restricts our knowledge to things experienced, excluding us from any knowledge of things to come.'   (Luthe, 1984: 110)

Nevertheless, Hume proceeded on the basis of belief in existence, in an echo of common sense philosophy:

> 'We may well ask*, What causes induce us to believe in the existence of body?* but 'tis vain to ask*, Whether there be body or not?* That is a point, which we must take for granted in all our reasonings'
>
> (Hume, *THN*: 187, emphasis in original).

While for some, Hume's scepticism about the scope of reason and observation is seen as destructive, Hume did not see it as impeding science. Rather he saw himself 'clearing the ground for science' by specifying the proper scope for knowledge.

> 'If we had only reason and the senses, the faculties championed by previous philosophers, we would be mired in a debilitating and destructive uncertainty. So unfortunate an outcome is avoided only by the operation of that apparently unreliable third faculty, the i*magination*. It, by means of what appear to be a series of outright mistakes and trivial suggestions, leads us to believe in our own selves and in independently existing objects. The scepticism of the philosophers is in this way confirmed...and shown to be of no practical import.'   (Norton, 1993: 11, emphasis in original).

Indeed, in a volume devoted to making the case that Hume is a sceptical realist, Wright (1983: 27) argues that Hume suggested that human nature made scepticism unsustainable in practice, whatever its force in logic.

Rather than dismissing the imagination as unscientific, Hume welcomes it as providing scope for science. Elsewhere, he talks of the gap left by sensation and reason being filled by the passions, sentiment, habit or convention, or by judgement (Hume, *THN*: 183). Indeed, Hume (*THN:* 415) sees 'the passions' as being prior to reason. It is convention, he argues, not reason or sensation, which provides the basis

for natural law. Further, it is the science of man which provides the 'basis for *all* our knowledge - including logical and mathematical knowledge and the knowledge of the natural sciences' (Luthe, 1984: 113-4, emphasis in original). Far from being concerned to base science purely on reason, Hume aimed to show the limitations ot reason and the need to start with sentiment, without which science could not proceed. As Hume (*THN:* xv) himself put it:

> 'Tis evident, that all the sciences have a relation, greater or less, to human nature; and that however wide any of them may run from it, they still return back by one passage or another. Even *Mathematics, Natural Philosophy, and Natural Religion*, are in some measure dependent on the science of MAN; since they lie under the cognizance of men, and are judged of by their powers and faculties.' (emphasis in original).

For all Hume emphasised the underlying uniformity of man, his approach was non-axiomatic.

> 'If Hume did argue that the principles of human nature were constant, he also appreciated that the way in which men *behaved* would be profoundly affected by the socio-economic environment which might happen to exist; by changes in habits, customs and manners. By the same token Hume also wished to make the point that certain economic relationships would be affected by these factors'   (Skinner, 1994: 35, emphasis in original).

Further, Hume (*EPM*: Appendix II) explicitly rejected the idea that the moral sentiment which determined behaviour could all be reduced to narrow self-interest, thus ruling out one particular avenue for axiomatising human behaviour. Indeed, Hume's overall system was not axiomatic. While the starting-point was a belief in existence, this was only a working hypothesis, as was the belief that nature was uniform (Hendel, 1955: xxii-xxiii).

> Hume posed his system in opposition to the idealists who derived results deductively from axioms, which Hume referred to as 'fictions'. He explicitly distinguished fiction from belief in that the latter is based on involuntary sentiment, arising from experience in general and the particularities of the situation (*EHU*: 48). Hume emphasised the importance of empirical evidence (derived from 'sensation'), even though observation could not reveal causation. This was his problem of induction, that causation, even though it existed independently of the mind, could not be understood independently of the mind, and could therefore not be fully understood:

> 'If we have really no idea of a power or efficacy in any object, or of any real connexion betwixt causes and effects, 'twill be to little purpose to prove, that an efficacy is necessary in all operations. We do not understand our own meaning in talking so, but ignorantly confound ideas, which are entirely distinct from each other. I am indeed ready to allow, that there may be several qualities both in material and immaterial objects, with which we are utterly unacquainted; and if we please to call these *power* and *efficacy,* 'twill be of little consequence to the world. But when, instead of meaning these unknown qualities, we make the terms of power and efficacy signify something, of which we have a clear idea, and which is incompatible with those objects, to which we apply it, obscurity and error begin then to take place, and we are led astray by a false philosophy. This is the case, when we transfer the determination of the thought to external objects, and suppose any real

intelligible connexion betwixt them; that being a quality, which can only belong to the mind that considers them.'

<div align="right">(Hume, *THN*: 12, emphasis in original).</div>

Hume proceeds to argue that the only reasonable basis for the idea of causal power is the sensation of constant conjunction of events (even thought that cannot capture real cause). The argument is elaborated in the *Enquiry Concerning Human Understanding*, where Hume further explores the concept of power (in section VII). He argues against the practice of ascribing power to some invisible source such as the deity, and promotes the limitation of science to inference of power from sensations of cause and effect.

It is easy to see from these passages, and those surrounding them, why Hume should be interpreted as directing social science towards an empirical method based on statistical correlation. But considering Hume's argument further in its context suggests an alternative interpretation. Hume was arguing against the use of *a priori* reasoning and the appeal to an unobservable power. He was arguing further against unthinking analogy between causal power as perceived in the mind and real causal power. Real causal power itself cannot be observed (and this applies to the workings of the mind, just as to external phenomena, see Hume, *EHU*: 14). The influence of natural law philosophy is evident in Hume's *belief* that there are underlying causal forces. As Kemp Smith (1941: 94, emphasis in original) put it:

> 'Thus in all instances of causation.... what we *contemplate* is at most *uniformity* of sequence; in all cases what we yet also *experience* is a feeling in terms of which we are enabled, and constrained, to *believe* in what we yet never comprehend, the occurrence of causal happenings, and so to *believe* in what we variously entitle 'necessary connexion', 'power', 'force', 'energy'.
>
> This teaching, which is so central in Hume's philosophy, allows of statement in other terms. If we study the causal relation not directly but in the *propositions* in which it is asserted, we find that they have no *cognitive* or *theoretical* certainty. Neither reason nor evidence can be cited in their support. Their certainty is not that of insight in any form, but exclusively of belief - an attitude of mind which is explicable solely by reference to the *de facto* constitution of our human nature.'

Sensations give us the best opportunity of developing the idea of causal power, supporting belief in their existence. We can never know (or know that we know) real powers; our best chance is to employ observation.

> 'It is confessed, that the utmost effort of human reason is to reduce the principles, productive of natural phenomena, to a greater simplicity, and to resolve the many particular effects into a few general causes, by means of reasoning from analogy, experience, and observation. But as to the causes of these general causes, we should in vain attempt their discovery...These ultimate springs and principles are totally shut up from human curiosity and enquiry....The most perfect philosophy of the natural kind only

staves off our ignorance a liitle longer; as perhaps the most perfect philosophy of the moral or metaphysical kind serves only to discover larger portions of it.' (Hume, *EHU*: 30-1).

Further, while Hume argued that the idea of cause could be inferred from observed constant conjunction of events, this does not in practice support the statistical correlation approach. Hume employed simple 'event' examples, but this did not mean that he was referring exclusively to predictions within given structures, or that there could be any presumption that cause and effect would be replicated in the future, ie there was no presumption that, in reality, the extrinsic or intrinsic conditions for closure were satisfied. Indeed the problem of induction is addressed precisely to this issue. Hume explicitly contrasts the demonstrative nature of reasoning concerning the relation of ideas with moral reasoning, concerning fact and existence:

> 'that there are no demonstrative arguments in the [latter] case seems evident; since it implies no contradiction that the course of nature may change, and that an object, seemingly like those which we have experienced, may be attended with different and contrary effects'
>
> (Hume, *EHU*: 35).

Thus, in a discussion of Hume's philosophy in relation to Mackie (1965, 1980), Drakopoulos and Torrance (1994: 179) conclude (see also Wright, 1983: 26 and Strawson, 1989):

> 'On this view of causality ... causal explanations emphatically do not usually refer to visible surface regularities of the sort 'an event of kind F is invariably followed by an event of kind P'. More commonly, explanations will refer to deeply-embedded bundles of interacting causal principles, and will thus have to take serious account of the overall environmental setting in which each particular state of affairs to be explained is actually situated.'

This interpretation is supported by a study of Hume's other writings, including his own contributions to economics. In the Scottish tradition, his approach was historical, emphasising the particularities of circumstances. Hume indeed is a historian as much as a philosopher, perhaps his most noted work being *The History of England*, in which he demonstrated the evolution of the governmental system in England as the result of a range of real tendencies rather than human artifice (see Skinner, 1993). In economics, Hume is best-known for his early statement of the Quantity Theory of Money. But here too Hume's method was historical, human sentiment being central, so that the Quantity Theory referred to only one of several operative tendencies. For example, while discussing the determination of the rate of interest (see also Hutchison, 1990: 42):

> 'Hume thus concluded that the most important single factor was not simply the supply of money, but a change in manners and in the form of economic organisation....The technique just considered counsels caution in offering generalisations in economics'
>
> (Skinner, 1993: 237-8;).

Further, in addition to his static statement of the Quantity Theory of Money, Hume argued for increasing the money supply to encourage entrepreneurship and increase productivity.

> 'Hume was seeking to show that the frequently posed question as to what was the 'right' quantity of money for a country was, in the long run [in the abstract sense], meaningless'   (Hutchison, 1990: 45).

Hume's resistance to idealist argument stems from his objection to incorrect use of analogy (see Sutherland, 1982). Hume used negative analogy to great effect, as a mechanism for identifying regularity from a series of sensations. (We recognise the category 'egg' as a result of observing a variety of types of egg.) But he objected profoundly to analogies between different levels (ontological, epistemological and divine). His argument against rational belief in God was based on the argument that belief in the divine cannot be justified in terms of an analogy with the human. His argument against *a priori* reasoning was based on the argument that *a priori* identification of causal power cannot be justified in terms of analogy between ideas and the real. Hume thereby avoids the epistemic fallacy, as it is identified by Bhaskar. Belief in God, and belief in the real, rely on sentiment, not on pure reason.

It is in the context of the prior role of sentiment that Hume poses the normative/positive distinction, arguing that others had not used it properly. According to Forbes's (1977: 47-8) interpretation, in the absence of demonstrative proof of positive statements, normative statements have priority. Since imagination and sentiment are prior to and necessary for knowledge, then all knowledge is conditioned by normative statements. Hume's purpose in drawing attention to the distinction was to make clear that those, such as Hutcheson, who were attempting to derive natural law from observation were implicitly engaging in a normative exercise. Hume's empiricism, in contrast, rested explicitly on normative judgement. Thus, rather than arguing that science should eradicate normative judgement, Hume simply argued for the nature and role of normative judgement to be made explicit and clear (Hume, *THN*: 469).

ADAM SMITH

Smith, like Hume, has been subject to different interpretations. In particular, the conventional interpretation stemming from a rationalist perspective has treated Smith's economics in isolation from his philosophy, and has seen him as the inspiration for the building of a complete, closed, axiomatic, general equilibrium system. But interpretations which have considered Smith's work in its entirety and have placed it in the context of eighteenth-century Scotland suggest that there is little basis for this interpretation (see Winch, 1997). We shall consider Smith in this latter sense, which is compatible with our interpretation of Hume. But, rather than considering Smith's legacy for the content and method of economic theory, we focus here on his methodology in relation to the subsequent development of logical positivism.

There can be no question that Hume was a direct influence on Smith (see Raphael, 1977), nor that both were subject to common influences, notably Francis Hutcheson, and that both were responding to the needs of the day which philosophy and economics were attempting to address: providing a foundation for ethics and science, and policy with respect to the changing economic environment. Smith did not share Reid and Beattie's interpretation of Hume as a destructive philosopher; Smith adopted key features of Hume's thought and developed it further in his theory of science, in his theory of moral sentiments and his economics. It is our purpose here to

argue for an interpretation of Smith, such that he held in common with Hume an approach to science which is not compatible with logical positivsm.

Smith adopted Hume's view that ideas have their origin in observation, but that ideas may then be developed in the mind (Fitzgibbons, 1995: 197-8). Smith made no particular contribution to the question of the existence of the real, other perhaps than in considering the relationship between the real and language (as well as the more conventional real and sensation, see Wightman, 1980: 133-4). But, while Hume had introduced the notion of the imagination or sentiment as supplying common sense belief in the real, Smith developed the notion of imagination or sentiment as supplying the very motivation for pursuing the idea of causation. In his *History of Astronomy* (hereafter *HA)*, Smith explained the psychological motivation for science in terms of the sentiments of wonder, surprise and admiration. Unexplained phenomena excite wonder, which encourages the development of theories. We then admire theories which order our understanding of apparently chaotic phenomena in terms of familiar concepts, and we are motivated then to change those theories if surprised by discordant appearances.

> 'Philosophy is the science of the connecting principles of nature....Philosophy, by representing the invisible chains which bind together all these disjointed objects, endeavours to introduce order into this chaos of jarring and discordant appearances, to allay this tumult of the imagination, and to restore it, when it surveys the great revolutions of the universe, to that tone of tranquillity and composure, which is most agreeable in itself, and most suitable to its nature. Philosophy, therefore, may be regarded as one of those arts which address themselves to the imagination.'

> (Smith, *HA*: 45-6)

Thus, Smith grounds science in observation, although clearly distinguishing the psychological process of science from the real; but science evolves by reference back to the real and attempts to adjust knowledge to take account of contrary observations. Smith thus carries forward Hume's understanding of the distinction between the ontological and the epistemological, while adopting the common sense belief in the existence of the real:

> 'Systems in many respects resemble machines. A machine is a little system, created to perform, as well as to connect together, in reality, those different movements and effects which the artist has occasion for. A system is an imaginary machine invented to connect together in the fancy those different movements and effects which are already in reality performed.'   (Smith, *HA:* 66)

Smith thus developed Hume's notion of theories as being an attempt to overcome the limits to reason. Smith's discussion in the *Astronomy* of four approaches to the subject illustrates the view that no one true theory is knowable, and sentiment will determine which is preferred. Smith (*HA*, 105) notes the temptation to regard theories as true, notably Newton's theory of gravity, although it is only a construct of the mind which other generations may choose to reject. Smith's notion of belief in imaginary systems is offered in the same way as Hume's common sense belief in the existence of real things.

Smith was an admirer of Newton's system of astronomy, and aspired to build a system of political economy. But his historical approach meant that the system had to be treated as open, concentrating on processes (where these processes need not lead to equilibrium) rather than equilibrium states; this differs from what we now know as a general equilibrium system (see Skinner, 1996: chapter 5). While Hume's open-system approach stemmed explicitly from our inability to identify the real underlying systemic processes (the real system could be closed, but we could not identify it as such), Smith's open system approach stemmed explicitly from his observation of social and economic behaviour.

Smith, like Hume, embeds his philosophy and economics in a theory of human nature. He refers to mankind as having common motivations; philosophy, for example, only differs from other modes of enquiry through the education and diligence of those who become philosophers. In the *Theory of Moral Sentiments* (hereafter *TMS*), Smith develops the Humean notion of sympathy to portray man as a social being, belying the popular interpretation of Smith whereby self-interest is understood as selfishness. Further, just as scientific theories cannot be regarded as true, so self-delusion is a general possibility. Smith (*TMS*: 181) focuses particularly on the delusion that riches promote happiness, although this has the positive by-product of promoting entrepreneurship and thus economic growth.

This is one of many examples in Smith of unintended consequences, which together are understood as the operation of the Invisible Hand. Smith used this concept primarily in the *Theory of Moral Sentiments* to refer to the role of sentiments, particularly in the form of sympathy, in taming individual behaviour; moral judgements might be made not only on the basis of sympathy with other humans, but also on the basis of sympathy with an impartial observer (either imagined, or in the form of the deity). As far as the economic system is concerned, intentional behaviour is addressed to self-interest (although that self-interest has to be understood in social terms), but has the unintended consequence of systemic coordination. For the individual the consequence is uncertainty (see Skinner, 1972; 1996: chapter 5). Smith explicitly rejected utilitarian representations of human nature because it could not address man's social nature (see Smith, *TMS*: 192-3).

Smith was, like Hume, an empiricist in the sense that theory was prompted by and was referred back to observation. This was intrinsic to the historical method. Smith also carried forward Hume's view of causality in terms of observation of contiguity (*HA*, 40-41). Smith argued that theories were psychologically satisfying if they could simplify reality according to a chain of reasoning from a few principles. And yet he saw these principles as working hypotheses, to be checked against observation, rather than axioms. Smith thus shared Hume's dislike of *a priori* axiomatic systems. While theories could not be said to be true, Smith could identify lack of truth, and he did so with reference to the *a priori* reasoning of Descartes, in his *Lectures on Rhetoric* and *Belles Lettres* (hereafter *LRBL)* :

> 'It gives us a pleasure to see the phaenomena which we reckoned the most unaccountable as deduced from some principle (commonly a wellknown one) and all united in one chain.....We need not be surprised then that the Cartesian Philosophy....tho it does not perhaps contain a word of truth....should nevertheless have been so universally received by all the Learned in Europe at that time. The

> Great Superiority of the method over that of Aristotle....made them greedily receive a work which we justly esteem one of the most entertaining Romances that has ever been wrote.'

<div align="center">(Smith, LRBL: 146)</div>

Smith argues that theories are more readily accepted the more they draw on principles already widely-held. But it was easier for mathematics and the natural sciences than for poetry to develop principles independent of popular sentiment (Smith, *TMS:* 124-5). This allowed mathematics and natural science to be more free of reverence for the past than subjects more in the public domain (see Wightman, 1980: 14-5), which would include the social sciences; but there is also the implication that, the more removed are subjects from the public domain, the greater the latitude they have to be protected from confrontation with contrary evidence.

The importance of grounding in observation for Smith is clearly evident from his writing in economics, notably his *Enquiry into the Nature and Causes of the Wealth of Nations* (hereafter *WN*). Here we see an example of the historical method being employed in order to tease out a theory about the generative mechanisms of the economic system. Smith focused on human sentiment toward betterment, and the process of the division of labour, as key elements of that process. The historical approach emphasised how, in particular, human sentiment is manifested differently in different contexts. As the theory evolves from the historical analysis, it is checked back against further historical instances.

This in turn created a vision of the economic process, which might be regarded as transcendent. Smith saw capitalism developing by means of the division of labour, spurred on by (socially-grounded) self-interest. But the unintended consequences were not all beneficial. In particular, Smith was concerned about a tendency towards monopoly which would subvert capitalism's capacity to meet individual needs, and about the tendency of factory production processes to create working conditions which, in comparison with more primitive societies, promote moral decay. In other words, following in the tradition of Scottish common sense philosophy, Smith did not see wealth and virtue as necessarily being jointly-promoted by capitalism. Rather Smith's theory provided the justification for action to promote virtue, such as enhanced provision of education. Heilbroner (1986: 155) denies that Smith achieved theoretical transcendence; certainly he did not in the sense that Marx did. But the transcendent vision was one of an open, evolving system, without any fixed end-point to the operation of its tendencies, but rather a basis for policy action depending on the strength of the various tendencies. Certainly others have criticised Smith for not digging deep enough for his generative mechanisms; John Rae in particular argued that the division of labour itself required explanation. But Smith's aim was to identify generative mechanisms, even if he fell short of his aim (see Dow et al, 1998).

CONCLUSION

We have attempted here to develop the argument that Hume's philosophy of science can reasonably be understood to be incompatible with logical positivism. The argument took account of Hume's intellectual background, and also considered the implications of his philosophy of science as developed in the work of Smith which was apparently inspired by Hume.

Central to both Hume and Smith's philosophy was a theory of human nature, where humans are social, and where human conventions vary with historical context. Further, human behaviour is governed significantly by factors other than reason - imagination, passion, sentiment, judgement, and convention - because reason does not provide an adequate basis for knowledge or action. Logical positivism constrains science to the applciation of logical analysis to empirical material. But, for all Hume's emphasis on observation (as a counterpoint to idealism), his central argument, according to this re-assessment, referred to the inadequacy of *both* reason and observation for science; science could only proceed on the foundation of the other human faculties. Thus liberated from the limits to reason and to observation, science could be addressed to action in an evolving social environment where the operation of natural law was continually tempered by the particularities of context.

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