



Human Intelligence: Adam Smith and Behavioural Economics¹

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Abstract

Behavioural economic theory explores the basis for behaviour in human intelligence, with Adam Smith's *Theory of Moral Sentiments* sometimes being cited as an important precursor. Here we investigate the particular way in which Smith is interpreted by behavioural economists compared to alternative interpretations, with a focus on Smith's impartial spectator. It is argued that these different interpretations follow from different approaches to economics more generally. In particular it is argued that 'new' behavioural economics is unduly constrained by retaining as its benchmark the mainstream approach, whose models are based on rational atomistic individuals. The paper concludes with a consideration of how behavioural economics can be enhanced by taking on board Smith's broader views of human behaviour and his open-system approach to theorizing.

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1. Introduction

A major development in recent decades has been the emergence of artificial intelligence (AI). In that AI is anticipated to increase productivity by replacing and enhancing human intelligence, some further reflection on human intelligence is called for. This is particularly the case if AI cannot explain, and therefore replicate and predict, all aspects of human intelligence. For example human intelligence arguably draws on a more broad concept of cognition than the exercise of strict rationality applied to empirical evidence, encompassing not only analytical intelligence but also practical, creative and emotional intelligence. If we are to have a good understanding of what governs human behaviour we can draw on a range of relevant work in economics. As Zouboulakis (2014, 2023) shows, the history of economic thought encompasses a rich range of understandings of rationality itself. Here we consider the related contributions of Adam Smith and behavioural economics.

For a long time most economists associated Adam Smith only with his magnum opus, the *Wealth of Nations* (Smith 1776). This work is highly pertinent to consideration of the kind of

¹The focus on human intelligence reflects the context in which the paper was presented: the 8th International Conference on Applied Economics, 'Economics & the Social Sciences in the Age of AI', Volos, 21-23 Sept 2023.

structural (social and technological) change faced by modern economies (Winch 1997). But Smith's other contributions were largely ignored. Indeed his *Theory of Moral Sentiments* (Smith 1759) with its focus on the social nature of individuals was disregarded partly because it seemed incompatible with the pursuit of self-interest of the *Wealth of Nations*: the 'Adam Smith Problem'. However among Smith scholars there was no problem; the consensus was that for Smith the self-interest of the *Wealth of Nations* already encompassed the social dimension.

In the last few decades wider attention has turned to the *Theory of Moral Sentiments*. This has particularly been the case for behavioural economists concerned with a more realist account of self-interested behavior than that represented by the abstract 'rational economic man' figure of neoclassical economics. Indeed some leading behavioural economists have highlighted the importance of Smith's insights. Ashraf, Camerer and Loewenstein (2005, p.140) argue that Smith offered 'insights that presage developments in contemporary behavioral economics' and also that his work 'suggests promising directions for economic research that have not yet been exploited' (*ibid.*, p. 132). We explore here how far Adam Smith is indeed the father of modern behavioural economics. We also consider promising directions that modern behavioural economics might take under Smith's inspiration.²

In particular the following discussion will explore further the connection that behavioral economists perceive with Smith's *Theory of Moral Sentiments*. We then consider an alternative interpretation of this work, building on Smith's theory of human nature, including his philosophy of science. We compare these two interpretations in terms of the different types of system applied, with a particular focus on the role of the impartial spectator. The paper concludes with a consideration of how behavioural economics can be enhanced by taking on board Smith's views of human behaviour.

2. Behavioural economics

The traditional abstract characterisation of human behaviour in terms of 'rational economic man' has long been the subject of challenge, particularly on methodological grounds (see e.g. Zouboulakis 2014, 2023 and Drakopoulos 2022b). But the empirical challenge posed in recent decades by experimental evidence which contradicted the predictions of standard theory was eventually persuasive within mainstream economics. This method of appraisal, explicitly espoused by leading behavioural economists Camerer, Loewenstein and Rabin (2004), accorded with mainstream falsificationist methodology.

Behavioural economics then evolved as ideas from psychology were used to explain the apparently irrational behaviour revealed in experiments. The focus was thus on explaining actual behaviour rather than the abstract behaviour of rational economic man. The evidence indicated a range of behaviours which suggested themes to be addressed by Kahneman and Tversky's (1979) prospect theory: loss aversion, overconfidence, altruism and a concern with fairness, for example. All appeared to be inconsistent with calculative rationality.

Ashraf, Camerer and Loewenstein (2005) identify these themes as having been set out already in Smith's account of human behaviour in *The Theory of Moral Sentiments* which they discuss in relation to Smith's concept of the 'impartial spectator'. While acknowledging

²The term 'modern behavioural economics' is used here to encompass both approaches represented by 'new behavioural economics' and 'old behavioural economics' (Sent 2004).

the many roles that the impartial spectator plays in *The Theory of Moral Sentiments*, they focus on one of the roles articulated by Smith:

When it comes to choices that involve short-term gratification but long-term costs, the impartial spectator serves as the source of ‘self-denial, of self-government, of that command of the passions which subjects all the movements of our nature to what our own dignity and honour, and the propriety of our own conduct, require’ (Smith [1759] 1976, I.i.5.1)³, much like a farsighted ‘planner’ entering into conflict with short-sighted ‘doers’ (Ashraf, Camerer and Loewenstein 2005, p. 132).

A particular connection is made with the concept in the modern psychology literature of a ‘dual process’ with respect to decision-making. Ashraf, Camerer and Loewenstein cite Shefrin and Thaler’s (1981) work on self-control in relation to the impartial spectator. Behaviour is the outcome of ‘planning’ to pursue a rational goal in the face of an emotional urge to ‘do’ otherwise (to smoke, or to eat excessively, for example). Similarly a dual process is evident in Kahneman’s (2011) notion of thinking fast and slow where the former incorporates the role of instinct or emotion and the latter of careful deliberation.

The impartial spectator is thus depicted as encouraging the replacement of short-term impulses by the exercise of reason with respect to long-term consequences. It is presented as the triumph of reason over sentiment: ‘Adam Smith’s actors in *The Theory of Moral Sentiments* are driven by an internal struggle between their impulsive, fickle and indispensable passions, and the impartial spectator’ (Ashraf, Camerer and Loewenstein 2005, p. 142).

3. An alternative interpretation of Smith

The distinction drawn between sentiments (the passions, emotion) and calculative reason in Ashraf, Camerer and Loewenstein’s account of *The Theory of Moral Sentiments* conflicts with the interpretation that for Smith cognition and sentiment were intimately related (Dow 2011). For Smith, far from bring something to be suppressed by reason, sentiment was foundational to knowledge. This interpretation follows from taking account of the full corpus of Smith’s work, and especially his philosophy of science (as set out in his 1795 essay on the history of astronomy).

For Smith the nature of real (physical or social) subject matter was such that it was not feasible to demonstrate truth: any knowledge about the real world was generally held with uncertainty. He saw reality in terms of an open system whose causal mechanisms could not be accessed directly. While real experience provided the basis for identifying patterns, the organic complexity of underlying processes was such that there could be no guarantee that such patterns would persist. Deductive argument was therefore insufficient for identifying these processes. Smith made this case (as did Hume) with respect to Descartes’s rationalism from which input from experience was absent. While Descartes’s theory of fluxion was persuasive for almost a century, Smith (1762-3, ii.134) regarded it as ‘one of the most entertaining romances that have ever been wrote’, ‘tho it does not perhaps contain a word of truth’. However inductive argument also fell short since it required the certain knowledge that past causal forces would continue into the future. The most robust form of argument was abduction, inspired by the Scottish interpretation of Newton’s experimental methodology (Montes 2008).

³Reference altered from original to refer to the 1976 edition.

In his efforts to make sense of the structural change which society was undergoing in his time, Smith developed a systems approach to understanding society and also knowledge itself (Skinner 1976). But, given the openness of these complex evolving systems, new theories were inevitably partial and provisional. Smith (along with Hume) concluded that any study of science had to start with a theory of human nature which would explain why and how science proceeds in spite of its incapacity to demonstrate truth. For Smith sentiment provides the initial motivation to seek knowledge without which scientific enquiry would not occur; indeed without which no activity would occur.⁴ A sense of surprise and wonder at unexplained phenomena prompted a search for explanations which would set the mind at rest. These sentiments draw on the human faculty of imagination. In the absence of fully demonstrable argument, the success or failure of a theory rests on its reception by different audiences, requiring the exercise of rhetoric as a means of persuasion.⁵ Here again, along with reason and evidence, human sentiments including the aesthetic sense are crucial to the outcome. They are also crucial when, as Smith explained in relation to the history of astronomy, theories that have been shown to be unsatisfactory (like Descartes's theory of fluxion) continue to attract support as a matter of social convention. As Hume (1739-40, p. 183, emphasis in original) put it: '*all our reasonings concerning causes and effects are deriv'd from nothing but custom; and ... belief is more properly an act of the sensitive, than of the cogitative part of our natures*'. Persuasion thus involved the exercise of rhetoric and the appeal to the imagination as well as to experience and reason (Smith 1762-3). Under Hume's influence, Smith thus focused on the psychological question of how people come to accept the truth of certain propositions (Loasby 2003, p. 296).

Kim (2017, p. 108) summarises the key features of Smith's philosophy of science as follows:

In Smith's view of science, scientific activities have various facets. Rather than engaging with these facets piecemeal, it is more helpful to consider them together. First, the process of scientific inquiry is driven by several human faculties, including the sentiments of surprise and wonder, imagination, reason, the ability to communicate, and a desire for original pleasure and for good. The human faculties for science proposed by Smith thus include what are termed affective and cognitive systems in modern neuro-scientific terminology. The use of these various human faculties in the process of scientific inquiry explains the need for science to contain many features displaying not only human rationality, but also aesthetic, rhetorical and sociological aspects.

Smith and Hume's shared open-system ontology and accordingly-limited epistemology meant that belief played a large part in cognition. Belief in turn was generally the product of social custom or convention. As Smith explores in the *Theory of Moral Sentiments*, individuals are *essentially* social, such that socially-established customary beliefs form a crucial input into behaviour. Thus, since knowledge has a fundamentally social aspect and is motivated by sentiment, the cognition/emotion dual (just like the individual/social dual) is not helpful. Smith explored in his *Theory of Moral Sentiments* 'the human tendency to look for guidance from others in resolving difficulties and to behave in ways which seem to merit approval' (Loasby 2003, p. 297). Not only knowledge (in the form of belief) but also behaviour relied on social convention. For example market behaviour employed social conventions, including moral sentiments, using the imagination in the exercise of sympathy to gauge how a price offer might be received. Even in the market context self-interest includes attention to how behaviour is regarded in society.

⁴Modern neurology has demonstrated the necessity of the emotional function of the brain for decision-making (Damasio 1994).

⁵Smith's (1762-63) theory of rhetoric, with its focus on persuasion, was a departure from the then-prevalent focus on style.

While Smith addressed a range of sentiments in *The Theory of Moral Sentiments*, he was particularly concerned with moral sentiments; as Kim notes above, a desire for good may be a motivation for science. The impartial spectator was thus imagined by Smith as a personification of conscience, envisaged as an independent observer. As such the impartial spectator was imagined to remind the subject of moral principles, or virtues, with respect to rights and duties. For Smith a leading virtue was propriety, a quality identified with reference to how others judge behaviour. The impartial spectator is a mechanism for encouraging social virtues, such as prudence, justice and beneficence, tempering the force of self-love. It operates through the exercise of the imagination, which facilitates sympathy in the sense of seeing behaviour from different perspectives. Smith's sympathy is a more complex concept than its customary use as 'compassion'. As a social being man values himself by the real or imagined judgements of others, and pursues the goal of self-respect by exercising the virtue of self-command to constrain selfish tendencies (Montes 2004, Dow 2010). Smith (1759, I.i.1.1) opened *The Theory of Moral Sentiments* as follows:

How selfish soever a man may be supposed, there are evidently some principles in his nature which interest him in the fortune of others, and render their happiness necessary to him, though he derive nothing from it except the pleasure of seeing it.

With a subsequent elaboration of the statement's implications:

And hence it is, that to feel much for others, and little for ourselves, that to restrain our selfish, and to indulge our benevolent, affections, constitutes the perfection of human nature; and can alone produce among mankind that harmony of sentiments and passions in which consists their whole grace and propriety (Smith 1759, I.i.5.5).

Smith was therefore not arguing for the primacy of sentiments since not all sentiments were benign in promoting the social good. Smith pointed out that our imaginations may lead us to under- or over-state the sentiments of others, to unreasonably fear losses, or to be over-confident, for example – all cases identified by behavioural economics in experimental evidence. Smith expressed moral disapproval of strongly held sentiments, or passions, arguing that they tended to repel sympathy. He explicitly distinguished between social and unsocial passions (Smith 1759, I.2). He was also wary of the selfish passions, i.e. the force of self-love. He gives the example of a man being less concerned with the death toll following a Chinese earthquake than the prospect of the loss of his little finger, While this striking passage is generally taken as evidence of Smith's focus on atomistic self-interest, the full passage demonstrates Smith's more complex moral sensibility, which takes account of the scope for morally-motivated action. Smith proceeds to make it clear that this expression of self-love was only morally acceptable if there was no means of impacting on the outcome of the earthquake (Smith 1759 III.3.4-7).⁶ Smith believed that our behaviour should be impartial, in the sense of effectively applying the injunction to 'do unto others as you would have them do unto you'.

It is clear therefore that the impartial spectator cannot be depicted simply as tempering sentiment with reasoned judgement. Not only does reason itself for Smith rest on sentiment but also moral sentiment is a dominant focus for judgement with respect to the behaviour of social individuals motivated by a sense of propriety. How far does behavioural economics capture such complexity?

⁶I am grateful to Robert McMaster for making this argument.

4. Behavioural economics in the light of Smith: a methodological comparison

Behavioural economics captures elements of Smith's *Theory of Moral Sentiments*. But we have seen that the behavioural economics notion of the impartial spectator is more limited than Smith's original notion. For behavioural economics the impartial spectator constrains short-sighted sentiment with reasoned judgement, separating cognition from emotion. While Ashraf et al. (2005) refer to moral goals when they see the impartial spectator acting as a conscience constraining selfish behaviour, satisfying moral principles does not tend to feature as a goal of behaviour in standard behavioural economics. Indeed moral principles only tend to feature as a separate *preference*, as in 'altruism'. For Smith on the other hand moral principles established by social convention conditioned the self-interest of individuals as social beings and were integral to behaviour. The impartial spectator was the vehicle for the application of virtue ethics. Reasoning was just one of the human faculties employed, along with sentiment and the imagination, to pursue this goal.

The practice of conceptual separation, as between cognition and emotion, is characteristic of the closed-system approach of mainstream economics (Dow 2011). It contrasts with the organic interdependencies of an open-system approach like that of Adam Smith. This organic interdependence carries over into Smith's characterisation of the factors accounting for human behaviour.

We can thus see the origins of the two approaches to cognition and sentiment in their respective epistemological systems. Smith's system of social science (Skinner 1996) drew on his various contributions, particularly on the philosophy of science, rhetoric, moral philosophy, jurisprudence and economics, in an interconnected way. Indeed it is pertinent that he taught his system first with ethics, then jurisprudence, and only then economics (Skinner 1992, p. 401). The philosopher (scientist) drew on the human faculties identified by Smith - imagination and moral sense as well as reason – such that theories emerged and were judged not only by human rationality, but also on aesthetic and rhetorical criteria within the constraints of a social context (Kim 2017, p. 108). Theory emerged by drawing patterns from experience. In Smith's case that experience referred to extensive study of different historical and geographical contexts. The various characteristics of behaviour identified by Smith in the *Theory of Moral Sentiments* emerged from Smith's systemic approach to theorising on the basis of experience.

The origins of behavioural economics are instead found in experimental evidence designed to isolate subjects and choices from disturbing influences. It draws on psychological theory which has its own systems. But drawing this theory into economics has meant understanding it in terms of systems of thinking in economics. While 'old' behavioural economics was pitted against the calculative and fully-informed rationality of mainstream economics, 'new' behavioural economics has incorporated psychological theory into the theoretical and methodological system of mainstream economics (Drakopoulos 2022a). As Kahneman (2003, p. 1469) put it, 'Theories in behavioural economics have generally retained the basic architecture of the rational model, adding assumptions about cognitive limitations designed to account for specific anomalies'. Further, while new behavioural economics was initially distinctive methodologically by relying on experimental methods, Camerer and Loewenstein (2004, p. 7) argue that the field has now 'embraced the full range of methods employed by economists'. While new behavioural economics has been notable for the rejection by some of the assumption of global rationality, the urge to base theory on a shared core nevertheless remains strong:

The enduring appeal of classical asset-pricing theory over the last several decades owes much to its success in forging a consensus around a foundational modelling platform. ... If behavioural finance is ever to approach the stature of classical asset pricing, it will have to move beyond a large collection of empirical facts and competing one-off models, and ultimately reach a similar sort of consensus (Hong and Stein 2007, p. 126).

Consistent with the system of mainstream economics, new behavioural economics uses the standard approach of methodological individualism. While attention is paid to human interaction, behaviour is depicted as being oriented to optimisation with respect to the goal or goals of the individual (Drakopoulos 2022b). Further it is a requirement of identifying a shared core of behavioural economics that theory be expressed in deductivist formal mathematics. This methodology encourages dualistic categorisations, as between 'rational' and 'irrational' or 'cognition' and 'emotion'. This methodology further conditions the treatment of experimental evidence which seem to conflict with the calculative rationality benchmark of mainstream theorising. These results are treated as 'anomalies' which are used as 'inspiration to create alternative theories that generalize existing models' (Camerer & Loewenstein 2004, p. 7).

Regarded as departures from rational behaviour the anomalies are interpreted as picking up biases which are the explanandum of behavioural theory. There are two sets of explanans. One set focuses on the possibility that these biases in human behaviour are the result of some impediment to applying rationality. This impediment could be cognitive, reflecting limited capacity for reasoning. This is a problem which can be addressed by education (as in promoting financial literacy for example) or by 'nudging' policies which steer behaviour in the direction of the objectively rational outcome while retaining freedom of choice (Thaler and Sunstein 2008). Alternatively the impediment could be emotional, the area of greatest input from psychology. While moral sentiments were at the core of Smith's behavioural theory, as highlighted by Ashraf, Camerer and Loewenstein (2005), this source of 'emotional' bias is not central to the behavioural economics literature. Certainly other-regarding behaviour is evident from studies based on the 'ultimatum' game and has been the inspiration for much analysis. Nevertheless its status as a deviation from the norm is evident from Camerer and Loewenstein's (2004, p. 37) assertion in this context that: 'The assumption that people maximize their own wealth and other personal material goals (hereafter just "self-interest") is a widely correct simplification'.

Another set of explanations for the 'anomalies' revealed by experimental evidence is that behavioural biases are in fact rational, in the pursuit of self-interest. In other words the standard assumption of global rationality can be retained. For example behavioural game theory is based on the results of a number of experimental games which test for interpersonal trust (Kreps 1990; Berg, Dickhaut and McCabe, 1995). The analysis concludes that trust is the outcome of the calculatively-rational motivation to maximise expected payoffs, i.e. it is not in fact other-regarding. This contrasts with Smith's depiction of trust as the outcome of a long history of social convention aided by the imagination through sympathy (Zouboulakis 2010; Hughes 2010). Second, what seemed to be a bias could be the result of institutional arrangements which distort incentives. Thus the apparently irrational inattention to risk among financial institutions ahead of the financial crisis could in fact be interpreted as a rational response to incentives given the practice of central banks to provide them with support, i.e. a case of moral hazard.

Finally the 'dual-process' depiction of instinct as distinct from rationality is challenged by the argument that instinct, or intuition, is in fact an exercise in subconscious rationality, or at least it is unintentional irrationality. This argument provides an alternative to the interpretation of intuition as being driven by emotion. Drawing on the cognitive psychology

literature on heuristics, behavioural economics has associated biases with the short-cuts in reasoning resulting from constraints, e.g. on time or on cognitive ability. However it is a matter for debate as to how far to treat recourse to heuristics as an exercise in rationality (Camerer and Loewenstein 2004, p. 11).

More fundamentally, realist efforts at incorporating behavioural 'biases' in the rationality framework pose problems of internal logical consistency. Indeed if, rather than incomplete information, uncertainty is the epistemological implication of an open-system reality then accepting such an ontology implies that the epistemological basis for treating standard models as complete arguments collapses.

For example the practice of addressing uncertainty by recourse to heuristics (as discussed by Camerer and Loewenstein 2004, pp. 9-12) poses a particular problem of infinite regress if uncertainty is understood as being fundamental, i.e. uncalculable risk (Earl 2022a). If uncertainty means calculable risk then it is already addressed by standard rationality models. If it means incomplete information due to taking cognitive short-cuts then by implication certainty applies to the more time-consuming deliberative process. But that process requires resources (such as time), posing a problem of infinite regress when attempting to combine optimising resources for decision-making with respect to a resulting optimal resource allocation. The expected outcome of careful deliberation is therefore decision paralysis. Rather, as Gigerenzer and Brighton (2009) argue, it is heuristics which *facilitate* decision-making.

5. Looking back to Smith in order to look forward

Behavioural economics has pursued a Lakatosian agenda of retaining the hard core of mainstream economics while developing its protective belt in the face of falsifying evidence (Dow 2013). Whether this is a progressive or regressive development depends on how far changes to mainstream theory have been *ad hoc*. How far do the new behavioural theories accord with the hard core of self-interested, calculative, individual rationality? Are bounded rationality and the use of heuristics logically compatible with the hard core of mainstream economics?

As behavioural economics has developed it has broached topics already addressed by Smith, often with a view to promoting logical integrity within the mainstream theoretical system. Observed departures from strict calculative rationality have been marginalised conceptually relative to the standard model as being evidence of 'biases' with respect to the rationality benchmark. But the significance of these biases has required more attention to what actually drives behaviour. It has been the detailed discussion of recognisable real circumstances, e.g. in Thaler's work, which has been particularly persuasive in drawing attention to behavioural economics. The evolution of behavioural economics in its quest for realism thus followed a path from an idealist abstract framework to attempts to identify actual behaviour in relation to that framework, albeit initially mainly within the isolated environment of experiments, and then to provide explanations drawing on psychology. In contrast Smith started with experience (through introspection and a detailed study of history) in order to identify patterns as a basis for theorising. This was an exercise in abductive logic along the lines of Newtonian experimental philosophy which involved analytical history rather than laboratory experiments (Montes 2008).

Smith's foundational theory of human nature, including his theory of mind (Loasby 2003) provided a complex understanding of motivations and capabilities which he then applied to the commercial setting without any idealist abstract benchmark. While mainstream

economists have been developing ‘new’ behavioural economics, key insights of ‘old’ behavioural economics have been developed by others in ways which offer the potential for constructive dialogue between the two approaches to understanding behaviour, as set out by Earl (2022b).

A key figure in the ‘old’ behavioural economics was Herbert Simon, for whom decision-making was conditioned by bounded rationality. This boundedness followed not only from cognitive limitations but also from the open nature of social systems, which precludes the possibility of certain knowledge (Simon 1955, 1986). Decision-making is thus faced with fundamental uncertainty which cannot be captured by quantifiable risk. Like Smith, Simon enquired into mental processes. As a result he had developed a theory of decision-making based on heuristics rather than calculative rationality long before new behavioural economists.

Heuristics fit into Smith’s epistemology as contributing to the formation of knowledge if we think of them as mechanisms to deal with the uncertainty associated with an open system. In the ‘History of Astronomy’ Smith (1795) illustrates with respect to astronomy how conventional knowledge, aesthetics and power relations condition understanding such that theories can persist for a long time without supporting evidence (as with Descartes’s theory of fluxion). Earl (2017, 2023) illustrates Smith’s argument with respect to modern decision-making with respect to climate change, arguing that the complexities of the social process of acquiring and dealing with knowledge are too great to be captured as simple biases like sunk-cost bias and loss aversion.

A particular source of complexity in Smith’s system is the central role of moral sentiments in human motivation, belying the ‘selfish individualist’ interpretation of self interest. Methodological framework determines how moral sentiments can be incorporated in theory. The deductivist framework of the mainstream approach requires the specification of clear goals with respect to which individuals optimise, where the goals are homogenised in terms of the common metric of utility. This approach has supported efforts in behavioural economics to depict human beings as unitary, such that Seftin and Thaler (1981), for example, can combine the ‘doer’ and the ‘planner’ in one account of rationality.

In particular, while moral principles are discussed in the behavioural economics literature (e.g. by Ashraf, Camerer and Loewenstein 2005) they tend to be treated as separable from self-interest, e.g. as altruism, while for Smith they were integral to behaviour. In highlighting the importance of moral sentiments Smith made clear the complexity of human motivations. There is therefore considerable scope for applying a non-unitary framework of behavioural goals, such as Maslow’s (1971) hierarchy approach. The relative importance of goals at different levels of the hierarchy depends on context, with the need to meet physiological goals taking highest priority at subsistence levels of existence. Higher goals, such as ‘self-actualisation’ can be addressed more as economic conditions improve and economic structures change. This was a major focus for Smith when he considered the social and behavioural consequences of commercialisation.

The issue of multiple goals has been taken up explicitly by Etzioni (1988) who sets out an ‘I&We’ framework to capture the idea of a combination of self-interest and social sympathy, where the individual is understood (as for Smith) as a member of society. He emphasises the collective nature of knowledge-gathering and choice-making and the scope for internalising social moral values. Similarly Lutz and Lux (1988) put forward a ‘humanistic economics’ drawing on Maslow’s hierarchies, substituting the goal of ‘human well-being’ for the goal of ‘economic well-being’. They advocate drawing, not only on other social sciences such as psychology, but also on the humanities, in order to present a more full picture of humanity as

the basis for policy-making (see further Zouboulakis 2023). Rather than being restricted to the economic rationality of mainstream economics, individuals are seen as capable of transcendence, promoting an understanding of the need to address longer-term societal issues such as climate change.

6. Conclusion

The renewed attention to Smith's *Theory of Moral Sentiments* is very welcome. We have seen that behavioural economics has developed some of Smith's insights into the operating systems used in decision-making, but it theorises about them in a much less complex way. It would seem therefore that there should be scope for a deeper dive into Smith with a view to building up a richer theory of human behaviour.

Behavioural economics has diverged from the standard mainstream approach in a variety of ways. First the motive to develop theory was to address observed behaviours rather than to address internal theoretical puzzles. Second significant recourse was made to psychology theory. This important willingness to draw from other disciplines has opened up possibilities for further interdisciplinary engagement. Third the conventional assumption of global rationality was questioned and modifications, such as other-regarding behaviour, considered. As a result the standard rationality model came to be seen by some as a special case.

Nevertheless we have seen that methodological constraints carried over from the standard approach are holding back the constructive development of behavioural economics. These constraints arise from treating the mainstream rationality approach, with its requirement for deductivist mathematical formalisation, as the benchmark. The core principle of that approach is internal consistency in terms of classical logic. This consistency can only be satisfied by focusing on the atomistic individual as the appropriate decision-making unit, with well-specified commensurate goals. Evidence of departures from rational, fully-informed behaviour can then only be explained by lack of information, cognitive limitations or emotions, all of which lead to what are regarded as evidence of 'bias'. Rather they should be regarded as the starting-point for developing further a theory of human behaviour.

The obvious solution lies in abandoning the straightjacket of mainstream methodology, allowing much more latitude for developing the potentially rich set of ideas and analyses evident in the behavioural economics literature (Earl 2022b). These ideas in turn would benefit from taking much further the study of Smith's *Theory of Moral Sentiments* and his related work on the philosophy of science (Smith 1795). In summary then the case has been made here for pursuing Smith's approach to understanding human intelligence in its broadest sense as governing behaviour.

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References

- Ashraf, N, C F Camerer and G Loewenstein (2005) 'Adam Smith, behavioural economist', *Journal of Economic Perspectives* 19 (3): 131–45.
- Berg, J, J Dickhaut and K McCabe (1995) 'Trust, Reciprocity, and Social History', *Journal of Games and Economic Behavior* 10: 122–42.
- Camerer, C F and G Loewenstein (2004) 'Behavioral Economics: Past, Present, Future', in *Advances in Behavioral Economics*. C F Camerer, G Loewenstein and M Rabin (eds), New York: Russell Sage, pp. 3–51.
- Camerer, C F, G Loewenstein and M Rabin (2004) *Advances in behavioral economics*. Princeton: Princeton University Press.
- Damasio, A (1994) *Descartes's Error: emotion, reason, and the human brain*. New York: Putnam.
- Dow, S C (2011) 'Cognition, Sentiment and Financial Instability: Psychology in a Minsky Framework', *Cambridge Journal of Economics* 35 (2): 233–50.
- Dow, S (2013) 'Formalism, Rationality and Evidence: the case of behavioural economics', *Erasmus Journal for Philosophy and Economics* 6 (3): 26–43.
- Drakopoulos, S A (2022a) 'The relation of neoclassical economics to other disciplines: the case of physics and psychology', in I Negru and P Hawkins (eds), *Economic Methodology, History and Pluralism*. London: Routledge, pp. 12–30.
- Drakopoulos, S A (2022b) 'The Conceptual Resilience of the Atomistic Individual in Mainstream Economic Rationality', *Review of Political Economy*, DOI: 10.1080/09538259.2022.2144721.
- Earl, P E (2017) 'Lifestyle changes and the lifestyle selection process', *Journal of Bioeconomics*, 19: 97–114.
- Earl, P E (2022a) 'Infinite regress problems and the methodologies of behavioural economics', in I Negru and P Hawkins (eds), *Economic Methodology, History and Pluralism*. London: Routledge, pp. 94–107.
- Earl, P E (2022b). *Principles of Behavioral Economics: bringing together old, new and evolutionary approaches*. Cambridge: Cambridge University Press.
- Earl, P E (2023) 'Rules all the way down: Consumer behaviour from the standpoint of the "ONE behavioural" research programme', *Journal of Consumer Behavior*, 22: 531–46.
- Earl, P E and T-C Peng (2012) 'Brands of economics and the Trojan horse of Pluralism', *Review of Political Economy*, 24 (3): 451–67.
- Etzioni, A (1988) *The Moral Dimension: toward a new economics*. New York: Free Press.
- Gigerenzer, G (2000) *Adaptive Thinking: Rationality in the Real World*. Oxford: Oxford University Press.
- Gigerenzer, G (2007) *Gut Feelings: the Intelligence of the Unconscious*. New York: Viking.
- Gigerenzer, G and H Brighton (2009) Homo Heuristicus. Why biased minds make better inferences. *Topics in Cognitive Sciences* 1 (1): 107–43.
- Hughes, P T (2010) Trust: Economic Notions and its role in Money and Banking. University of Stirling PhD thesis.
- Hume, D ([1739–40] 1978). *A Treatise of Human Nature*, 2nd ed., edited by L A Selby-Bigge and P H Nidditch. Oxford: Clarendon.
- Kahneman, D (2003) 'Maps of bounded rationality: psychology for behavioral economics', *American Economic Review* 93 (5): 1449–75.
- Kahneman, D (2011) *Thinking, Fast and Slow*. London and New York: Macmillan.
- Kahneman, D and A Tversky (1979) 'Prospect theory: An analysis of decision under risk', *Econometrica* 47 (2): 263–291.
- Kim, K (2017) 'Philosophy and science in Adam Smith's "History of Astronomy": A metaphysico-scientific view', *History of the Human Sciences*, 30 (3): 107–130.

- Kreps, D M (1990) 'Corporate Culture and Economic Theory', in J E Alt and K A Shepsle (eds), *Perspectives on positive political economy*. Cambridge: Cambridge University Press, pp. 90-143.
- Loasby, B J (2003) 'Closed Models and Open Systems', *Journal of Economic Methodology*, 10 (3): 285-306.
- Lutz, M and K Lux (1988) *The Challenge of Humanistic Economics*, Menlo Park, Calif.: Benjamin-Cummings.
- Maslow, A H (1971) *The Farther Reaches of Human Nature*. New York: Viking.
- Montes, L (2004) *Adam Smith in Context*. Cambridge: Cambridge University Press.
- Montes, L (2008) 'Newton's real influence on Adam Smith and its context', *Cambridge Journal of Economics* 32 (4): 555-76.
- Sent, E-M (2004) 'Behavioural economics: how psychology made its (limited) way back into Economics', *History of Political Economy*, 36 (4): 735-60.
- Shefrin, H M and R H Thaler (1981) 'An Economic Theory of Self-Control', *Journal of Political Economy* 89 (2): 392-406.
- Simon, H (1955) 'A behavioral model of rational choice', *Quarterly Journal of Economics* 69 (1): 99-118.
- Simon, H (1986) 'Rationality and psychology in economics', *Journal of Business* 59 (4): S209-24.
- Skinner, A S (1996) *A System of Social Science: Papers Relating to Adam Smith*. Oxford: Oxford University Press.
- Smith, A ([1759] 1976). *The Theory of Moral Sentiments*, edited by D D Raphael and A L Macfie. Oxford: Clarendon.
- Smith, A ([1762-63] 1983) *Lectures on Rhetoric and Belles Lettres*, edited by J C Bryce, Oxford: Oxford University Press.
- Smith, A ([1776] 1976). *An Inquiry into the Nature and Causes of the Wealth of Nations*, edited by R H Campbell and A S Skinner. Oxford: Oxford University Press.
- Smith, A ([1795] 1980). 'The history of astronomy', in W L D Wightman (ed.), *Essays on Philosophical Subjects*. Oxford: Oxford University Press.
- Thaler, R H and C R Sunstein (2008) *Nudge: Improving Decisions About Health, Wealth and Happiness*. New Haven, Connecticut: Yale University Press.
- Winch, D (1997) 'Adam Smith's Problems and Ours', *Scottish Journal of Political Economy* 44 (4): 384-402.
- Zouboulakis, M S (2010) 'Trustworthiness as a Moral Determinant of Economic Activity: Lessons from the Classics', *Forum for Social Economics* 39 (3): 209-21.
- Zouboulakis, M S (2014) *The varieties of economic rationality. From Adam Smith to contemporary behavioral and evolutionary Economics*. London: Routledge.
- Zouboulakis, M S (2023) 'Economic Rationality in the era of Interdisciplinarity', paper presented to the 'Economics & the Social Sciences in the Age of AI' conference, Volos, Greece, 21-23 September.