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Adam Smith, natural movement and physics

Spencer J. Pack and Eric Schliesser*

This paper argues that often when Adam Smith used the word 'natural', it was not in contradistinction to supernatural, social or artificial; but to 'violent.' Furthermore, Smith models, in part, his distinction between natural and violent on Aristotle's use. Smith explains the distinction in his study of the history of physics and astronomy. In those fields there is, at least going back to Aristotle, an idealized view of 'natural' motion or movement versus interfered or violent motion or movement, which has changed over time, particularly from ancient to classical physics and astronomy. Smith used this sense of 'natural' particularly when dealing with movement in *The Wealth of Nations*: especially the movement of goods, capital and labour. In Smith's system, the natural non-violent movement of humans, or actions generated by humans, will lead to so-called natural prices, natural rates of profit and natural wage rates around which market prices, profit and wage rates will 'gravitate'.

Key words: Adam Smith, Aristotle, System of natural liberty, Egalitarianism
JEL classifications: B12, B31, B41

1. Introduction

This paper argues that often when Adam Smith used the word 'natural', it was not in contradistinction to supernatural, social or artificial; but to 'violent'. Furthermore, Smith models, in part, his distinction between natural and violent on Aristotle's use. Smith explains the distinction in his study of the history of physics and astronomy. In those fields there is, at least going back to Aristotle, an idealized view of 'natural' motion or movement versus interfered or violent motion or movement, which has changed over time, particularly from ancient to classical physics and astronomy. Smith used this sense of 'natural' particularly when dealing with movement in *The Wealth of Nations* (hereafter WN): especially the movement of goods, capital and labour. In Smith's system in WN, the natural non-violent movement of humans, or actions generated by humans, will lead to so-called natural prices, natural rates of profit and natural wage rates around which market prices, profit and wage rates will 'gravitate'.[1]

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[1] This is not to deny that these concepts also have further, particular theoretical roles in Smith's economic theory, too. Also, we are not dealing in this paper with the accuracy or appropriateness of Smith's theory; we are merely explaining it.

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However, in WN, the social and economic movement, and hence the gravity that Smith writes of, is inspired by the gravity of ancient, Aristotelian physics, not classical Newtonian physics. For, according to Smith, each human actor has its own motivation and source of movement. The gravity that Smith invokes in his WN is the ancient Aristotelian concept of gravity where gravity itself is not really an independent, external force; rather, the elements have their own 'natures' and these, in turn, cause natural movements that regularly form these natures (or essences). In ancient Aristotelian physics, the distinction then becomes between natural movement and violent movement caused by an external force. This is how Aristotle frequently used the words 'natural' and 'natural movement' in his 'Physics' and his 'On the Heavens'. Smith picked up on this Aristotelian distinction, noted it in his 'History of Astronomy' essay, and used it in his WN. That is, we claim that in WN, 'gravity' is used as an analogy. Hence, in his proposed 'simple and obvious' system of natural liberty, the word 'natural', by this usage of the word 'natural', means a system based upon the not violent, not externally forced movement of the social and economic actors.

Section 2 of this paper elaborates upon Smith's understanding of the ancient concept of gravity. Smith argued that the Aristotelians drew a distinction between natural movement and violent movement which arose from an external force: this was one of the senses in which Aristotle used the word 'natural'. It was this ancient concept of natural movement and gravity, as opposed to Newton's concept of gravity, which underlines the gravity analogy used in WN. Section 3 explains Smith's account of human propensities, instincts and faculties. We will argue that not unlike Aristotle, Smith claims that human nature has hidden features that express themselves in a regular fashion and, over time, produce teleological effects. To be clear, we ignore here the controversy over Smith's views on theodicy and general providence. By 'teleological effects' we mean to discuss consequences that produce 'natural' outcomes in the sense we clarify in Section 4.

Part 4 argues that Smith sometimes used this sense of the word 'natural', particularly when discussing human movement. Moreover, although there are a multiplicity of virtues and possible motives for action in *The Theory of Moral Sentiments* (TMS), according to Smith, in practice most people most of the time strive to accumulate wealth in order to achieve status. To do this, they 'naturally' move their goods, capital and labour to those industries and locales which they perceive to be most financially remunerative. Hence, on our reading of Smith, the opposite to this 'natural' movement would be 'violent' movement caused by external force; for Smith, this sort of unnatural movement is nearly always caused by feudal lords, Chieftains and, more recently, by government rules and regulations.[2]

Section 5 argues that using reasoning analogous to the one he articulates in explaining the ancient Aristotelian concept of gravity, Smith claims that the natural movement of people pursuing their 'interests' will lead to (locally) stable natural prices, profit and wage rates. Furthermore, we can understand Smith's opposition to both the mercantilist and physiocratic systems of political economy, in part, because they systematically imposed violent external forces to try to channel resources into favoured sectors of the economy, against the 'natural' movement of people, goods and capital. In his view, Smith's own system would favour no one particular sector, thus minimizing external force, letting people and their property move 'naturally'. Smith called this 'the simple

[2] For the egalitarian even moral significance of this point, see Herzog (2014).

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and obvious system of natural liberty'. The system is natural in the sense that as much as possible, it allows people to pursue their own goals, motives and movement, thus limiting supposedly violent external forces on their behaviour. Section 6 offers a brief conclusion.

2. Aristotelian physics, gravity and natural versus violent movement (or movement caused by an external force)

It is relatively well known that Smith was promiscuous in his use of the word 'natural' (or 'nature'); that he used it in various senses and with frequent ambiguity; that the opposite for Smith to the word 'natural' could possibly be unnatural, supernatural, social or artificial; and it is a familiar fact that he used the word 'natural' to mean something approaching 'normal' or ordinary, in contradistinction to the ancient Aristotelian use of the term 'natural' to mean the best, or excellence (see, e.g. Puro, 1992; Aspromourgos, 2009, pp. 43–53; Pack, 1995, 2010; Cropsey, 1957, p. 99). What has not been so well noted is that for Smith, the opposite to 'natural' could sometimes be 'violent', or 'external force', the latter two being used more or less synonymously. Smith counterpoised 'violent' or 'external force' to 'natural', particularly when he was discussing movement: the movement of goods (trade), capital and labour (or really the labourers). The natural, non-violent or non-forced movement of goods, capital and labour would eventually result in what Smith called the natural price (Schliesser, 2005A) about which market prices 'gravitated'. Moreover, Smith seems to have taken this use of 'natural', as opposed to 'violent movement' or 'movement caused by an external force', from his understanding of the history of physics and astronomy in general, and particularly of ancient physics and astronomy.[3]

In his so-called 'The History of Ancient Physics' essay,[4] Smith wrote that with the ancient physics, 'gravity and levity were regarded as the two principles of motion which directed all sublunary things to their proper place' (1980, p. 5). This led to natural motion: 'The natural motion of two of these elements, Earth and Water, was downwards, upon account of gravity. This tendency, however, was stronger in the one than in the other upon account of the superior gravity of Earth. The *natural* motion of the two other elements, Fire and Air, was upwards, upon account of their levity; and this tendency too, was stronger in the one than in the other, upon account of the superior levity of Fire' (ibid., emphasis added). Note that things move up or down, more due to their own internal gravity or levity, rather than to the external force of gravity. The tendency to movement is stronger in the one, rather than on the one. In addition, the internal tendency is (teleologically) directed toward a natural (resting) place. Therefore, in Smith's interpretation, 'each of those Four Elements had, in the system of the universe, a place which was peculiarly allotted to it, and to which it *naturally*

[3] Hence Foley titling his study of Smith *The Social Physics of Adam Smith* (1976) was quite insightful.

[4] The full title of this work, 'The Principles Which Lead and Direct Philosophical Enquiries Illustrated by the History of the Ancient Physics', is germane; also for the so-called 'History of Astronomy' essay, which will shortly be discussed. Smith apparently wrote and preserved these historical essays because he was primarily interested in the principles which lead and direct philosophical and scientific enquiries in general. His approach and results can, as many commentators have noted, therefore now be seen as rather proto-'Kuhnian', very likely due to their similar methodology. See Kuhn (1957, 1970). For recent discussions of Smith's philosophy of science and epistemology, see Montes (2003, 2008); Schliesser (2005B, 2010); Hanley (2010); Kim (2012).

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tended' (1980, p. 109, emphasis added). Hence, elements move to a place and then tend to stay there; that is largely a result of their own, internal nature (or essence). Thus, 'Each of the Four elements having a particular region allotted to it, had a place of rest, to which it *naturally* tended, by its motion, either up or down, in a straight line, and where, when it had arrived, it *naturally* ceased to move' (1980, p. 111, emphasis added). This is natural, non-violent, non-forced motion as posited in the ancient system. In that theoretical system, elements naturally, non-violently, move somewhere, and then they stop: 'each of them tended to a state of eternal repose and inaction' (1980, p. 111).

As Andrews has recently pointed out (2014), this ancient conception of gravity is the one Smith used in his gravity analogy illustrating the movement of market prices to Smith's natural prices in *The Wealth of Nations*.[5] According to Smith, 'The natural price, therefore, is, as it were, the central price, to which the prices of all commodities are continually gravitating. Different accidents may sometimes keep them suspended a good deal above it, and sometimes force them down even somewhat below it. But whatever may be the obstacles which hinder them from settling in this *center of repose and continuance*, they are constantly tending towards it' (I.vii.15, emphasis added). According to Smith, with this movement, the market price tends to go to the natural price and then, in the absence of external disturbance, stays there. This is the gravity as described by Smith of the ancient physics rather than the Newtonian conception of gravity, where two bodies mutually attract each other (see, e.g. Schliesser 2005A; Andrews 2014).

Smith does not have a self-standing treatment of analogy. But in his essay on 'The Origin of Languages' (first published as an appendix to the third edition of TMS), Smith insists that humans have a natural 'love of analogy' (LRBL, pp. 211, 215). He recognizes that reliance on analogy can be excessive (see the treatment of Kepler at EPS 4.51, p. 85), but he treats analogy as an ordinary element in natural philosophy (e.g. EPS 2.12, p. 47; see Schliesser, 2005B, for discussion). Analogy plays an important role in Hume's epistemology (see, e.g. *Enquiry Concerning Human Understanding* [EHU], 4.12). He often suggests there are 'rules of analogy' (e.g. *Treatise* 2.1.12.6; EHU 10.9, and especially 11.27). Hume claims that 'All our reasonings concerning matter of fact are founded on a species of Analogy, which leads us to expect from any cause the same events, which we have observed to result from similar causes. Where the causes are entirely similar, the analogy is perfect, and the inference, drawn from it, is regarded as certain and conclusive: Nor does any man ever entertain a doubt, where he sees a piece of iron, that it will have weight and cohesion of parts; as in all other instances, which have ever fallen under his observation. But where the objects have not so exact a similarity, the analogy is less perfect, and the inference is less conclusive' (EHU 9.1; this differs from the account *Treatise* where Hume treats analogy as a case 'where we transfer our experience in past instances to objects which are resembling, but are not exactly the same with those concerning which we have had experience' (*Treatise*, 1.3.13.8). Smith's use of analogy in WN seems to be close to the version described in Hume's first *Enquiry*.

In the 'History of Astronomy' essay, Smith continues along these lines, writing that in accounts of nature of the early ages of antiquity, 'Fire burns, and water refreshes;

[5] Our paper is much indebted to Andrews (2014), but we treat Smith's 'gravitating' not as a metaphor (as Andrews does), but as an analogy. (We thank an anonymous referee for suggesting this to us.) Andrews (2014) also makes many useful, critical comments on the persistent identification of Smith with Stoic thought. On this line of thought, see also Brubaker (2006); Hanley (2006, 2009); Schliesser (2008A); Pack (2010).

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heavy bodies descend, and lighter substances fly upwards, by the necessity of their own nature' (III.2, emphasis added).[6] Hence, it is their nature, rather than an outside external force, which causes this type of movement. Later in that essay Smith explicitly noted this crucial distinction of types of motion made by Aristotelian philosophy: 'That philosophy, by a very natural,[7] though, perhaps, groundless distinction, divided all motion into Natural and Violent. Natural motion was that which flowed from an innate tendency in the body, as when a stone fell downwards: *Violent motion, that which arose from external force*, and which was, in some measure, contrary to the natural tendency of the body, as when a stone was thrown upwards, or horizontally' (IV.38, uppercase in original, emphasis added). So, the distinction here is between natural as opposed to violent motion caused by an external force. Hence, the opposite of natural or natural motion for Smith may be violence or violent motion, which is motion caused by an external force. Moreover, we will show that although Smith himself wrote that this distinction may be 'perhaps, groundless', nonetheless he would make use of that very distinction in *The Wealth of Nations*.

Smith, in describing the ancient Aristotelian system, wrote that 'No violent motion could be lasting; for, being constantly weakened by the natural tendency of the body, it would soon be destroyed. The natural motion of the Earth, as was evident in all its parts, was downwards, in a strait line to the center; as that of fire and air was upwards, in a strait line from the center' (ibid.). Smith goes on to explain how in the modern Copernican and ultimately Newtonian system, there would be a fundamental paradigmatic change in the understanding of what is natural motion (see Schliesser, 2005B).

Before we move on to Smith's political economy, it is worth mentioning that the idea of a hidden nature that produces regular effects (that is, these follow from the essence, or nature) without the simultaneous positing particular (or local) final causes survived the demise of Aristotelian physics into the seventeenth century.[8] Philosophers as different as, e.g. Locke and Spinoza rely on such an explanatory scheme. As others have shown, it's only in Smith's lifetime, best known to later scholars in the ways that Hume and Reid responded and reinterpreted Newton's science, that a different kind of explanatory scheme displaced the one that Smith is describing.[9]

3. Dispositions

This section explains what human propensities or dispositions are according to Smith. We do so by offering a close reading of a key passage at the start of WN. Just after

[6] The last part of that sentence is justly celebrated as the first time Smith ever wrote of an invisible hand: 'nor was the invisible hand of Jupiter ever apprehended to be employed in those matters'. Polytheistic religions did not use their gods to explain or cause what was natural or natural movement. Monotheistic religions do. Hence, compare this use of the invisible hand with Smith's employment of the invisible hand metaphor in both *The Theory of Moral Sentiments* and *The Wealth of Nations*, where in each case an invisible hand is somehow involved with natural movements. Smith, of course, knew that he was writing for monotheists and wrote accordingly, and persuasively.

[7] Again, note the promiscuous use of this key, indeed arguably favourite, word for Smith. Smith clearly used the word 'natural' ambiguously, in different senses or meanings of the word.

[8] Lange (2009, p. 7) has traced this back to Richard Hooker (1593) *Of the Lawes of Ecclesiastical Politie*, Book I.iii.4. Of course, this is compatible with the survival of various commitments to (general, providential) final causes in the period (see Osler, 1996).

[9] See Oakley (1961); Heimann and McGuire (1971); Ducheyne (2006); Schliesser (2013).

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Smith introduces one of his important explanatory concepts, the division of labour, he adds this remark:

> THIS division of labour, from which so many advantages are derived, is not originally the effect of any human wisdom, which foresees and intends that general opulence to which it gives occasion. It is the necessary, though very slow and gradual consequence of a certain propensity in human nature which has in view no such extensive utility; the propensity to truck, barter, and exchange one thing for another. Whether this propensity be one of those original principles in human nature of which no further account can be given; or whether, as seems more probable, it be the necessary consequence of the faculties of reason and speech, it belongs not to our present subject to inquire. (WN 1.2.1; Smith, 1976A, p. 25)

For present purposes, there are five important claims in this passage (and the sentences immediately following it).

First, Smith views human nature as a collection of propensities. From the point of view of WN, original propensities are epistemic bedrock. A 'propensity' is a stable inclination. Propensities do not always manifest themselves; they may require something akin to triggering conditions. And even when such triggering conditions are present, the inclination need not be always expressed in any individual over time or all individuals at a given time. This means that whenever Smith speaks of 'human nature' he is not describing an exception-less type. We use the phrase 'normological'—as opposed to 'nomological'—to capture the kind of regularity Smith discerns in human nature; these normological generalizations are robust generalizations that allow exceptions. So, Smith understands human nature as a collection of fairly stable tendencies.

Second, these propensities can either be bedrock parts of human nature or the (necessary) consequence of human nature as we find it today. We call the former 'original propensities' and the latter 'derived propensities'. The terminology of 'original' and 'derived' propensities tracks Smith's treatment elsewhere:

> [nature] has constantly . . . not only endowed mankind with an appetite for the end proposes, but likewise with an appetite for the means by which alone this end can be brought about, for their own sakes, and independent of their tendency to produce it. Thus self-preservation, and the propagation of the species, are the great ends which nature seems to have proposed in the formation of all animals. Mankind are endowed with a desire of those ends, and an aversion to the contrary. . . . But though we are . . . endowed with a very strong desire of those ends, it has not been entrusted to the slow and uncertain determinations of our reason, to find out the proper means of bringing them about. Nature has directed us to the greater part of these by original and immediate instincts. Hunger, thirst, the passion which unites the two sexes, the love of pleasure, and the dread of pain, prompt us to apply those means for their own sakes, and without any consideration of their tendency to those beneficent ends which the great Director of nature intended to produce by them.' (TMS 2.1.5.10; Smith, 1976B, pp. 77–78)

We leave aside here the debate over to what degree Smith's use of 'the great Director of nature' was sincere or not (cf. Kennedy, 2013; Schliesser, 2014). For present purposes, all that matters is that 'nature' is the source of mankind's endowments (that is, original dispositions, instincts and faculties). These endowments are said to serve two natural ends: 'the self-preservation, and the propagation of the species'. Note how for Smith the species (mankind) has hidden features (instincts or passions) that can regularly produce the two natural ends. While Smith avoids here Scholastic terminology of essences and the four (that is, efficient, final, formal and material) causes, the way he conveys his position is compatible with it. (Again, we're side-stepping the debate over Smith's commitment to final causes, cf. Kleer, 1995; Pack and Schliesser, 2006.)

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On Smith's view, there are at least five 'original and immediate' instincts—'Hunger, thirst, the passion which unites the two sexes, the love of pleasure, and the dread of pain'—that guide our behaviour. Facilitated by at least two faculties (reason and speech), these original and immediate instincts can combine in various ways to produce stable, original propensities (Wight, 2009). In the conceptual apparatus of Smith's time, a 'faculty' is a stable power or disposition of the human mind (e.g. TMS 3.5.6, 165; Locke's *Essay*, bk. 2, ch. 11; Smith also uses 'faculty' to refer to a branch of learning or a university department, as they are still called in Europe, but those senses of 'faculty' do not concern us now).

However, Smith's use of 'faculty' is broader and vaguer than a disposition of the mind. For example, in 'Of the External Senses,' Smith writes, 'The young of several sorts of quadrupeds seem, like those of the greater part of birds which make their nests upon the ground, to enjoy as soon as they come into the world the faculty of seeing as completely as they ever do afterwards' (71; Smith, 1980, p. 162). So, for Smith, humans and animals alike possess faculties. Smith tends to use 'faculties', 'senses' and 'instincts' as rough synonyms. For example, 'Nature, it may be said, never bestows upon any animal any faculty which is not either necessary or useful, and an instinct of this kind would be altogether useless to an animal which must necessarily acquire the knowledge which the instinct is given to supply' ('Of External Senses', p. 75; Smith, 1980, p. 163; in context, Smith is describing the 'instinctive perception' of distance). In addition to reason, speech and the so-called external senses (sight, touch, smell, hearing and taste), Smith also recognizes memory, reflection and imagination as faculties of the human mind. More surprising, perhaps, is that Smith also talks of some of the natural passions especially resentment, as a 'faculty' (Smith, 1978; LJ(B), pp. 344, 547). For example, early in TMS he writes, 'Every faculty in one man is the measure by which he judges of the like faculty in another. I judge of your sight by my sight, of your ear by my ear, of your reason by my reason, of your resentment by my resentment, of your love by my love' (1.1.3.10, Smith, 1976B, p. 19; see Griswold, 1999, for significance of this passage).

Let us return to WN (1.2.1, p. 25); a third point is that Smith thinks it is highly probable that the propensity to barter and truck is a derived propensity. This propensity presupposes the faculty of speech. In fact, Smith adds a complex, sixth instinct, 'The desire of being believed, the desire of persuading, of leading and directing other people, seems to be one of the strongest of all our natural desires', to help explain the origin of the faculty of speech:

> The desire of being believed, the desire of persuading, of leading and directing other people, seem to be one of the strongest of all our natural desires. It is, perhaps, the instinct upon which is founded the faculty of speech, the characteristical faculty of human nature. No other animal possesses this faculty, and we cannot discover in any other animal any desire to lead and direct the judgment and conduct of its fellows. Great ambition, the desire of real superiority, of leading and directing, seems to be altogether peculiar to man, and speech is the great instrument of ambition, of real superiority, of leading and directing the judgments and conduct of other people. (TMS 7.4.25; Smith, 1976B, p. 336)

Smith insists that talking is what distinguishes humans from other animals.[10] In fact, Smith clearly thinks some animals possessed the faculty of reason (this echoes Hume's

[10] We ignore here to what degree this, too, can be given an Aristotelian provenance (after all, *logos*, which can be translated as 'reason', but also as 'speech' is the essence of the human soul) (see *De Anima*).

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first Enquiry, essay 9, and the sceptical tradition more generally). For Smith has been recorded as saying, 'dogs . . . by having the same object in their view sometimes unite their labours, but never from contract. The same is seen still more strongly in the manner in which the monkeys rob an orchard at the Cape of Good Hope.—But after they have very ingeniously conveyd away the apples, as they have no contract they fight (even unto death) and leave after many dead upon the spot' (LJ(A), 4.57, Wednesday, 30 March 1763; Smith, 1978, p. 352). So, animals have intelligence, but lack speech to negotiate the spoils of their joint endeavours.

On Smith's picture, we talk to others originally not so much to share truths as such, but rather in order to guide their judgments so that they will be favourable of us. As he writes in the continuation of the passage quoted above:

> [Speech] is common to all men, and to be found in no other race of animals, which seem to know neither this nor any other species of contracts. Two greyhounds, in running down the same hare, have sometimes the appearance of acting in some sort of concert. Each turns her towards his companion, or endeavours to intercept her when his companion turns her towards himself. This, however, is not the effect of any contract, but of the accidental concurrence of their passions in the same object at that particular time. Nobody ever saw a dog make a fair and deliberate exchange of one bone for another with another dog. Nobody ever saw one animal by its gestures and natural cries signify to another, this is mine, that yours; I am willing to give this for that. When an animal wants to obtain something either of a man or of another animal, it has no other means of persuasion but to gain the favour of those whose service it requires. A puppy fawns upon its dam, and a spaniel endeavours by a thousand attractions to engage the attention of its master who is at dinner, when it wants to be fed by him. Man sometimes uses the same arts with his brethren, and when he has no other means of engaging them to act according to his inclinations, endeavours by every servile and fawning attention to obtain their good will. He has not time, however, to do this upon every occasion. (WN 1.2.1; Smith, 1976A, p. 25)

Smith distinguishes between two kinds of persuasion. A fawning kind, which we share with animals, and a guiding kind, which humans alone engage in. The guiding kind of persuasion is clearly an important component of Smith's treatment of commercial and moral exchange. Even so, in the first instance talk is a political instinct in the service of social hierarchy. In doing so, Smith returns to Aristotle's conception of man as a political animal (Montes, 2004). Smith is aware of reports of other talking animals (e.g. Locke's parrot), and he calls attention to the existence of other social animals. But he thinks only humans talk to persuade others from 'great ambition' and 'the desire of real superiority'. This suggests that for Smith political leadership, in part, relies on the good opinion and beliefs of others. (At WN 4.7.c.77; 1976A, p. 625, Smith intimates that public opinion on both sides of the Atlantic would be powerful enough to thwart his suggestions for a Union between Great Britain and her colonies that he thought could bring the 'present disturbances' [WN 4.7.c.64; 1976A, p. 615] to a peaceful resolution.) In fact, according to Smith, good opinion of others is crucial for most of us ('in the inferior and middling stations of life'); we 'can never be great enough to be above the law', and, therefore, are almost always dependent 'upon the favour and good opinion of their neighbours and equals' (TMS 1.3.3.5; 1976B, p. 63). Such 'favour' is not to be understood as a form of nepotism, but rather a consequence that is part and parcel of Smith's defence of bourgeois virtues: 'What is the reward most proper for encouraging industry, prudence, and circumspection? Success in every sort of business' (TMS 3.5.8; 1976B, p. 166; for more on Smith's defence of bourgeois virtues and Smith's views on justice in the market, see Herzog, 2013, ch. 6).

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Fourth, in the last sentence ('He has not time . . . to do this upon every occasion') quoted from WN (1.2.1, 25), Smith seems to suggest that if time were not scarce (Levy and Peart, 2013), we would engage more extensively in the fawning kind of persuasion. According to Smith, it is primarily when we are vulnerable (because, say, we lack power or property) that we will act in such degrading fashion. Yet, servility is apparently a permanent option in our nature. It is important for Smith's larger projects to decouple the features of commercial exchange from the fawning kind of persuasions, while being aware that commercial life can also produce its own kind of moral corruption (Tegos, 2013). Part of Smith's moral defence of 'commerce and manufactures' is that they 'gradually introduced order and good government, and with them, the liberty and security of individuals, among the inhabitants of the country, who had before lived almost in a continual state of war with their neighbours, and of servile dependency upon their superiors. This, though it has been the least observed, is by far the most important of all their effects. Mr. Hume is the only writer who, so far as I know, has hitherto taken notice of it' (WN 3.4.4; 1976A, p. 412; this is one of the few places Smith explicitly acknowledges his intellectual debts to Hume in print). So, some freedom is presupposed when we can engage in the guiding kind of persuasion even if the same instinct is also a means toward the non-violent subjection of others.

Fifth, social phenomena (e.g. division of labour), which have social utility, can be explained by the unforeseen (and unintended) necessary workings of human propensities over time. Smith thinks that given our original and immediate instincts, the propensity to barter and truck will arise eventually (it is 'the necessary, though very slow and gradual consequence'). Much ink has been spilled over Smith as a theorist of unintended consequences (and invisible hands).

But here we only emphasize three aspects of Smith's explanatory account as presented in WN: (i) it is causal ('necessary consequence'). So, while propensities are themselves normological, the persistent triggering of these and their expression can lead to nomological outcomes such that the outcome could not be otherwise—presumably as necessary that all humans are mortal. (ii) It is a historical explanation. By 'historical' we mean to capture two features: (a) that the stable consequence would not have been in 'view' (or predictable) to observers of human nature at an early time (and so not capable of being intended); (b) that to be a cause does not require temporal contiguity between the cause and the effect. The same cause(s) can do their work over enormous expanses of time.[11] Of course, this does not require magical historical action at a distance (with temporal gaps between micro-causes); at any given time the relevant propensities of human nature remain the same, and this allows particular kinds of effects to accumulate over time. (Smith makes fun of claims surrounding the 'levity and inconstancy of human nature' [WN 1.8.31; 1976A, p. 93.]) (iii) Smith's account does require that after certain consequences become visible to observer-participants they become self-reinforcing. Presumably this self-reinforcement is due to the fact that those that benefit from the cumulative consequences will help prevent backsliding from new social arrangements. (It may also be aided by the fact that those that do not so benefit will be deprived of various resources to prevent further change.) So, in the long run and in the aggregate, normological propensities will produce initially unpredictable, albeit definite and determined, outcomes.

[11] Schabas (2009) has also emphasized this feature of Smith's explanatory enterprise.

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4. Smithian natural human and economic movement

As is well known, in TMS Adam Smith articulated the multiplicity and complexity of virtues (Hanley, 2013), and embraced a non-hierarchical ordering of virtue (Gill, 2014). The various possible causes for action therein come to be drastically simplified and reduced in WN. There, Smith tells the reader that 'the principle which prompts to save, is the desire of bettering our condition, a desire which, though generally calm and dispassionate, comes with us from the womb, and never leaves us till we go into the grave.' This 'desire' to save, then (presumably given socioeconomic arrangements—we doubt the disposition that gives rise to it would or could be actualized in a Smithian hunting and gathering society), is seen by Smith as innate, natural to human beings. It is a constant drive, or source for action and movement. Continuing: 'In the whole interval which separates those two moments, there is scarce perhaps a single instant in which any man is so perfectly and completely satisfied with his situation, as to be without any wish of alteration or improvement of any kind.' Leaving aside to what degree Smith may be exaggerating here, presumably this is just casual sexism, and Smith is referring to women too. Smith continues: 'An augmentation of fortune is the means by which the greater part of men propose and wish to better their condition. It is the means the most vulgar, and the most obvious;[12] and the most likely way of augmenting their fortune, is to save and accumulate some part of what they acquire, either regularly and annually, or upon some extraordinary occasions' (WN II.iii.28; 'vulgar' here means 'common', but that, too, can have negative valence).

So, according to Smith, most people naturally, from the day they are born to their death, want to save income in order to accumulate wealth and become more socially respectable.[13] Thus, 'The uniform, constant, and uninterrupted effort of every man to better his condition, the principle from which publick and national, as well as private opulence is originally derived, is frequently powerful enough to maintain the natural progress of things toward improvement, in spite both of the extravagance of the government, and of the greatest errors of administration. Like the unknown principle of animal life, it frequently restores health and vigour to the constitution, in spite, not only of the disease, but of the absurd prescriptions of the doctor' (WN II.iii.31). Smith, then, is a key, transitional figure. On the one hand, as e.g. McCloskey (2008) has noted, Smith may be viewed as the 'last of the former virtue theorists' (until the revival of interest in such a theory during the twentieth century), with his elaboration of the various virtues and vices in *The Theory of Moral Sentiments*. On the other hand, Smith's claim that most people want to acquire social status by accumulating wealth eventually led to the caricature of 'rational economic man' (Hirschman, 1977, pp. 100–113). For our purposes, though, it means that for Smith most people will naturally want to sell or move their goods to those markets where they can fetch the highest price. Similarly, they will naturally want to invest or move their capital to those industries which will bring the highest return on their investment (adjusted, of course,

[12] A key word: Smith will later call his proposed political system an 'obvious and simple system of natural liberty'; see below.

[13] Note the influence of Rousseau here. Most individuals in Smith's world are dominated by their concern of what other people think of them. On Smith's fascination with Rousseau, especially Rousseau's *Discourse on the Origin of Inequality*, see Smith's 'A Letter to the Authors of the Edinburg Review and Appendix: Passages quoted from Rousseau' (1980, pp. 242–56); also, e.g. Pack (2000); Hanley (2008); Rasmussen (2013); Hont *et al.* (2015).

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for perceived risk). Also, workers or 'labour' will naturally want to move to those locales or into those industries which provide the highest wages. Merchants trying to sell their goods in the most financially rewarding markets; capitalists trying to get the highest return on their investments; workers trying to get the highest wages; this is the natural or innate goal of most people, 'the great mob of mankind', most of the time in commercial societies.[14]

With that in place, we can provide evidence for our major claim. According to Smith, actions restricting or trying to redirect these natural movements are violent or an external force to these human actors. So, e.g. in discussing bounties, Smith writes that 'The effect of bounties, like that of all the other expedients of the mercantile system, can only be *to force* the trade of a county into a channel much less advantageous than that in which it would *naturally* run of its own accord' (IV.v.a.3, emphasis added). Note the counterpoising of 'force' verses to 'naturally run'. Or again: 'Bounties upon the exportation of any home-made commodity are liable, first, to that general objection which may be made to all the different expedients of the mercantile system; the objection of *forcing* some part of the industry of the country into a channel less advantageous than that in which it would run of its own accord' (IV.v.a.24, emphasis added). In discussing various taxes on trade, Smith writes of 'the *natural* balance of industry, the *natural* division and distribution of labour, which is always more or less disturbed by such duties' (IV.iv.14, emphasis added). Now, one might think that the language of 'force' is merely metaphorical or an attempt to use physics-y sounding terms to describe the economy. While the second option already goes some way toward our thesis, we argue that Smith is quite serious about the language of 'force'.

For example, Smith writes of the goal of political economy: 'But the great object of the political economy of every country, is to increase the riches and power of that country'. Then, continuing, 'It ought, therefore, to give no preference nor superior encouragement to the foreign trade of consumption above the home-trade, nor to the carrying trade above either of the other two. It ought neither to *force* nor to *allure* into either of those two channels, a greater share of the capital of the country than what would *naturally* flow into them of its own accord' (WN II.v.31, emphasis added). Here a natural flow or movement of capital is counterpoised to capital being forced or allured. In the next paragraph, Smith claims that 'Each of those different branches of trade, however, is not only advantageous, but necessary and unavoidable, when the course of things, without any constraint or violence, *naturally* introduces it' (II.v.32, emphasis added). Here again, what is natural is what happens without violence; 'natural' is used in the sense of the opposite of violence.

In discussing the colonial trade, Smith writes that 'The monopoly of the colony trade besides, by *forcing* toward it a much greater proportion of the capital of Great Britain than what would *naturally* have gone to it, seems to have broken altogether that *natural* balance which would otherwise have taken place among all the different branches of British industry' (IV.vii.c.43, emphasis added). Here, Smith makes his

[14] As Schumpeter has noted, 'A judiciously diluted Rousseauism is also evident in the equalitarian tendency of his [Smith's] economic sociology. Human beings seemed to him to be much alike by nature all reacting in the same simple ways to very simple stimuli' (1954, p. 186). On the one hand, it is this assumption by Smith, that humans for the most part do react to simple stimuli in pursuing their perceived interests, that enabled him to develop his price theory, and also enables microeconomic theory to exist. On the other hand, philosophically, Smith was also a bit of an elitist. See, e.g. in TMS, where he matter-of-factly comments on how there are 'those few who pretend to live according to any philosophical rule' (VII.ii.4.5).

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analogy to blood and the dangers of a blood clot or stoppage to a major artery.[15] Since too much British commerce has been forced in one direction, then 'A small stop in that great blood-vessel, which has been artificially swelled beyond its *natural* dimensions, and through which an unnatural proportion of the industry and commerce of the country has been *forced* to circulate, is very likely to bring on the most dangerous disorders upon the whole body politick' (ibid., emphasis added). Again, the distinction is between natural and forced. Smith is explicit, then, that the forces approach is not only itself violent, but is also likely to produce more violence (political disorder).

In commenting that people and industry in Europe are moving from the countryside to the towns, Smith writes that 'stock and labour naturally seek the most advantageous employment. They *naturally*, therefore, resort as much as they can to the town and desert the country' because wages and profits are higher there (WN I.x.c.21, emphasis added). Smith argues that there is a tendency towards, or is in fact the equalization of, the advantages of the employment of labour and stock 'where things were left to follow their *natural* course, where there was perfect liberty, and where every man was perfectly free both to chuse what occupation he thought proper, and to change it as often as he thought proper. Every man's interest would prompt him to seek the advantageous, and to shun the disadvantageous employment' (I.x.a.1, emphasis added).[16] However, there are inequalities introduced by the policy of Europe, and this 'policy of Europe, by not leaving things at perfect liberty, occasions other inequalities of much greater importance' (I.x.c.1). That is, people are not at perfect liberty to move, change occupations, etc., due to e.g. monopolies, overly long apprentices, and other obstructions to movement. So, for example, 'The very unequal price of labour which we frequently find in England in places at no great distance from one another, is probably owing to the *obstruction* which the law of settlements gives to a poor man who would carry his industry from one parish to another without a certificate' (WN I.x.c.58, emphasis added). Smith then explains why he thinks this obstruction to the mobility of labour should be removed.

5. Natural movement and Smith's system of natural liberty

The natural, non-violent, non-forced movement of goods, workers and capital, for Smith, will result in generally stable natural wage rates, natural profit rates and natural prices, as the Aristotelian system of elemental movement and gravitation suggests (by way of analogy). Smith can thus be viewed as creating one or more Kuhnian 'scientific paradigms' or Lakatosian research programs, particularly in the first two books of *The Wealth of Nations* (see O'Brien, 1976). His scientific or 'economic' system, or research program, would suggest the need for and the ability to find plausible answers to the following sorts of questions: what determines natural relative prices and deviations from these prices? What determines the distribution of income between the various social classes? What determines the rate of economic growth (or decline)? (see Schliesser, 2005A). Yet, Smith wanted not only to create what would become a

[15] For similar language in Hume, see Schabas (2001).

[16] Again, note how this tendency towards equality of rewards to capital and labour is presented by Smith as one of Aristotelian, not Newtonian gravity of mutual attraction. Also, note how 'interest' in the preceding sentence has replaced reference to any passion or moral sentiments. Economic interest, in the service of the goal of achieving or increasing social respectability, carries the day; see Hirschman (1977).

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scientific or economic system or paradigm. He also put forth a political system and he would call this a 'system of political economy'. Thus Smith created systems not merely to philosophically explain the world; but, as we have seen, he was very sensitive to the political effects of economic policy and, by advocating against the status quo, he was also arguing to change it fundamentally.

Recall that book 4 of WN is entitled 'Of Systems of Political Economy'. Eight of the nine chapters of that book are spent lambasting what he called 'The Mercantilist System'.[17] The mercantilist system involved various restrictions on trade, hindering the natural non-violent, non-forced movement of goods, capital and workers, putatively in order to help various commercial or mercantile enterprises and to promote economic growth. Furthermore, in Smith's view, 'It is the industry which is carried on for the benefit of the rich and the powerful, that is principally encouraged by our mercantile system. That which is carried on for the benefit of the poor and the indigent, is too often, either neglected, or oppressed' (IV.viii.4). Smith is quite clear that Mercantile project benefits the politically well-connected rich, not the poor.[18] (For more on this interpretation, see Pack, 1991; Schliesser, 2008B; Fleischacker, 2009; Boucoyannis 2013.)

He devotes a final, much more respectful, chapter to the Physiocratic system, which he views as unduly promoting the agricultural sector. Thus, 'Those systems, therefore, which preferring agriculture to all other employments, in order to promote it, impose *restraints* upon manufactures and foreign trade, act contrary to the very end which they propose', i.e. to increase the wealth of the nation (IV.ix.49, emphasis added). The mercantilist system imposes various restraints on natural human movements to supposedly help the mercantile sector of the economy and promote economic growth. The physiocratic system goes to the other extreme, imposing various restraints supposedly to help the agricultural sector of the economy and promote economic growth. For Smith: 'If the rod be bent too much one way, says the proverb, in order to make it straight you must bend it as much the other. The French philosophers, who have proposed the [physiocratic] system which represent agriculture as the sole source of the revenue and wealth of every country, seem to have adopted this proverbial maxim' (IV.ix.4).

In contradistinction to the mercantilist system which violates natural human movements to promote commerce, and the physiocratic system which violates natural human movements to promote agriculture, Smith proposed his own moderate position which favours no particular sector of the economy, which generally does not violate natural movements and which, according to Smith, will really promote economic growth. Hence, for Smith, 'It is thus that every system which endeavours, either by *extraordinary encouragements*, to draw towards a particular species of industry a greater share of the capital of the society than what would *naturally* go to it; or, by extraordinary restraints *to force* from a particular species of industry some share of capital which would otherwise be employed in it; is in reality subversive of the great purpose which it means to promote' (IV.ix.50, emphasis added). Hence, 'all systems either of preference or of restraint, therefore, being thus completely taken away, the obvious and

[17] Smith both described and made up the name of this system. Mainstream economists since then have generally followed Smith both in the use of the name for the system and in their evaluation of it. Keynes, of course, was a notable exception. See Keynes (1964, ch. 23, 'Notes on Mercantilism, the Usury Laws, Stamped Money and Theories of Under-Consumption', pp. 333–71).

[18] In Smith's time even among male citizens, there was a property requirement in order to be eligible to vote.

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simple system of natural liberty establishes itself of its own accord' (IV.ix.51). So Smith names his own political system, or system of police, or government policy, or system of political economy, the 'system of natural liberty.' It may be viewed to be 'natural' not because (say) it is common, but because it is not violent or forced; it largely lets the people pursue their own motives and motions.[19]

Moreover, Smith claims that his system is simple and obvious. As in physics and astronomy, the epistemic virtue(s) of simplicity and obviousness of a connecting principle is crucially important. Newton had found that he could connect the movements of the Planets by 'so familiar a principle of connection' as gravity (Astronomy IV.67; Smith, 1980, p. 98); and in Smith's view, 'the gravity of matter is, of all its qualities, after its inertness, that which is most familiar to us' (Astronomy IV.76; Smith 1980: 104). The simplicity and supposed obviousness or familiarity of gravity helped to make Newton's system to be 'considered, not as an attempt to connect in the imagination the phaenomena of the Heavens, but as the greatest discovery that ever was made by man, the discovery of an immense chain of the most important and sublime truths, all closely connected together by one capital fact, of the reality of which we have daily experience' (ibid.; see Schliesser, 2005B; on epistemic virtues, see Hanley, 2013, pp. 230–36).

Smith claimed his own system to be similarly simple and obvious. In Smith's own proposed system of natural liberty, 'every man, as long as he does not violate the laws of justice, is left perfectly free to pursue his own interest his own way, and to bring both his industry and capital into competition with those or any other man, or order of men' (WN IV.ix.51, emphasis added). In Smith's time, the 'laws of justice' pretty much mean legal enforced property rights.[20] So, if we grant Smith the Aristotelian distinction between natural and violent movement, then Smith's proposed political system will indeed be a 'natural' one based upon his understanding of the goal of 'the great mob of mankind'. As much as possible, his system will allow and encourage the 'natural' movement of people, free of force, as long as they do not break the law.

In TMS Smith wrote that 'in the great chess-board of human society, every single piece has a principle of motion of its own, altogether different from that which the legislature might chuse to impress upon it. If those two principles coincide and act in the same direction, the game of human society will go on easily and harmoniously, and is very likely to be happy and successful. If they are opposite or different, the game will go on miserably, and the society must be at all times in the highest degree of disorder' (IV.ii.2.17). Smith seemed to have kept this admonishment in mind when, as a system builder who is potentially unduly 'wise in his own conceit' (ibid.), he developed and advocated for his own 'system of natural liberty' (see also Levy and Peart, 2013). In Smith's view, this system, as much as possible, allowed each person in the great chessboard of life to follow their own 'natural', non-violent, non-externally forced principles of motion.

6. Conclusion

In key parts of *The Wealth of Nations*, Smith used the word 'natural' in the sense of not violent, not caused by an external force. He seems to have been modelled this use of

[19] Although not entirely. As is now well known (see, e.g. Viner, 1927), there were many Smithian exceptions to this basic doctrine, although, of course, nowhere near as many in either of the competing mercantile or physiocratic systems.

[20] For Smith's views on justice, see Haakonssen (1989); Pack and Schliesser (2006).

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the word 'natural' from his study of the history of physics and astronomy. Moreover, his use of the word 'natural' in this way, as well as his employment of the gravity analogy, seems to have been particularly influenced by the ancient Aristotelian system, rather than the classical Newtonian system. This is compatible with other Newtonian elements, of course (see Montes, 2003, 2008; Schliesser, 2005A). Market prices, wage and profit rates will tend to gravitate or move to natural prices, wage and profit rates and then, if not moved (or forced), stay there. Smith's proposed simple and obvious system of natural liberty would allow these natural prices and wage and profit rates to emerge. The proposed system would be natural in the sense that it would promote natural, i.e. non-violent, non-externally forced movements and actions by 'the great mob of mankind.'

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