



The Social Ecology of Adam Smith: Reconsidering the Intellectual Foundations of Political Economy

Leo Steeds

To cite this article: Leo Steeds (2022) The Social Ecology of Adam Smith: Reconsidering the Intellectual Foundations of Political Economy, *New Political Economy*, 27:1, 132-145, DOI: [10.1080/13563467.2021.1926956](https://doi.org/10.1080/13563467.2021.1926956)

To link to this article: <https://doi.org/10.1080/13563467.2021.1926956>



© 2021 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 13 May 2021.



Submit your article to this journal [↗](#)



Article views: 2183



View related articles [↗](#)



View Crossmark data [↗](#)



Citing articles: 1 View citing articles [↗](#)

The Social Ecology of Adam Smith: Reconsidering the Intellectual Foundations of Political Economy

Leo Steeds 

Department of Politics and International Studies, University of Warwick, Warwick, UK

ABSTRACT

Nearly 250 years on, the publication of Adam Smith's *The Wealth of Nations* is widely understood as a germinal moment for modern (political) economic analysis. Within political economy, the text continues to be cited not only as the inauguration of a specifically liberal theoretical tradition, but also as a foundational statement of what it means to be doing political economy more broadly. Yet established readings of the work have reproduced, perhaps unwittingly, assumptions about the nature and remit of its content drawn from subsequent economic thought, obscuring crucial environmental ideas that underpinned its main conclusions. Though long overlooked within orthodox readings, Smith in fact insisted that essential to political economic analysis was a careful consideration of the materiality of evolving relationships between societies and the nonhuman environment – an approach that, I suggest, can justifiably be viewed as a kind of 'social ecology'. Reassessing these theoretical foundations reveals, on the one hand, over-optimistic ecological assumptions that he bequeathed to subsequent liberal political economy. On the other, in light of today's ecological crisis, it prompts us to reconsider the importance, for political economic analysis more broadly, of a materialised understanding of the relationship between human societies and the earth.

KEYWORDS

Adam Smith; social ecology; environment; economic theory; history of thought; land

Introduction

Across much of academia and beyond, Adam Smith's name has for some time now been treated as essentially synonymous with a 'free market', often explicitly neoliberal ideology (Tribe 1999). The very mention of the 'invisible hand', has become sufficient to invoke – normally with evident approval or disapproval, depending on the speaker – the idea of a total faith in the beneficent action of markets, and the perils of state intervention. In recent years, this image of Smith has increasingly been brought to bear on environmental debates. Since the 1990s, various pro-market enthusiasts have invoked a Smithian heritage in support of the idea that market forces can be yoked to render global capitalism sustainable (Dale 2012). Yet the 'green growth' narratives that have accompanied such pro-market rhetoric, are themselves looking increasingly unsustainable in light of the now clear over-optimism of projections that ongoing GDP growth might be 'decoupled' from increases in resource use (Bailey 2015, Hickel and Kallis 2020).

In the face of an escalating global ecological crisis, then, it has been increasingly common in the past few years to find the kind of neoliberal capitalism that Smith is popularly held to endorse the justified object of sustained criticism from environmentally-concerned scholars and activists (e.g. Harvey 2007, Klein 2014, Malm 2015, Moore 2015, Monbiot 2017). In the words of Naomi Klein,

CONTACT Leo Steeds  l.steeds@warwick.ac.uk

© 2021 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group
This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way.

for example, rather than hoping for ecological salvation from such a failed economic model, this moment is one in which we should be ‘slapping the invisible hand’ (Klein 2014, p. 105) – the Smithian reference here requiring no attribution. One notable contribution to the recent phases of this debate has been the (re)discovery of an ‘ecological’ Karl Marx, particularly through the work of John Bellamy Foster (2000). Here the supposedly ‘abstract’ and ‘simplistic’ understandings of the nonhuman environment allegedly found within the writings of Smith and other ‘classical’ economists provide an explicit foil for the avowedly much more nuanced understanding of the natural world demonstrated by Marx and Engels (Foster 2007).

Against the backdrop of these current trends in critical environmental thought, it might seem somewhat tone-deaf to try to make an argument for understanding Adam Smith – putative herald of the virtues of free market capitalism and exponent of a supposedly environmentally illiterate form of political economy – as himself an ‘ecological’ thinker. Yet I suggest there are important reasons for doing so. Within political economy, Smith continues to be cited as a – if not *the* – founding figure (e.g. Stiglitz 2006, p. 66, Frieden 2007, p. 22, Strange 2015 [1988], p. 208), not only inaugurating a specifically ‘liberal’ canon of thought (e.g. Kirshner 2009, p. 38, Ravenhill 2020, p. 113, Williams and O’Brien 2020, p. 12), but also defining the nature and remit of political economic analysis more broadly (e.g. Gilpin 2001, p. 25, Miller 2008, p. 1). The reputation of Smith as a thinker, in other words, remains intimately caught up with the self-image of political economy as a field of enquiry. It surely matters therefore exactly what the content of his work is understood to be.

As Matthew Watson (2005: chap. 4) and Chris Clarke (2015, p. 1) have argued, such interpretations of Smith’s work have long been influenced by a historiography deriving from histories of economics written by economists for economists. For these authors, the resulting tendency to frame Smith’s work in terms of the theoretical preoccupations of subsequent economic thought has led in particular to the neglect of a broader moral dimension of Smith’s thought within which his political economy should be understood to operate. A similar claim can be made regarding the environmental aspect of Smith’s work.

Within this history of economic thought literature, interpretations have coalesced around the idea that Smith, along with David Ricardo in particular, was a proponent and founder of ‘classical’ political economy (e.g. Samuelson 1978, Hollander 2016 [1992], Blaug 1997, Roncaglia 2017). Unifying understandings of what exactly constitutes ‘classicism’ is the idea that here production is conceived in physical terms. Within ecological economics, this physicality of production has been stressed in particular as distinguishing ‘classical’ from later *neoclassical* economics (Christensen 1991, Gómez-Baggethun *et al.* 2010), a school which, as critics have observed, conceives of market relations instead purely in terms of immaterial exchanges of abstract value (Hornborg 2017, p. 42). Yet, perhaps because of the perceived unity of the ‘classical’ school, the specificity of the environmental aspect of Smith’s thought has frequently been overlooked.

Amongst environmental historians, by contrast, Smith’s work has for some time been recognised for its distinctive contribution to the development of ideas about the nonhuman world (Thomas 1984, Worster 1994). More recent historical work, however, has revealed the intimate relation of *The Wealth of Nations* to a broader explosion of knowledge about nature and environment that characterised the Enlightenment, and especially to the political ecology of agricultural development in Scotland (Drayton 2000, Davidson 2005, Jonsson 2010, 2013, Jones 2016). Frederik Jonsson, in particular, has made the important argument that Smith’s view that market forces were, in and of themselves, sufficient to effect the ‘improvement’ of the natural order represented one of two ‘rival ecologies’ in late-eighteenth century political economy, the other being epitomised in the efforts of Swedish botanist Carl Linnaeus to deploy taxonomical science to manage plant and animal life towards the ambition of achieving national autarky via import substitution. The argument put forward here builds on this claim, but goes further in demonstrating that Smith’s ideas about the equilibrating action of markets in respect to the natural world, far from reflecting the lack of concern for the relationship between societies and the environment often imputed to him, were in fact the product of a detailed and sustained set of reflections that sat at the heart of the theoretical construction of his political economy, in an approach that can justifiably be considered a kind of ‘social ecology’.

In choosing the term 'social ecology' to describe Smith's approach, I am not attempting to align him with any particular subsequent tradition that has used this label. Today the term is used to refer to two distinct traditions: the Marxist-anarchist influenced political philosophy of Murray Bookchin, situated within the North American deep ecology movement (Bookchin 1982), and a more recent inter-disciplinary field crossing the sciences and humanities for the study of the interactions between human and natural systems known as the 'Vienna School' (Haberl *et al.* 2016 ch.1). Whilst there is no sense in trying to align Smith's work directly with either, both share a recognition of the irreducible inter-connectedness of social and natural worlds. The term 'ecology' itself post-dates Smith's writing by nearly a century. Yet his insistence, as we will see, that political economy should be premised on an understanding of the evolving material relations between human societies and the nonhuman environment makes the 'social ecology' label a fitting one. Amongst the Vienna school's central concerns are long-term shifts in resource flows, their mediation by production and consumption, land use, city-hinterland relations, and human pressure on biodiversity. I draw broadly from the language deployed in this tradition in order to highlight how a similar set of concerns, albeit phrased in the conceptual vocabulary of the late-eighteenth century, lay at the heart of Smith's political economy.

This is important for two reasons. Firstly, whilst care must be taken in reading more recent economic theories back into Smith's work, it is nevertheless true that he bequeathed certain normative assumptions to subsequent political economy, including what now appear highly dubious conclusions regarding the beneficent effects of markets on the 'improvement' – understood as a general betterment – of the earth. By failing to take this into account, the orthodox reception of Smith obscures crucial ecological assumptions embedded within the normative foundations of liberal economic thought. Secondly, and more positively, moving away from established interpretations of Smith's work and instead recognising the extent to which his political economy was grounded in a social ecological way of thinking invites much-needed critical reflection on the way we understand the nature and remit of (political) economic analysis in light of today's overlapping crises of climate, biodiversity, and resource limits.

The argument proceeds in three sections. Exposing what I am terming Smith's social ecology requires a deep dive into the theoretical construction of *The Wealth of Nations*. Section one thus explores the central role of a natural jurisprudence within the text, emphasising how Smith bestowed particular importance on environmental considerations within a stadial model of societal development. The second looks at how this model dovetailed with Smith's keen interest in diverse range of natural historical phenomena, and how this informed a model of land use change that underpinned the central arguments of the text. Section three looks at how this social ecology translated into a set of normative prescriptions for political economy, demonstrating that Smith's famous conclusions regarding the beneficent action of markets are irreducibly linked to his theoretical approach, and thus with the ecological assumptions embedded therein. A conclusion reflects on the implications for contemporary political economy.

Natural Jurisprudence and a Developmental History of Societies

From the perspective of orthodox readings, it is perhaps not immediately intuitive where we might begin looking for a social ecological component of Smith's political economy. If we put aside assumptions that its content is to be understood most readily through the extent of its alignment with subsequent economic thought, then on what kind of theoretical foundations should we understand his work to be grounded?

The publication of the Glasgow edition of Smith's collected works in 1976 gave rise to a body of historicist scholarship that transformed understandings of his thought, both in its own terms, and in relation to the broader currents of the Scottish Enlightenment. A characteristic of this scholarship has been its emphasis on reading Smith's work as a whole. One response to rethinking the foundations of *The Wealth of Nations* has thus stressed its continuity with the only other book Smith published within his lifetime, *The Theory of Moral Sentiments*. It is however a different response that is most

relevant for the present purposes: this is one that has emphasised its continuities not with his moral philosophy, but rather with his jurisprudence. The rediscovery, long after Smith's death, of two sets of student notes from lectures on jurisprudence delivered during his tenure at Glasgow University (Meek 1976) precipitated a raft of important new insights into his political economy. In the words of one influential contribution, the 'general principles' (Smith 2014 [1776], p. 468) that Smith insisted should underpin the science of political economy were not those informing subsequent (political) economic thought, but rather 'those which are the subject of Smith's jurisprudence' (Haakonssen 1981, p. 97).

The significance of these links for the present purposes lies in the nature of Smith's jurisprudence. Smith engaged in what is referred to as a natural jurisprudence, a form of reasoning informed by early modern natural law theorists such as John Locke, Samuel von Pufendorf, and Hugo Grotius, which sought to explain the origins of property (Garnsey 2007: chap. 6). Following these and other Enlightenment thinkers, Smith employed a conjectural historical approach – one, as historian J.G.A. Pocock put it, in which 'events or past states of existence are explained by appealing to those propensities of "human nature" most likely to have operated in producing them' (Pocock 2006, p. 276). He drew in particular on Grotius' interrogation of the likely derivation of Roman law categories, enquiring into – for example – the principles of natural justice that must have informed the gathering of resources in primitive societies, and what conditions might have prompted the development of these principles into more sophisticated forms of cumable property, and notions of property in land (Salter 2010).

A distinctive expression of this kind of conjectural method took the form of a theory of societal development according to a discrete series of stages. Smith was far from alone in taking this approach. Whilst such stadial theories are today more commonly associated with Marx, they were in fact a crucial element of social theory throughout the Enlightenment and beyond (Palmeri 2016). The form of stadial history employed by Smith, however, shared with other Scottish Enlightenment contemporaries the characteristic that it expanded well beyond the remit of purely jurisprudential investigation, taking on a much broader sociological character (Meek 1971). From the starting point of an enquiry into the origins of property, a whole set of reflections on the nature and derivation of all kinds of laws, customs, and institutions followed.

This had a crucial environmental dimension. Montesquieu, in *The Spirit of Laws* (2000 [1752], p. 23), had put forward a kind of environmental determinism, whereby legal systems were understood to take shape 'in relation to the climate of each country, to the quality of its soil, to its situation and extent'. The notion that, by regulating the ways in which resources were gathered and distributed amongst individuals, laws served to mediate the relationship between societies and the nonhuman environment was one that was embraced by the Scots. Rather than viewing this in static terms, however, they put forward a developmental model according to which laws did not simply reflect prevailing conditions, but rather advanced through a series of stages propelled by the effects of population growth and technological change (Smith 2020, p. 91). This developmental model put forward by Smith and other members of the so-called 'Scottish historical school' thus gave priority in accounting for laws, customs, and institutions of a given society to its mode of subsistence.

As Smith instructed students at Glasgow: 'There are four distinct states which mankind passes through: – first, the Age of Hunters; second, the Age of Shepherds, third, the Age of Agriculture; and fourth, the Age of Commerce' (Smith 2014 [1762], p. 14). Of these, the first was said to be the 'lowest and rudest' (Smith 2014 [1776], p. 689), with such hunter-gatherer societies deriving their subsistence solely by foraging what Smith termed the 'spontaneous productions of the earth' (Smith 2014 [1776], p. 332). Shepherding societies, whilst still premised on shifting habitation, represented for Smith a major advance in this respect, introducing notions of property that extended beyond immediate possession, allowing such societies to assert, albeit in a limited fashion, a degree of control over the earth's productivity through the accumulation of herds of animals. This innovation, he suggested, allowed shepherding societies to support a much greater population on the same extent of 'fertile territory' (Smith 2014 [1776], p. 634) and a greater complexity of social order (Smith 2014 [1776], p. 691) with regular government becoming a necessity. The third, 'agricultural' stage saw another, perhaps more dramatic change in the relationship between societies

and the earth, with humans in such societies assuming to an unprecedented level control over what Smith – in anthropomorphic terms – described as the ‘labour’ of nature (Smith 2014 [1776], p. 363). As he argued, the primary significance of the ‘operations of agriculture’ was ‘to direct the fertility of nature towards the production of the plants most profitable to man’ (*ibid.*). Property in land, and the instantiation of settled habitation were thus crucially associated with an enhanced command over the environment.

Though this stadial theory is not laid out with anything like the comprehensiveness found in Smith’s *Lectures*, references such as these to the first three societal stages abound throughout the pages of *The Wealth of Nations*. In fact, as Ronald Meek (quoted in Winch 1978, p. 19) argued, the stadial theory can be understood to constitute an ‘organising principle’ of the work as a whole. It is undoubtedly towards the fourth stage, however, that Smith devoted the majority of his attention. Indeed, in an argument influential within the historicist literature, István Hont and Michael Ignatieff (1983) suggested that the entirety of the work can be understood as an extended reflection on the nature of subsistence in modern commercial societies. By ‘commercial’ society – a concept that may indeed have been his own invention (Pauchant 2017) – Smith referred not to societies based primarily around international trade, but rather to what we might today call the ‘market economy’ (Polanyi 2001 [1944]). For Smith, the stadial theory provided a crucial way of gaining perspective on the specificity of a form of society whose subsistence relations were structured increasingly not around a direct relationship of the majority of individuals with the land, as it had been in previous stages of human history (whether through foraging, husbandry, or cultivation), but around commodity production and market exchange.

As the content of this stadial history makes clear, questions of societal subsistence and property were intimately linked for Smith, with the primary function of legal structures – from the shepherd-ing stage onward – being to mediate the ways in which natural resources were gathered and distributed. He recognised that such institutions had long served to produce inequality between individuals – as he put it plainly: ‘Civil government ... is in reality instituted for the defence of the rich against the poor, or of those who have some property against those who have none at all’ (Smith 2014 [1776], p. 715). But one of the striking features of commercial society was that it seemed to heighten inequalities of property yet further, raising the question of how such a form of social organisation might be reconciled with principles of natural justice.

Like the early modern natural law theorists, Smith understood the labour of the individual as forming the original basis of all property claims. Echoing Locke’s (2017 [1689]: chap. V) famous discussion of property, he insisted:

The property which every man has in his own labour, as it is the original foundation of all other property, so it is the most sacred and inviolable (Smith 2014 [1776], p. 138)

Smith went far beyond Locke and other theorists, however, in undertaking a systematic analytical demonstration of exactly how property rights served to mediate the gathering and distribution of resources in the various supposed stages of societal development. In earlier societies, a majority of individuals had obtained their subsistence directly from their own labour. But commercial society seemed to differ markedly in this respect, with most individuals providing for only a fraction of their own subsistence needs. For Hont and Ignatieff (1983, p. 2), this placed a central paradox at the heart of the investigation of *The Wealth of Nations*: why was it that a modern society which did not return the whole produce of labour to the labourer could seemingly provide a better standard of living for the very poorest than the societies of the past? Smith’s answer, famously, lay in the astonishing productive power of an advanced division of labour.

Like the ‘classical’ political economists of the early nineteenth century, Smith held that it was human labour, not the ‘labour’ of nature, that underpinned value in exchange – though the character and extent of his commitment to a ‘labour theory of value’ remains debated (Peach 2009, Grieve 2019). But it does not follow, as has often been suggested (Worster 1994, p. 53, Blaug 1997, p. 81), that he held to a theoretical apprehension of nature as nothing more than that which bestowed

'free gifts' on a process of capitalistic production, a view that is indeed unequivocally to be found amongst Ricardo (2004 [1817], p. 76n) and his followers. Taking into account his stadial theory underscores how Smith's thought, by contrast, extended far beyond capitalistic production to take a much broader view of the use values provided by the natural world at different stages of societal development. Moreover, this does not represent the straightforwardly utilitarian view of nature often attributed to him. Rather, for Smith, the use values furnished by nature were only sufficient because societies themselves adapted to the possibilities and limits of their environmental context at any given stage of development.

According to Smith's stadial theory, then, the institutions structuring societies – above all property relations – were understood as what we might think of as a kind of social technology mediating human-environment relations in ways subject to periodic reconfiguration as conditions changed. In fact, we can even say that what we see here, in embryonic form, is something like a theory of 'social metabolism', a concept first clearly articulated by Marx nearly a century later (Foster 2000: chap. 5) and which continues to inform today's sustainability science, denoting the profile of use and flows of energy and resources associated with socio-environmental relations at a given stage of population and technology (Haberl *et al.* 2016, p. 64). However, if this was the extent of Smith's reflection on human-environment relations then the term social ecology might seem too generous. But, as he was keenly aware, it was not merely that societies were shaped by their surroundings. Rather, they had in turn transformed the earth in ways that had profound consequences for human and nonhuman worlds alike. Understanding this, he insisted, was of the highest importance for any consideration of political economy.

Natural History and the Improvement of the Earth

As the historicist literature has long recognised, Smith's jurisprudence, along with the stadial theory of societal development that accompanied it, can itself be understood under the broader label of 'natural history'. Pocock (2006, p. 276) notes that for Smith's contemporaries it was possible to speak in terms of 'a "natural history" of inanimate or animate objects' conceived as 'a systematic enquiry aimed at classification, systematisation, and explanation'. Indeed, a love of 'system' is recognised as a feature running throughout Smith's thought, the ideal of the 'beauty of a systematical arrangement of different observations connected by a few common principles' (Smith 2014 [1776], p. 768) underpinning his political economy as much as the other areas of his work (Skinner 1996, p. 45). But all the evidence suggests that Smith regarded this jurisprudential and sociological form of investigation as continuous with another, quite distinct tradition that we would more commonly today recognise as fitting the label 'natural history'. This is one running from Pliny to contemporaries of Smith such as the Comte de Buffon, and Linnaeus, and which was concerned with the description of forms of plant and animal life, and minerology.

Smith's interest in the work of contemporary naturalists has garnered increasing attention in recent years (Schabas 2003, 2009, Jonsson 2010, 2013). Though long overlooked, *The Wealth of Nations* is in fact shot through with reflections on diverse phenomena of natural historical interest. In keeping with the tenor of his stadial history, Smith's primary concern was to relate patterns of environmental change to processes of societal development. It was, however, agriculture that concerned him above all. He conjectured, for example, that:

In its rude beginnings the greater part of every country is covered with wood ... As agriculture advances, the woods are partly cleared by the progress of tillage, and partly go to decay in consequence of the increased number of cattle ... [These], when allowed to wander through the woods, though they do not destroy the old trees, hinder any young ones from coming up, so that in the course of a century or two the whole forest goes to ruin. (Smith 2014 [1776], p. 183)

Such comments reflect a concern for land use and population dynamics that were at the heart of Smith's social ecology, and, as we will see, informed the overall conclusions of his political economy.

In spite of this concern for the human transformation of the natural world, the impulse guiding Smith's interest was not a preservationist one. Indeed, writing at a time when the opinion of European intellectuals overwhelmingly embraced the purposive adaptation of the earth, he adopted a much more optimistic view of human-induced environmental change. Such views had been expressed succinctly in *The Theory of Moral Sentiments*, where he described in favourable terms how cultivation, settlement, and the 'sciences and arts' associated with societal development,

have entirely changed the whole face of the globe, have turned the rude forests of nature into agreeable and fertile plains, and made the trackless and barren ocean a new fund of subsistence. (Smith 2014 [1759], pp. 183–4)

There is little evidence that his attitudes had changed in this respect by the time he wrote *The Wealth of Nations*, human-induced environmental change being here largely identified – albeit with notable exceptions – with notions of 'progress' (e.g. Smith 2014 [1776], p. 165).

That Smith's social ecology should combine a historical jurisprudence with a concern for the transformation of the environment is not as improbable as it perhaps might seem to a modern reader. Like other contemporary theorists in Scotland and beyond, Smith was acutely aware that landscapes were shaped by the ways in which land was owned and used. In the context of the late eighteenth century, this was far from an abstract concern. Across Europe, elites of various kinds sought 'improvement'. This term denoted above all the rendering fertile of land. But the concept was from its emergence in England in the sixteenth century simultaneously intimately connected with practices of enclosure and ideas of the primacy of private ownership, this form of land-holding being widely understood to engender significant productivity gains in agriculture in comparison to older systems based around shared use rights (Linklater 2014: chap. 1). As recent historical scholarship has emphasised, however, improvement was not only a practical and legal concern. Rather, efforts to adapt the environment by unlocking nature's secrets were a central focus of Enlightenment intellectual activity (Jones 2016: chap. 8). In this context, ideas of improvement took on the grander sense of a general betterment of the natural order itself.

As Neil Davidson (2005) convincingly demonstrated, the political economy of Smith and his Scottish contemporaries spoke to the loose alliance of landholders, lawyers, and intellectuals that formed a national movement for agrarian reform in Scotland. Indeed, far from a passive bystander, Smith himself acted as consultant to his long-standing patron, the Duke of Buccleuch, on estate improvement, especially influencing reform of tenancy law (Bonnyman 2014: chap. 3). Unsurprisingly, ideas of enclosure and technical improvement in agriculture are far from incidental to the arguments of *The Wealth of Nations*. Central to Smith's contribution, however, was a model of land use change that, besides a brief flurry of interest amongst geographers in the 1970s (Watson 1976, Grigg 1979), has received remarkably little commentary. According to his stadial history, the inception of agriculture in the third societal stage had instantiated a new phase in subsistence relations by asserting a unprecedented degree of human control over the earth's natural fertility. Yet Smith was keenly aware that, in practice, land-users in such societies would – and indeed could – not cater for the entirety of their needs through cultivation alone. Indeed, in the feudal societies of Europe, which Smith took as the primary model for his 'agricultural' societal stage (Todd 2014 [1976], p. 14), tenancy arrangements were such that, for the majority of individuals, allocations of land to a family for purposes of cultivation were supplemented by access to surrounding 'wastes' – areas of wood or grassland that would provide a variety of utilities such as timber, firewood, and space to graze animals (Thompson 1982 [1963]).

Smith recognised that the transition from such subsistence dwelling to marketised production with the emergence of commercial society represented an important shift in the mechanism of societal subsistence. Not only did this imply a change in the way individuals provided for their own basic material needs, but it in turn implied a further transformation of the earth. He observed that 'the poorest occupiers of land' could often maintain animals at minimal expense:

The little offals of their own table ... supply those animals with a part of their food, and they find the rest in the neighbouring fields without doing any sensible damage to any body. (Smith 2014 [1776], pp. 243–4).

Smith theorised that the decline of these forms of land use meant that the availability of goods traditionally derived from such uncultivated areas would also decline. According to the logic of supply and demand, this would increase their market price and thus make it sufficiently profitable for landowners to devote their own land to uses such as the pasturing of cattle (Smith 2014 [1776], p. 238) or the production of timber (Smith 2014 [1776], p. 183) that would previously have been supplied by wastes. Thus in the 'progress of improvement' (Smith 2014 [1776], p. 259) ever more goods would come to be provided, not by virtue of the spontaneity of nature, but by a progressive apportionment of land area to their human-directed cultivation. The division of labour amongst humans, then, was paralleled by what, in Smith's anthropomorphic terms, we might call a spatial division of the 'labour' of nature itself.

This diminution of 'unimproved wilds' (Smith 2014 [1776], p. 164) that accompanied the advent of commercial society thus had its endpoint in 'the compleat improvement and cultivation of the country' (Smith 2014 [1776], p. 245), at which point – unlike modern growth theorists – Smith concluded that the nation would be 'fully peopled' (Smith 2014 [1776], p. 111), and a 'stationary state' reached (Smith 2014 [1776], p. 89). Of the various goods progressively brought into production, however, one in particular held a special interest. With the diminution of wastes, Smith thought that the price of cattle had risen sufficiently to justify for the first time the dedication of areas of enclosed land to their pasturage (Smith 2014 [1776], p. 167). The significance of this lay in a problem that was of keen interest to contemporary improvers – that of soil fertility. Smith's analysis suggested that traditional practices of fertilisation that relied on the manure of cattle kept for tillage, and the use of 'night soils' obtained from nearby towns were a key limiting factor in the progress of improvement. Cultivated earth, he recognised, was quickly 'entirely exhausted' (Smith 2014 [1776], p. 239) without proper fertilisation. But keeping cattle on pasture or in barns provided possibilities to harvest the power of their manure to replenish soils (Smith 2014 [1776], p. 238). By making it affordable for farmers to dedicate land specifically to the feeding of cattle, therefore, the rises in beef prices occasioned by the decline of wastes provided a mechanism for the generalisation of good soil fertility practices, and the improvement of the country as a whole.

As Jonsson (2010) has argued, whilst Smith drew on the natural historians for first-hand accounts of the various environmental phenomena he considered, his conclusions regarding agricultural development differed radically. The natural history of Linnaeus and other contemporaries was born out of a long tradition of attempts to foster agricultural improvement through efforts to transplant flora from across the world, a project that had gathered steam particularly in the context of European colonial expansion (Drayton 2000). Against this vision of environmental management by enlightened expertise, Smith theorised an entirely different remedy for lacklustre agricultural development. On the basis of his stadial historical model, he argued that, left to their own devices, the combined forces of population growth and the gradual extension of marketised production under commercial society would in time serve to effect the generalisation of pastured cattle, and the good soil fertility practices that followed. The benefits of this development were not restricted to agriculture, however. On the contrary, agricultural improvement was understood as the backbone of societal progress in general. In evidence of this, Smith cited an exemplary case of this pattern – the rapid development of Scotland after the union with England in 1707. The single most decisive factor in this, he argued, was the rise in the price of cattle which had been 'the principal cause of the improvement of the low country' (Smith 2014 [1776], pp. 239–40). As Jonsson put it succinctly, 'without high cattle prices, there would be no surplus manure and no Scottish Enlightenment' (2010, p. 1354). Smith's social ecology, then, pointed clearly towards a set of normative prescriptions for political economy.

The Political Economy of the Town and Country

At this point it is possible to say definitively that the reading of Smith as a 'classical' theorist who thought in physical terms about a process of capitalistic production substantially undersells what

I have termed the social ecological content of his work. Yet, as much as he might frequently be referred to as a 'classical' author, political economy renderings of Smith's work frequently continue to be premised on a presentation of his central arguments that fails to capture even this more limited sense that he considered economic processes in terms of material inputs. Indeed, as Chris Clarke (2015: chap. 1) has detailed, there is a long-standing tendency within political economy to align Smith in various ways with much more recent economics. A crucial aspect of this is the rendition of the central arguments of *The Wealth of Nations* in terms of the superiority of an abstract 'market' over an equally abstract 'state'. In phrasing Smith's conclusions in these terms, such renderings of his work tend to reproduce implicitly – and sometimes more explicitly (Gilpin 2001, p. 54, Miller 2008, p. 13) – assumptions about the functioning of markets and the remit of economic analysis itself drawn from modern neoclassical economics.

That any reference to the materiality of Smith's arguments should be absent here is therefore unsurprising since here any consideration of the materiality of human subsistence is regarded as entirely beyond the purview of analysis: as human ecologist Alf Hornborg (2017, pp. 42–3) put it, neoclassical economics 'is exclusively concerned with market prices and monetary metrics'. Nevertheless, in the words of Keith Tribe, parts of Smith's work are 'peculiarly susceptible to the imposition of a neo-classical grid' (1978, p. 7). There is indeed a long-standing tradition amongst economists of understanding the key contribution of Smith's political economy to be a protean statement of the kind of ideas of market equilibrium that play a central role in modern neoclassical economics, in particular, taking Smith's notion of the 'invisible hand' (despite it appearing once only within *The Wealth of Nations*) as a shorthand for the supposed capability of markets to effect an optimal allocation of resources, judged in terms of Pareto optimality (Winch 1997).

As Matthew Watson has recently demonstrated, whilst neoclassical equilibrium models – at least nominally – take markets as their locus of analysis, the concept of a 'market' employed here is highly abstract in nature, with general equilibrium models in particular hingeing entirely on advanced mathematics for their articulation (Watson 2018, p. 31). By contrast, as Watson notes, Smith's understanding of a market was eminently more material. Besides evoking the hustle and bustle of marketplaces as physical sites of actual human interaction (Watson 2018, p. 21), much of Smith's discussion of markets is conducted in terms of physical and human geography. He talks, for example, in spatial terms of the *extent* of the market, how this is limited by factors such as proximity to 'the great navigable rivers' (Smith 2014 [1776], p. 34), and how this in turn influences the occupations of inhabitants of different areas (Smith 2014 [1776], p. 31). Indeed, in keeping with his social ecology, such a materialised understanding of markets was crucial to the overall conclusions of the work.

For Smith, the aim of political economy was not 'growth' in the more modern sense of GDP growth – rather, it was the fostering of 'wealth'. Perhaps unsurprisingly for a work that proposed to undertake, to give it its full title, *An Inquiry into the Nature and Causes of The Wealth of Nations*, Smith had a clear idea of how this should be understood. As he insisted throughout, national wealth consisted not in money – a fallacy attributed to a body of thought and policy for which he coined the term 'mercantilism' – but rather in 'the annual produce of the land and labour' (Smith 2014 [1776], p. 360). This formulation had a precise meaning. Despite Smith's reputation as a theorist who turned *from* land to labour (Heilbroner 2000, p. 49), both terms were equally important here. In defining wealth in this manner, Smith took aim at what he argued were two starkly opposed systems of political economy. The first was the mercantilist thought that he suggested had dominated policy-making across Europe in recent history, seeking to privilege industrial and commercial interests on the basis that high-value exports attracted bullion into the territory. Around this central ambition, Smith observed, whole systems of domestic and colonial regulation had developed based on a beggar-thy-neighbour principle mobilised in service of 'the monopolizing spirit of merchants and manufacturers' (Smith 2014 [1776], p. 493).

The second system, by contrast, was one that he noted had not yet ever been implemented, but remained purely a set of theoretical propositions. This, which its proponents termed 'physiocracy' (literally, 'the rule of nature'), instead proposed to promote agriculture as the true source of national

wealth over and above 'sterile' manufacturing and commerce. Whilst Smith criticised both mercantilism and physiocracy, his rejection of the logic of the first was far more absolute than his much more measured qualification of the second. Though he did disagree with the physiocrats that land-based industry was the *sole* source of societal wealth, he nevertheless argued that their 'system ... , with all its imperfections is, perhaps, the nearest approximation to the truth that has yet been published upon the subject of political œconomy' (Smith 2014 [1776], p. 678), continuing to insist that '[t]he land constitutes by far the greatest, the most important, and the most durable part of the wealth of every extensive country' (Smith 2014 [1776], p. 258).

In keeping with his materialised understanding of markets, Smith understood these contrasting systems of political economy in terms of opposing geographical biases: whilst mercantilism privileged the industries of the town, physiocracy promoted that of the countryside. Yet it was precisely the failure to understand the material inter-relation of these zones that, in Smith's view, was the great downfall of these existing systems of political economy. As he emphasised:

The town, in which there neither is nor can be any reproduction of substances, may very properly be said to gain its whole wealth and subsistence from the country. (Smith 2014 [1776], p. 377)

Indeed, as he went on to suggest, apart from exceptional cases in which towns got their subsistence by long-distance trade, the size of a town was largely dependent on the volume of surplus generated in the surrounding countryside. Prevailing mercantilist political economy, by impeding agriculture – principally through a system of paternalist price regulations known as the 'grain police' (Hont and Ignatieff 1983, p. 13) – thus served, according to Smith, to undermine its own aims. Instead, by taking into account the subsistence relations on which society was premised in its commercial stage of development, Smith insisted that political economy should be reoriented towards a recognition that it was in fact the improvement of agricultural land that constituted 'the greatest of all publick advantages' (Smith 2014 [1776], p. 245).

It is common to see Smith cited as a champion of *laissez-faire* (Pettman 1996, p. 196, Balaam and Veseth 2008, p. 104). However, the connotations of that term today tend to obscure the specificity of his arguments, and the social ecological substrate on which they rested. Smith proposed what he termed a 'system of natural liberty' (2014 [1776], p. 686). This was premised on an assumption of the natural priority of agriculture, both in terms of its role as the material basis of societal subsistence and as a site of capital investment. Whilst the Physiocrats had deemed agriculture the sole form of productive industry, however, Smith argued that the labour of merchants and manufacturers too could be deemed productive. But this was true, for Smith, *only* insofar as these other kinds of industry would, in turn, increase the productivity of agriculture. The labour of the manufacturer or the merchant, he argued, could be regarded as productive only because it,

contributes ... indirectly to increase the produce of the land. It increases the productive powers of productive [i.e. agricultural] labour, by leaving it at liberty to confine itself to its proper employment, the cultivation of land; and the plough goes frequently the easier and the better by means of the labour of the man whose business is most remote from the plough. (Smith 2014 [1776], p. 669)

Whilst agricultural work was perhaps itself less directly amenable to a division of labour (Smith 2014 [1776], p. 16), it nevertheless benefited immensely, Smith thought, from an extended division of labour across society as a whole.

As we have seen, Smith's social ecology envisioned a natural path of societal development through the gradual improvement of agriculture via enclosure, commercialisation and capital investment leading to a virtuous cycle of increasing soil fertility. But this, he argued, had been diverted by the defective political economy of states to date. Holding back farming by restricting prices in times of scarcity had placed barriers to capital investment in agriculture, forcing European societies to develop in an 'unnatural and retrograde order' (Smith 2014 [1776], p. 380). Whilst urban industry had eventually increased, this progress was not *because* of mercantilist policy but rather *in spite* of it, and had thus been 'both slow and uncertain' (Smith 2014 [1776], p. 422). Somewhat

counter-intuitively, he suggested that, in fact, discouraging manufacturing, as physiocratic thought proposed, would produce the same effect: by increasing the price of manufactured goods for which agricultural products could be exchanged (Smith 2014 [1776], p. 686), it would decrease the relative value of agricultural goods, again disincentivising improvement. A 'system of natural liberty', by contrast, would establish the proper division of labour between town and country, allowing the natural course of societal development to be embraced. Smith's hypothesis about the spread of beneficial soil fertility practices thus suggested that commercial society, when not thwarted by misguided state policy, would usher in a new era of earthly abundance. Indeed it was this that he thought might ultimately justify vast disparities in the distribution of property between individuals: at least during its growth phase, commercial society had the potential to provide adequately for the poorest in society, ending once and for all the scourge of periodic dearth that had plagued early modern societies (Hont and Ignatieff 1983, p. 13).

The fact that these conclusions are frequently rehearsed in the much more abstract, and distinctly neoclassical, terms of a binary opposition between 'state' and 'market', within which the allocative efficiency of the latter is said always to be superior to the former, therefore obscures crucial aspects of Smith's theory. To be sure, he envisaged a kind of equilibrium, but this was not of a kind similar to the formalistic market models of later neoclassical economics. Rather, the equilibrium Smith's theory suggested was one that, as Jonsson (2010, p. 1362) suggested, saw a 'quasi-providential fit between markets and nature'. As we have seen, this was premised on the assumption that the emergence of a market system was itself a 'natural' occurrence, and thus one that would inevitably serve to bring human societies into harmony with the rest of the natural world. Through his land use model, Smith claimed to have identified the specific mechanism through which this self-equilibrating system would manifest under commercial society – rising prices of declining 'wild' goods would incentivise private landlords and farmers to produce an increasing range of cultivated goods resulting in a logical but self-organised pattern of land use capable of providing for the material needs of the population.

And yet, this imagined self-equilibrating system also hinged on assumptions about the 'natural' operation of commercial society. Smith's theory envisioned a decentralised network of independent producers. But he was only too aware that, in fact, actually-existing commercial society was beset by monopolies – both old, in the form of the great landed estates (Smith 2014 [1776], p. 386), and new, in the form of the joint stock companies that controlled much colonial commerce (Smith 2014 [1776], p. 945). Furthermore, to align the interests of producers and the public would require a perfected legal framing of production – one to which *The Wealth of Nations* was supposed to offer a guide. In a final twist, then, Smith's theory suggested that the promised homeostatic metabolic equilibrium between societies and the earth under commercial society would only be realised when these political barriers had been overcome.

Conclusion

Smith's credentials as an ecological thinker are therefore profoundly ambivalent. On the one hand, he was insistent on the need for political economy to take into account a detailed consideration of the materiality, spatiality and historicity of human subsistence, and indeed pursued lines of analysis that would be taken up by Marx and other thinkers concerned with human-environment relations through to the present day. On the other, his idea that social and natural worlds formed a harmonious, self-equilibrating system encoded what today looks like an extremely dubious set of ecological assumptions within the conclusions of his political economy. In the absence of challenge, such assumptions were tacitly incorporated into the normative foundations of a subsequent liberal theoretical tradition. The conviction that the metabolic relations between humans and the earth would be beneficently directed, and indeed 'improved', by the uninhibited action of markets alone, was taken by later theorists – especially following the influential work of Ricardo – as licensing the premise that market dynamics were therefore, in and of themselves, a sufficient remit for political economy.

Of course, subsequent developments cannot be understood exclusively in theoretical terms. Indeed, one striking aspect of Smith's social ecology is the extent to which it today looks distinctly un-modern. As historical demographer Tony Wrigley (2016: chap. 2) has argued, whilst *The Wealth of Nations* has often been taken to herald a burgeoning Industrial Revolution, in fact Smith's work is better understood as a more-or-less convincing model of the workings of a pre-industrial 'organic economy' – one whose material and energetic limits were prescribed by the annual photosynthetic yield of the available land area. What is clear from Smith's social ecology is that he saw 'commercial society' as an optimisation of this system, but not a transcendence of it. Even as he was writing, however, the seeds were being laid for a yet more dramatic transition: one away from the 'controlled solar energy' regime Smith described, and towards an 'industrial' regime (Haberl *et al.* 2016: chap. 3) no longer constrained by year-to-year plant growth, but harnessing subterranean stores of past photosynthesis in the form of fossil fuels (Sieferle 2001 [1982]).

Recognising this, it might be tempting to infer that Smith is simply less relevant for contemporary political economy than the continued frequent citation of his work would imply. Indeed, one important conclusion to take away from an exploration of his social ecology is that his work seems ill-suited to buttressing claims about the merits of free trade and *laissez-faire* policy today. This is both because of his dubious ecological assumptions, and, perhaps more importantly, because his entire framework was clearly premised on a set of material relations wildly different to those that now pertain in the voracious metabolism of today's global fossil economy. A second, more positive conclusion, however, is that recognising that the birth of political economy as a body of knowledge hinged crucially on a detailed attempt to investigate the relationship between human societies and the nonhuman world, should invite critical reflection on the nature and remit of political economic analysis today. In an age when the scale of human-induced environmental change is becoming an ever more urgent issue, it seems vital to ask whether more can be done by political economists to link the study of economic processes to understandings of the broader systems of life on earth to which they are inextricably tied.

Acknowledgments

I would like to thank Matthew Watson and Stuart Elden for their kind support and feedback. I am also grateful to Clementina Gentile Fusillo for her comments, and to the two anonymous reviewers for their very thoughtful observations and suggestions.

Disclosure Statement

No potential conflict of interest was reported by the author(s).

Notes on contributor

Leo Steeds is currently an Honorary Research Fellow in the Department of Politics and International Studies at the University of Warwick. His research focusses on land, environment, and economic theory.

ORCID

Leo Steeds  <http://orcid.org/0000-0003-3237-1407>

References

- Bailey, D., 2015. The environmental paradox of the welfare state: the dynamics of sustainability. *New political economy*, 20 (6), 793–811.
- Balaam, D.N. and Veseth, M., 2008. *Introduction to international political economy*. 4th ed. International ed. Harlow: Pearson.
- Blaug, M., 1997. *Economic theory in retrospect*. 5th ed. Cambridge: Cambridge University Press.

- Bonnyman, B., 2014. *The third Duke of Buccleuch and Adam Smith: estate management and improvement in Enlightenment Scotland*. Edinburgh: Edinburgh University Press.
- Bookchin, M., 1982. *The ecology of freedom: the emergence and dissolution of hierarchy*. Palo Alto, CA: Cheshire Books.
- Christensen, P., 1991. Driving forces, increasing returns and ecological sustainability. In: R Costanza, ed. *Ecological economics: the science and management of sustainability*. New York: Columbia University Press, 75–87.
- Clarke, C., 2015. *Ethics and economic governance: using Adam Smith to understand the global financial crisis*. London: Routledge.
- Dale, G., 2012. Adam Smith's Green Thumb and Malthus's Three Horsemen: cautionary tales from classical political economy. *Journal of economic issues*, 46 (4), 859–879.
- Davidson, N., 2005. The Scottish Path to capitalist agriculture 3: the Enlightenment as the theory and practice of improvement. *Journal of agrarian change*, 5 (1), 1–72.
- Drayton, R.H., 2000. *Nature's government: science, imperial Britain, and the 'improvement' of the world*. New Haven, CT: Yale University Press.
- Foster, J.B., 2000. *Marx's ecology: materialism and nature*. New York: Monthly Review Press.
- Foster, J.B., 2007. Earth. *Historical materialism*, 15 (3), 255–262.
- Frieden, J.A., 2007. *Global capitalism: its fall and rise in the twentieth century*. New York: W. W. Norton & Company.
- Garnsey, P., 2007. *Thinking about property: from antiquity to the age of revolution*. Cambridge: Cambridge University Press.
- Gilpin, R., 2001. *Global political economy: understanding the international economic order*. Princeton, NJ: Princeton University Press.
- Gómez-Baggethun, E., et al., 2010. The history of ecosystem services in economic theory and practice: from early notions to markets and payment schemes. *Ecological economics*, 69 (6), 1209–1218.
- Grieve, R.H., 2019. 'On Terry Peach's unconvincing "reconsideration" of Adam Smith's theory of value'. *History of political economy*, 51 (4), 753–777.
- Grigg, D., 1979. Sir James Steuart and land use theory: a note. *Scottish geographical magazine*, 95 (2), 108–110.
- Haakonssen, K., 1981. *The science of a legislator: the natural jurisprudence of David Hume and Adam Smith*. Cambridge: Cambridge University Press.
- Haberl, H., et al., ed. 2016. *Social ecology: society-nature relations across time and space*. Switzerland: Springer.
- Harvey, D., 2007. Neoliberalism as creative destruction. *The annals of the American academy of political and social science*, 610, 22–44.
- Heilbroner, R.L., 2000. *The worldly philosophers: the lives, times, and ideas of the great economics thinkers*. London: Penguin Books.
- Hickel, J. and Kallis, G., 2020. Is Green growth possible? *New political economy*, 25 (4), 469–486.
- Hollander, S., 2016 [1992]. *Classical economics*. Toronto: University of Toronto Press.
- Hont, I. and Ignatieff, M., 1983. Needs and justice in the Wealth of Nations: an introductory essay. In: I. Hont and M. Ignatieff, eds. *Wealth and virtue: the shaping of political economy in the Scottish Enlightenment*. Cambridge: Cambridge University Press, 1–44.
- Hornborg, A., 2017. Political ecology and unequal exchange. In: C.L Spash, ed. *Routledge handbook of ecological economics: nature and society*. Abingdon: Routledge, 39–47.
- Jones, P.M., 2016. *Agricultural enlightenment: knowledge, technology, and nature, 1750–1840*. Oxford: Oxford University Press.
- Jonsson, F.A., 2010. Rival ecologies of global commerce: Adam Smith and the natural historians. *The American historical review*, 115 (5), 1342–1363.
- Jonsson, F.A., 2013. *Enlightenment's frontier: the Scottish highlands and the origins of environmentalism*. New Haven, CT: Yale University Press.
- Kirshner, J., 2009. Realist political economy. In: M. Blyth, ed. *Routledge handbook of international political economy (IPE): IPE as a global conversation*. London: Routledge, 36–47.
- Klein, N., 2014. *This changes everything: capitalism vs. the climate*. Toronto, Canada: Random House.
- Linklater, A., 2014. *Owning the earth: the transforming history of land ownership*. London: Bloomsbury.
- Locke, J., 2017 [1689]. *Two treatises of government*. P. Laslett, ed. Cambridge: Cambridge University Press.
- Malm, A., 2015. Exploding in the air: beyond the carbon trail of neoliberal globalisation. In: L. Pradella and T. Marois, eds. *Polarizing development: alternatives to neoliberalism and the crisis*. London: Pluto Press, 108–118.
- Meek, R.L., 1971. Smith, Turgot, and the "four stages" theory. *History of political economy*, 3 (1), 9–27.
- Meek, R.L., 1976. New light on Adam Smith's Glasgow Lectures on jurisprudence. *History of political economy*, 8 (4), 439–477.
- Miller, R.C., 2008. *International political economy: contrasting world views*. Abingdon, Oxon: Routledge.
- Monbiot, G., 2017. *Out of the wreckage: a new politics for an age of crisis*. London: Verso.
- Montesquieu, C., 2000 [1752]. *The Spirit of laws*. Translated by T. Nugent. Kitchener, Canada: Batoche Books.
- Moore, J.W., 2015. *Capitalism in the web of life: ecology and the accumulation of capital*. New York: Verso.
- Palmeri, F., 2016. *State of nature, stages of society: Enlightenment conjectural history and modern social discourse*. New York: Columbia University Press.

- Pauchant, T.C., 2017. Adam Smith's four-stages theory of socio-cultural evolution. In: F. Forman, ed. *The Adam Smith review. volume 9*. London: Routledge, 49–74.
- Peach, T., 2009. Adam Smith and the labor theory of (real) value: a reconsideration. *History of political economy*, 41 (2), 383–406.
- Pettman, R., 1996. *Understanding international political economy: with readings for the fatigued*. Boulder, CO: Lynne Rienner.
- Pocock, J.G.A., 2006. Adam Smith and history. In: K. Haakonssen, ed. *The Cambridge companion to Adam Smith*. Cambridge: Cambridge University Press, 270–287.
- Polanyi, K., 2001 [1944]. *The great transformation: the political and economic origins of our time*. Boston, MA: Beacon Press.
- Ravenhill, J., ed., 2020. *Global political economy*. 6th ed. Oxford: Oxford University Press.
- Ricardo, D., 2004 [1817]. On the principles of political economy and taxation. In: P. Sraffa and M. Dobb, eds. *The works and correspondence of David Ricardo, Vol. 1*. Indianapolis, IN: Liberty Fund, 1–447.
- Roncaglia, A., 2017. *A brief history of economic thought*. Cambridge: Cambridge University Press.
- Salter, J., 2010. Adam Smith and the Grotian theory of property. *The British journal of politics and international relations*, 12 (1), 3–21.
- Samuelson, P.A., 1978. The Canonical Classical model of political economy. *Journal of Economic Literature*, 16 (4), 1415–1434.
- Schabas, M., 2003. Adam Smith's debts to nature. In: M. Schabas and N. De Marchi, eds. *Oeconomies in the age of Newton*. Durham, NC: Duke University Press, 262–281.
- Schabas, M., 2009. *The natural origins of economics*. Chicago: University of Chicago Press.
- Sieferle, R.P., 2001 [1982]. *The subterranean forest: energy systems and the industrial revolution*. Cambridge: White Horse Press.
- Skinner, A.S., 1996. *A system of social science: papers relating to Adam Smith*. Oxford: Oxford University Press.
- Smith, A., 2014 [1759]. *The Glasgow edition of the works and correspondence of Adam Smith. Vol. 1: The theory of moral sentiments*. D.D. Raphael and A.L. Macfie, eds. Oxford: Oxford University Press.
- Smith, A., 2014 [1762]. Lectures on jurisprudence: report of 1762–3. In: R.L. Meek, D.D. Raphael, and P. Stein, eds. *The Glasgow edition of the works and correspondence of Adam Smith. Vol. 5: Lectures on jurisprudence*. Oxford: Oxford University Press, 1–394.
- Smith, A., 2014 [1776]. *The Glasgow edition of the works and correspondence of Adam Smith. Vol. 2: An inquiry into the nature and causes of the wealth of nations*. W.B. Todd, ed. Oxford: Oxford University Press.
- Smith, C., 2020. *Adam Smith*. Cambridge, UK: Polity.
- Stiglitz, J.E., 2006. *Making globalization work*. London: Allen Lane.
- Strange, S., 2015 [1988]. *States and markets*. London: Bloomsbury.
- Thomas, K., 1984. *Man and the natural world: changing attitudes in England 1500-1800*. Harmondsworth: Penguin Books.
- Thompson, E.P., 1982 [1963]. *The making of the English working class*. Harmondsworth: Penguin Books.
- Todd, W.B., 2014 [1976]. Introduction. In: A. Smith, ed. *The Glasgow edition of the works and correspondence of Adam Smith. Vol. 2, An inquiry into the nature and causes of the wealth of nations*. W.B. Todd, ed. Oxford: Oxford University Press, A1–A66.
- Tribe, K., 1978. *Land, labour and economic discourse*. London: Routledge.
- Tribe, K., 1999. Adam Smith: critical theorist? *Journal of economic literature*, 37 (2), 609–632.
- Watson, J.W., 1976. Land use and Adam Smith: a bicentennial note. *Scottish geographical magazine*, 92 (2), 129–134.
- Watson, M., 2005. *Foundations of international political economy*. Basingstoke: Palgrave Macmillan.
- Watson, M., 2018. *The market*. Newcastle upon Tyne: Agenda Publishing.
- Williams, M. and O'Brien, R., 2020. *Global political economy: evolution and dynamics*. London: Macmillan Education UK.
- Winch, D., 1978. *Adam Smith's politics: an essay in historiographic revision*. Cambridge: Cambridge University Press.
- Winch, D., 1997. Adam Smith's problems and ours. *Scottish journal of political economy*, 44 (4), 384–402.
- Worster, D., 1994. *Nature's economy: a history of ecological ideas*. 2nd ed. Cambridge: Cambridge University Press.
- Wrigley, E.A., 2016. *The Path to sustained growth: England's transition from an organic economy to an industrial revolution*. Cambridge: Cambridge University Press.