

MALTHUSIAN MOMENTS: INTRODUCTION*

ALISON BASHFORD 

University of New South Wales, Australia

DUNCAN KELLY

University of Cambridge

AND

SHAILAJA FENNELL

University of Cambridge

I

Since its original publication in 1798, Thomas Robert Malthus's *Essay on the principle of population* has never been out of print, nor has it been out of public discussion. This is not just because of Malthus's theologically and politically controversial thesis, but because the substance of his work touched so many critical issues in the human and natural sciences and continues to do so: good and bad government; equality and inequality; food and agriculture; sex and death; land-use and land-ownership; development trajectories and economic predictions. It is no overstatement to claim that the *Essay on the principle of population* was about the histories and futures of the world, as well as the history and future of Britain: little wonder that it has endured. The 250th anniversary of the political economist's birth saw a suite of Malthus studies appear around 2016, building on a set of revisions in 1998, the bicentennial of the *Essay*'s publication.¹ Yet far from exhausting analysis,

School of Humanities and Languages, University of New South Wales, Morven Brown Building, 243, Sydney, NSW 2052 a.bashford@unsw.edu.au

Centre of Development Studies, University of Cambridge, Alison Richard Building, 7 West Road, Cambridge, CB3 9DT ss141@cam.ac.uk

Department of Politics and International Studies, University of Cambridge, Alison Richard Building, 7 West Road, Cambridge, CB3 9DT djk36@cam.ac.uk

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¹ Robert J. Mayhew, 'Malthus's globalisms: Enlightenment geographical imaginaries and the *Essay on the principle of population*', in Diarmid Finnegan and Jonathan Wright, eds., *Spaces of global knowledge: exhibition, encounter and exchange in an age of empire* (Aldershot, 2015),

this scholarship has ignited further interest in Malthus's political economy of population, its reception and impact over place and time, and its purchase across a range of historiographical traditions.

This special issue brings together the work of economic, intellectual, world, environmental, and British political historians, a spectrum that reflects the breadth of Malthus's own objects of enquiry, and indeed the great scope and import of classical political economy in his lifetime and beyond. Here, we aim to escape the bifurcated pro- and anti-Malthusian stances that have accumulated since 1798. Rather, different questions are posed of Malthus and his famous text, and indeed of his lesser-known ones, for Malthus wrote much more than the *Essay*. His complete opus comes to eight edited volumes, and as John Pullen has long argued, Malthus's *Principles of political economy* should be read alongside the *Essay on the principle of population*, as the second of a two-part project.² By taking stock of the contemporary historical and historiographical transformations about the place of Malthus and his work in a diverse series of debates and questions, a fresh picture of the continuity between Malthusian moments over the long modern period becomes possible. What is the long history of Malthus and development? How did the extra-European world figure in Malthus's own writings? How have different demographic structures in the past been mapped onto types of food production and patterns of rural development? What philosophy of limits governed his own ideas and those of his interlocutors? The articles here show how the political economy of the eighteenth century has been a productive source for the more differentiated set of social sciences that evolved over the nineteenth and twentieth centuries. In particular, it laid an important base for how open and closed systems – economic, ecological, geographical – were to be conceptualized. 'Malthus' remains a shorthand for closed and limited systems and this is perhaps the key to his lasting notoriety.

II

A number of Malthusian moments are analysed in this special issue, from the eighteenth-century demographic, intellectual, and political era that shaped

pp. 167–83; Robert J. Mayhew, ed., *New perspectives on Malthus* (Cambridge, 2016), pp. 105–27; Alison Bashford and Joyce E. Chaplin, *The new worlds of Thomas Robert Malthus: re-reading the principle of population* (Princeton, NJ, 2016). See also Robert J. Mayhew, *Malthus: the life and legacies of an untimely prophet* (Cambridge, MA, 2014). For previous anniversary publications, see John Pullen, 'The last sixty-five years of Malthus scholarship', *History of Political Economy*, 30 (1998), pp. 343–52; Geoffrey Gilbert, ed., *Malthus: critical responses* (4 vols., London, 1998); A. M. C. Waterman, 'Reappraisal of "Malthus the economist", 1933–1997', *History of Political Economy*, 30 (1998), pp. 293–334; David Coleman and Roger Schofield, eds., *The state of population theory: forward from Malthus* (Oxford, 1986).

² Thomas Robert Malthus, *The works of Thomas Robert Malthus*, ed. E. A. Wrigley and David Souden (8 vols., London, 1986); J. M. Pullen, 'Introduction', in T. R. Malthus, *Principles of political economy*, ed. J. M. Pullen, Variorum Edition (2 vols., Cambridge, 1989), 1, pp. 11–69.

Malthus's own thought to the post-Napoleonic era that changed it; from the mid-Victorian reception of Malthus after his death to the early twentieth-century renewal of his ideas in the economics of John Maynard Keynes, and onwards to the mid-twentieth-century apex of global neo-Malthusianism. This collection of articles is geographically expansive as well, following Malthus's vision of a population principle in operation the world over, as in his own England.

A set of these articles focuses squarely on Malthus and European intellectual history. Christopher Brooke analyses the French–English conversation driving the late Enlightenment first edition of the *Essay* that just squeezed into the eighteenth century (1798). Brooke revisits Malthus's association with Rousseau, famously connected through his father. But might we consider Thomas Robert Malthus himself a Rousseauist? Gareth Stedman Jones takes the analysis of Malthus and political economy forward into the nineteenth century, re-examining the socialist reception of Malthus, from Owen to Engels to Marx. He shows how Marx's assessment of Malthus – always critical – nonetheless moderated over time. Brooke's engagement with Stedman Jones's own, earlier account of the rejection of Malthus by post-revolutionary writers, seeking an 'end' to poverty, aims to complicate the picture of Malthus as straightforwardly opposed to Rousseauian principles. Focusing on Malthus's Whig adherence to what might otherwise be termed republican principles, and questioning the binary opposition between Hobbism and Rousseauvianism in eighteenth-century thought, Brooke contextualizes Malthus anew by restructuring what Malthus might have taken from Rousseau's *Discourse on the origins of inequality* more specifically. In a different vein but also focusing on the history of political and economic thought, Duncan Kelly tracks the evolutionary engagement with Malthus from war to peace in the work of John Maynard Keynes. By seeking to signal something about the lessons of Malthus as an economic thinker for a world in which the twin 'evils' of unemployment and population expansion seemed all too real, Keynes returned to classical questions in the history of political economy, about whether competition (for resources and profit, between peoples and between states) was more likely to lead to peace through the mechanics of *doux commerce*, or to war through jealousy of trade. The disembedding of political from economic arguments so prevalent in contemporary economic writings were, he thought, a poor guide to how to proceed, and in this in fact, his ideas were mirrored by another theorist for whom Malthusianism in the form of poor law reform constituted the signal moment in the evolution of economic liberalism, and therefore its self-conscious uncoupling from politics and value, namely Karl Polanyi.

E. A. Wrigley and Richard Smith revisit Malthus's well-known opposition to the old poor law, in his own context. Any allowance to the poor, Malthus argued, interfered with the pressure that poverty placed on sensible and self-

interested decision-making regarding marriage and reproduction. It was ultimately useful and beneficial, Malthus thought, that the threat of poverty encouraged later marriage and thus fewer offspring. But was Malthus's assessment of the effect of the poor law correct in terms of data available to him, or even by data collected later? This is Wrigley and Smith's core question, reassessing a long-standing debate about the poor law's association with high fertility. On evidence available from the 1851 census, they argue that the labouring poor's decisions about marriage were not influenced by the old poor law. Malthus's presumptions, on this measure, were incorrect. Yet Wrigley and Smith also track other reasons for Malthus's ongoing, if moderated, opposition to poor relief. For this political economist, the free operation of the market and individual decision-making always trumped measures for immediate relief, even if this came at some individual cost. The outcome would be better in the end, for whole populations and economies.

Malthus himself considered population and economy far beyond Britain and Europe. Much of his work was geographically expansive, and indeed comparative. For decades professor of political economy at the East India Company College in Haileybury, he could hardly avoid an intercontinental and imperial framing of commerce, wealth, land, labour, and value. Articles here reflect just that, and in new ways. Alison Bashford explores Malthus's interest in Chinese agriculture, population, and commerce, analysing his chapter on China in the *Essay*, written in the immediate aftermath and from the accounts of the Macartney envoy from George III to the Qianlong emperor. Shailaja Fennell takes Malthus to India, carrying forward Malthus's own interest in mid- and late nineteenth-century debate on land and famine. His eagerness for empirical data about food, land, people, and prices in the sub-continent transferred into the Royal Statistical Society, which he co-founded, and to subsequent drives and imperatives for good data on which to base agricultural and population policy in India.

Fabien Locher shifts Malthusian ideas further forward in time – to the mid-twentieth century – and into the sea, exploring high modernity's response to Malthus's political economy of limits. The oceans could provide bountiful food, many continued to argue, even as fish stocks crashed and intergovernmental regulatory measures were implemented, part of a new international environmentalism built on the prospect of Malthusian limits to growth. This mid-twentieth-century international scenario replayed a mid-nineteenth-century domestic debate that Fredrik Albritton Jonsson analyses. It is often claimed that mid-Victorians confidently inhabited and pursued fossil-fuelled economic expansion, convinced of coal's abundance, if not permanence. Yet Jonsson tracks an early cautionary note in the coal story. Even within Malthus's lifetime there was discussion about coal's limits, and while Malthus himself never (or very rarely) considered fossil-based energy, his thesis on fixed and closed systems served to frame energy debates for generations after his death.

III

Commentators often discuss Malthus's awareness of the great economic and demographic change, from an organic and agricultural world towards a fossil-fuelled and manufacturing-based industrial world.³ That he sat on the cusp of systems, on the cusp of change, has long been one of the fascinating attractions for analysts of his life and times. Malthus certainly lived between an agricultural and a manufacturing era, and it is customary to analyse him as bound by a perception only of the former, of an economic *ancien régime*. It is often stated that he could not foresee the great economic development, or the population changes about to unfold, or that were already unfolding but were difficult for him, or perhaps anyone, to assess. And yet we are still refining our understanding of Malthus's own awareness of economic, demographic, and industrial development. Perhaps Malthus was more conscious of change than the customary interpretation suggests? In this regard, Wrigley and Smith track some shifts in his later work, where he wrote clearly about his preference for mixed agricultural–commercial economies, and we know that Malthus followed census data from Britain, Europe, and the United States carefully. Another piece of evidence that Malthus was entirely aware of an economic new world arises in the lecture notes taken by one of his students, the so-called Inverarity manuscript.

These are lecture notes interleaved into a student copy of Smith's *Inquiry into the nature and causes of the wealth of nations* (1776). The *Essay on population* and *Wealth of nations* are usefully paired: across scholarly and vernacular domains, they are perhaps the two most commonly cited and recognizable English-language political economy texts. Until his death in 1834, Malthus taught his students at the East India College political economy almost solely from *Wealth of nations*. Through Smith, Malthus had his students thinking hard about the condition of England, the condition of its colonies, and about the wealth of the East India Company that had become, to some considerable extent, the wealth of the nation. Yet much had unfolded since 1776. After the American and French Revolutions, after Britain's anti-Jacobinism and the Napoleonic Wars, after thirty plus years of cotton manufacturing, the commercial, political, and economic context had changed dramatically. *Wealth of nations* was a dated text from which to teach. However, it is clear that Malthus brought his students up to date, supplementing Smith's eighteenth-century context with his own lecture commentary on contemporary developments. Consider the student's summary of Malthus's views on wages in England and Scotland in the mid-1820s. 'How may it be readily inferred that the wages of labour are in this country not very scanty & that they are more than sufficient to keep up the

³ For organic to fossil fuels, see E. A. Wrigley, *Energy and the English industrial revolution* (Cambridge, 2010); E. A. Wrigley, 'Elegance and experience: Malthus at the bar of history', in Coleman and Schofield, eds., *The state of population theory*, pp. 46–64.

population?’ ‘Ans: Because the population has increased & the manner of living among the labouring classes improved.’

Contrary to popular understanding, for Malthus, population growth by no means automatically correlated to decreased standards of living: rather, it oscillated according to economic circumstances, and was, in some circumstances, an *index* of increased standards of living. But why had population expanded? His student explained:

Malthus says that the great increase of population of late yrs in England & Scotland has been owing to the power of the labouring classes to obtain a greater quantity of food partly by temporary wages in manufactures, partly by the increased use of potatoes, partly by increased employment of women & children, partly by increased parish allowances to families and partly perhaps by a saving in conveniences and luxuries.⁴

Malthus’s own lecture – about manufacturing, about women’s and children’s labour, about working-class prudential savings, about rapid population growth – signal him already moving with very fast-moving times. By the early 1830s, Malthus was cognisant of the economic changes that we know were ushering in a wholly different land economy and imperial and intercontinental commerce, and ever-greater population growth.

Malthus was also on the cusp of another movement that was beginning to unfold in the 1830s, that of the emergence of statistics as an independent discipline in the nineteenth century. This discipline resulted from a new intellectual wave in Europe that regarded it possible to apply new scientific methods devised to examine the natural world to the study of humans. The rapid rise of the interest accorded to statistics is evident in the increase in publication of statistics papers in mathematical journals by the mid-nineteenth century.⁵

The public interest in applying science to understanding human behaviour is also evident in the establishment of the British Association for the Advancement of Science (BAAS) in 1831, with the primary aim of ensuring that science could be discussed and debated by a wide circle of leading figures, including industrialists and social reformers.⁶ The statistical section, designated as ‘Section F’ of the BAAS, was initially proposed at a meeting held on 26 June 1833 at Trinity College, Cambridge, convened by a group of five leading academic figures from the world of mathematics and political economy, namely Richard Jones, Thomas Robert Malthus, Charles Babbage, Adolphe Quetelet, and William

⁴ Inverarity Manuscript, ch. 8, p. 30, question 10, Cambridge University Library, Marshall. c.35. J. D. Inverarity’s copy of Adam Smith, *An inquiry into the nature and causes of the wealth of nations* (Edinburgh, 1829) holds extensive interleaved notes from Malthus’s lectures, comprising questions on the text set by Malthus and his prescribed answers. See also J. M. Pullen, ‘Notes from Malthus: the Inverarity manuscript’, *History of Political Economy*, 13 (1981), pp. 794–811.

⁵ Roland Wagner-Dobler and Jan Berg, ‘Nineteenth-century mathematics in the mirror of its literature: a quantitative approach’, *Historia Mathematica*, 23 (1996), pp. 288–318.

⁶ Eszter Pal, ‘Scientific societies in Victorian England’, *Review of Sociology*, 20 (2014), pp. 85–111.

Whewell. The ostensible reason for the meeting was to bring together an audience to listen to Quetelet's work on statistical budgeting, as the official delegate of the Belgian government, and held in association with the third annual meeting of the BAAS, with the support of Adam Sedgwick, the Woodwardian professor of geology at Cambridge. On the following day, the new section was formally announced to the delegates.⁷

Quetelet was the leading European statistician by the mid-nineteenth century, having published research that drew on his mathematical training, and with the intention of showing that statistics was of utmost importance to understand the variation in demographic and anthropometric characteristics in the human population. He published prodigiously in the early 1830s, and an edition of his collected papers was published as *A treatise of man and the development of his faculties* in 1835. This was translated into English and published in Edinburgh in 1842, turning him into a celebrity in Britain, and resulted in Quetelet becoming a sought-after speaker at statistical meetings.⁸ Another leading statistician, Ernst Engel, who was born in Prussia in the mid-nineteenth century, had initially studied mining. He then travelled abroad and became acquainted with the work of Quetelet while he was on a study visit to Belgium. It was in France that he encountered the practice of using surveys for obtaining household expenditure data, and these academic encounters sparked his interest in the study of statistics. As a young statistician who happened to embark on his career at a time when many European cities were beset by working-class uprisings, Engel was captivated by the possibility that food demands of a furious urban public could topple national governments.⁹ This tendency of food expenditure to increase 'at a geometric rate with a decreasing income'¹⁰ was potentially a source of anxiety in urban contexts where unruly and disgruntled working populations were still growing, and their living standards were not improving. This proposed postulate that a population consumes a greater proportion of its total income as working-class incomes falls draws its logic directly from Malthus's own ideas about population tendencies. It is clear that Engel was deeply influenced by Malthus, as were a large number of European elites and philanthropists who were actively circulating the writings of Malthus as they attempted to find solutions for the growing turbulence in the political sphere in their own societies.¹¹

⁷ Michael Drolet, 'Tocqueville's interest in the social: or how statistics informed his "new science of politics"', *History of European Ideas*, 31 (2005), pp. 451–71.

⁸ Garabed Eknayan, 'Adolphe Quetelet (1796–1874) – the average man and indices and obesity', *Nephrology, Dialysis, Transplantation*, 23 (2008), pp. 47–51.

⁹ Andrea Chai and Alessio Moneta, 'Engel curves', *Journal of Economic Perspectives*, 24 (2010), pp. 225–40.

¹⁰ The original paper written by Engel is quoted on p. 216 of D. Perthel, 'Engel's law revisited', *International Statistical Review*, 4 (1975), pp. 211–12.

¹¹ J. Marc MacDonald, 'Malthus and the philanthropists, 1764–1865: the cultural circulation of political economy, botany and natural knowledge', *Social Sciences*, 6 (2017), pp. 1–33.

Fennell underlines the importance of this new ‘statistical movement’ gaining momentum across Europe and also its implications for the study of agriculture in Victorian Britain, where India’s agricultural problem had pride of place. The initiatives to develop statistical databases was led by the growing middle classes, in their bid to develop a lay understanding of the relationship between science and everyday life. She draws on the growing interests in the conditions of life of populations, disaggregated by gender, age, and location, through an examination of Malthus’s own keen interest in the collection of empirical data as a founding member of the British Statistical Society. The keen interest of this new breed of statisticians was to develop methods to analyse the observable variation in the key characteristics of human populations – a system that was based on inductive principles of study. This inductive approach to human behaviour is far closer to social science than to physical sciences, and both Whewell and Jones regarded Malthus’s own work on collective empirical evidence to understand how characteristics of population varied across different classes in society as crucial for developing an open system of analysis.¹² In contrast, the older mathematical system of analysis in place at the start of the nineteenth century had emphasized the need to focus on deductive methods to review established relations – effectively using a closed system of analysis. Malthus was a primary contributor to this intellectual turn, as he recast his work away from his early construction of postulates regarding the inevitability of national collapse due to the inexorable tendency for population to increase in a geometric progress, towards an increasingly global enquiry about the lives and conditions of populations in different countries and classes.

The ‘condition of England’ problem was named in 1839, four years after Malthus’s death, but of course his object of enquiry had been the condition of England all along. His own interventions, crucially including disagreement with David Ricardo, shaped early and mid-Victorian social policy very strongly indeed. Malthus died in a momentous year, in this respect (1834). Slavery was abolished in the British empire, a policy that Malthus probably agreed with, but on which he abstained from public comment.¹³ By contrast, 1834 saw the Poor Law Amendment Act passed, a field of policy in which he was directly implicated, and had much to say.¹⁴ Malthus’s insistence that there would always be some poor without enough food, necessarily some who will not find their place at the table (although he always thought this could and should be mitigated, and he quickly dropped this image), had long been offensive to theologians, for whom providential doctrine was being crossed. It seemed inconceivable from the pen of a clergyman, even or perhaps especially one raised in

¹² Lawrence Goldman, ‘The origins of British “social science”: political economy, natural science and statistics’, *Historical Journal*, 26 (1983), pp. 587–616.

¹³ For Malthus, the slave trade, slavery, and abolition, see Bashford and Chaplin, *The new worlds of Thomas Robert Malthus*, ch. 6.

¹⁴ Donald Winch, *Riches and poverty: an intellectual history of political economy in Britain, 1750–1834* (Cambridge, 1996).

dissenting circles, as Malthus was.¹⁵ It also offended early nineteenth-century socialists, particularly the Owenites, as Gareth Stedman Jones sets out. The socialist and later Marxian critique of political economy had a critique of Malthus at its core. As Stedman Jones reckons, over one fifth of Engels's *Critique of political economy* (1843) was a concerted critique of Malthus, the argument that Marx then took up.

The Marxian version of Malthus – the presumption that he was aligned with the interests of the ruling classes and that he considered ‘nature’ an unmediated determining factor – have survived in popular anti-Malthusianism. But they are both difficult propositions to sustain in the light of Malthus's whole opus. His famous preventive checks on fertility and positive checks on mortality are still often restated as the operation of pure nature, as biological determinants, and as if they were simple to conceptualize, describe, and analyse, both for Malthus and for his scores of subsequent interlocutors. In fact, for Malthus there was a vast array of social practices and modes of governance that could, and did, affect fertility, mortality, and food production, a spectrum that he documented in great detail. This included strident critique of ruling-class luxury and wasted land practices. He did so precisely because he believed that poverty could be mitigated by what he considered good governance. Reforming land laws in Ireland, for example, could and should lift the standard of living of Irish peasants, though never for all, in Malthus's thesis. English colonization of Ireland was causally related to Irish poverty, Malthus wrote, outraged. And civil liberties in the United States, as well as land availability, had contributed to its healthy population growth, he claimed. In such ways, even if Malthus's version of good governance differed from that of socialists and republicans (it certainly did), the point is that the popular reduction of Malthus's thesis to the operations of unmediated nature, from Marx forward, is insufficient and thin. For better or worse, Malthus's moral economy presumed the need for governmental responses *to* Nature, every bit as much as government *by* Nature.

The radical and early socialist critique of Malthus reverted to a moralized language of natural right and the moral effrontery of poverty in the face of plenty, drawn from a longer lineage of both juristic writers in the early modern history of political thought such as Pufendorf and Grotius, a sense of the common property of land and labour whether in Lockean or Hebraic form, as well as Greek republican arguments reconstructed through Plato and Aristotle.¹⁶ But it was clear that the fixed co-ordinates of the organic economy were succumbing

¹⁵ For Malthus and Christian politics, see Boyd Hilton, *The age of atonement: the influence of Evangelicalism on social and economic thought, 1785–1865* (Oxford, 1988). For recent analysis of Malthus's theology and moral philosophy, see Sergio Cremaschi, *Utilitarianism and Malthus's virtue ethics: respectable, virtuous and happy* (London, 2014).

¹⁶ Eric Nelson, *The Greek tradition in republican thought* (Cambridge, 206); Eric Nelson, *The Hebrew republic* (Cambridge, MA, 2011), esp. pp. 138ff; Gareth Stedman Jones, *An end to poverty?* (London, 2004), esp. chs. 5–6; Gregory Claeys, *Citizens and saints: politics and anti-politics*

to changes on a scale and pace that Malthus could not have foreseen, even if he knew change was afoot, and which in turn signalled one of the reasons not only for the elaboration of such schemes to end poverty from early socialist responses to his texts, but also for the sort of technological and social development that offered new paths through apparently insoluble economic dilemmas.

IV

Malthus characteristically presumed and described closed systems. At the most fundamental level, he saw a geographically finite world in which food-growing land was limited, even if uncultivated land was still extensive. The metaphorical as well as empirical description of open and closed worlds, connected with evolving ideas of open and closed economies. Territorially, the world was a finite space, full of various but also finite smaller spaces in the form of states. This precluded the possibility of indefinite expansion, particularly when aligned to the force of various checks on the ratios between subsistence to population. Alison Bashford argues that an important element of Malthus's interest in China was its exemplary status as a geographically, economically, and agriculturally closed polity and economy, if a large one. At a time when the British government, the East India Company, and multiple other trading powers then operating in the Pacific region willed and pressed the Chinese emperor to open his borders to international commerce, Malthus remained interested in the empire's closed status. For him, Bashford argues, China was an interesting economic world precisely because it was so reliably contained between the Great Wall and the Pacific Ocean. It served as an exemplar of a region that had long been fully cultivated and fully populated, and thus, for Malthus, the opposite of North America. Bashford argues that the common interpretation that Malthus's treatment of China represented an early East/West comparison of fertility and mortality patterns, misses the point. For Malthus, China and Britain were agriculturally and geographically (if not economically) similar, and both were entirely different to North America.

Malthus typically projected far into the future, warning that even vast North America would eventually be fully cultivated, its carrying capacity met. Many of his earliest critics, however, saw no such limits, repeatedly cataloguing the lands of the world that might be brought quickly into cultivation, easily improved, so they thought, to provide for growing populations. This version of potential for growth quickly became a stock response. Certainly in the new world, but even in Ireland, some retorted, there was waste land ready to be improved. Malthus's premise of confined space seemed empirically thin in an era of rapid colonization and agricultural expansion on all continents. And yet by the end of the nineteenth century, just such limits were being pronounced. The North

in early British socialism (Cambridge, 2010); Gregory Claeys, *Machinery, money, and the millennium: from moral economy to socialism, 1815–1860* (Princeton, NJ, 1987).

American frontier was closing, announced Frederick Jackson Turner in 1893, and only a generation later John Maynard Keynes perceived that nineteenth-century economic growth was a one-off, non-repeatable global phenomenon, a result of, and dependent on, the sudden rush to cultivate American lands.¹⁷

The Malthusian world was always in some sense closed. But within global enclosure, various forms of openness remained. Forms of international free trade offered solutions to military or political attempts to close down economic advantage. The Napoleonic blockade and its aftermath, for example, constituted one attempt to close an open world of trade for the purposes of national advantage. Against this, Malthus chose to envisage a world perpetually open to the possibilities of advantage through commerce, but which was perennially threatened by the instabilities of natural and institutional imbalance, as well as artificial closure through political and military competition. In line with the teachings of Adam Smith, if balanced growth in a stable international and closed system had been knocked off kilter for some time, the question of what degree of economic openness to maintain in a world of closed political states remained the pressing issue for both.

Yet where Smith had pursued something akin to an international political economy of emulation based on maximizing free trade and living with inequality so long as everyone was getting richer, and Rousseau had hoped for balanced economic growth under a small state, to the extent that he followed Smith, Malthus sought a more or less experimental and pragmatic approach to the question of how to determine 'effective' demand, particularly in the aftermath of economic crisis and depression. That meant determining a balance between closed economic protection (the corn laws) and open economic competition (free trade). It was from such foundations that the wider contours of such obtuse-sounding constructions as 'free-trade imperialism' could be conceptualized in the nineteenth century, where free trade was never just a signal for economic openness, while imperialism meant expansion and conquest in a very closed sense for subject populations, but was considerably more open from the vantage point of imperial metropolises. Within those perspectives, ideas of closed racial and civilizational hierarchies lay behind the contrasting idea of an open, liberal political ecology as well as economy that could buttress the rise of such imperial projects.

The numerous, often dynamic relationships that were posited between an open and a closed economy structured the rise of a modern science of political economy in the first place. For this, in fact, was something that later writers who saw themselves as heirs to such a tradition, like Jevons or Keynes, for example, developed in their own thinking. Whether modern economic growth in a finite or closed world could be rendered perpetual through the cornucopia of natural resource abundance, or whether in fact resource depletion signalled another

¹⁷ Alison Bashford, *Global population: history, geopolitics, and life on Earth* (New York, NY, 2014), ch. 1; Bashford and Chaplin, *The new worlds of Thomas Robert Malthus*, pp. 3–4.

dimension of a closed system within which finite political economies had to calculate, suggests yet another way in which the Malthusian moments of openness and closure reverberated. For Jevons, as Jonsson analyses, the issue was coal. For Keynes, as Kelly suggests, a much more human problem of unemployment was at stake. For both, uncertainty about the degree of openness or closure that successful crisis avoidance required at the least signalled a need for epistemological modesty in the face of such uncertainty. Nevertheless, the technicalities of much nineteenth-century political economy have fixed upon an approach to the subject whereby the interdependent world of abundant energy particles moving openly and then being constrained according the maxims of modern physics was rendered analogous in the economic realm. Questions of value, utility, and indifference, stasis or abundance, took on a sort of spectral quality, subsumed as technical questions of calculation within a natural but also naturally closed intellectual system of knowledge production. The laws governing motion, friction, and surface appearance were far from obvious, but could be known. In turn, these forms of knowledge suggested certain economic responses. Did unnatural or artificial political intervention into such closed physical systems lead necessarily either to increasingly complex worlds of planning (things would evolve towards socialism) or to an increasingly laissez-faire world of political detachment from economics (things would evolve into a purer form of economic liberalism, or governmentality). In modern microeconomics, of course, the closure of the economic system and its attendant stylized picture of *homo economicus* was precisely calibrated to abstract away from the messiness of real political economy, to try and delineate what a model of perfectly rational and competitive markets might even look like, and what sorts of assumptions about openness would have to pertain if another evolution in the closed system of economic theorizing would make sense.

In Keynes's writing, of course, the metaphors of the open and closed economy seem to have a much worldlier dimension, and in part, this is because his sense of the open and closed world of modern political economy were formed with a continuous recourse back to Malthus. He did so not only to free himself from the closed worlds of modern economic theory, but also to remind himself of a series of practical problems facing, or better limiting, open or free-trading economic internationalism. Those practical problems of population, migration, and subsistence were dramatically present in his thinking during the First World War, its immediate aftermath, and then again in the early 1930s. Each time, his recourse to Malthus as the 'first Cambridge economist' prompted a thought about the ways in which an open economic world of nineteenth-century free trade was threatened anew by particular forms of closure. First, population growth in Europe and reliance upon imports of food in Britain particularly signalled a change from an open to a closed world as the twentieth century emerged, and which hardened quickly into national forms of animosity amid war and conflict. Second, that the solution to these political closures was a pragmatic attempt to reopen earlier

economic worlds, in order to secure the benefits of free trade for all. Finally, Keynes flirted with the thought that economic internationalism had been sunk by the rise of economic and political nationalism, the rational response to which was to seek to increase national self-sufficiency. That is, to think about closing oneself off from the international economy, in order better to survive its ravages.

Malthus's ideas were renewed in the internationalism of the post-Second World War era, alongside ideas about intergenerational justice and environmentalism. This is what Thomas Robertson calls *the Malthusian moment*, linking it to the birth of American environmentalism.¹⁸ Malthusian ideas manifested as a renewed catastrophism about population growth and food insecurity that culminated not just in political and economic debate, demographic transition theories, and activism, but eventually in policy and, in many polities, implemented programmes to reduce fertility. Fabien Locher's article details the renewed viability of Malthus's thesis in the 'global commons' debates of that era, and in recognition of the depletion of the food supplies of the oceans. The very phrase 'limits to growth' gained a popular and political purchase, even as 'social limits' to growth affected Western democracies.¹⁹ Population was at the heart of theories of development as they emerged in the middle of the twentieth century, central to the invention of the Third World (a term we receive from a demographer), and of long-standing comparisons between East and West, later figured as the global north and south. Shailaja Fennell's article shows that the interest of Malthus and the other co-founders of the British Statistical Society, in shifting from a deductive to an inductive approach to the analysis of demographic data, provided the antecedents for a new line of comparative studies both across European countries, and even towards a 'global' turn in the study of population in developing countries in the twentieth century.

Tension was rife in public discussion then, just as it is now in a post-recessionary, climate-changed age. Will or can planet Earth sustain a population of ten billion or more people without recourse to Malthusian natural theology or environmental disaster? Such questions await their own answers, but it seems certain that a great many Malthusian moments will continue into any recognizably human future. His thinking remains very much a living presence.

¹⁸ Thomas Robertson, *The Malthusian moment: global population growth and the birth of American environmentalism* (New Brunswick, NJ, 2012).

¹⁹ Paul Ehrlich, *The population bomb* (Stanford, CA, 1968); Fred Hirsch, *Social limits to growth* (Cambridge, MA, 1976); Matthew Connelly, *Fatal misconception: the struggle to control world population* (Cambridge, MA, 2010); Bashford, *Global population*, chs. 10–12; Danny Dorling, *Population 10 billion* (London, 2013). See also Samuel Moyn, 'The political origins of global justice', in M. O'Brien, J. Isaac, J. Kloppenborg, and J. Ratner-Rosenhagen, eds., *Worlds of American intellectual history* (Oxford, 2017), pp. 133–54.