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MALTHUS, STATISTICS, AND THE STATE OF INDIAN AGRICULTURE

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ABSTRACT. *References to Malthus are increasingly evident in narratives of agricultural trends in development discourse at the end of the twentieth century. This article addresses the long roots of Malthusian thinking in formulating public policy, that can be traced across from Malthus's own ideas and to subsequent construction of neo-Malthusianisms in the nineteenth and twentieth centuries. It deploys the distinction between two approaches to statistical data collection that emerge in Malthus's own time: an 'open' system that collects data to identify trends, and a 'closed' system that uses data to prove an existing model. The article uses these distinctions in order to demonstrate opposing tendencies in policy-making in both England and India, with particular reference to Indian agriculture. It shows how radical thinking about data collection as an inductive line of enquiry lost out to a deductive approach that regarded data on Indian agriculture as doomed, because of its 'unimproved' condition, and highlights three moments where opposing tendencies were important. The article concludes that this turn in thinking about food, land, and people continues to persist in agricultural policy-making in international development circles into the present.*

I

Neo-Malthusianism figures prominently as an ideological construct that undergirds development theory emerging in the post-Second World War era.[1] These twentieth-century reformulations of the Malthusian principle that population growth will outrun food production, resulting in a failing agricultural sector, continue to be an explanation in international political economy formulations of the reasons that poor countries are unable to embark on successful development strategies. They also point to the continued power of the Malthusian

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[1] There is a new wave of scholarship on the influential role of neo-Malthusianism in fashioning the direction that was taken by development policies over the course of the twentieth century: see Daniel Immewahr, *Thinking small: the United States and lure of community development* (Cambridge, MA, 2014); Marc Frey, 'Neo-Malthusianism and development: shifting interpretations of a contested paradigm', *Journal of Global History*, 6 (2011), pp. 75–97; Adam Lerner, 'Political neo-Malthusianism and the progression of India's Green Revolution', *Journal of Contemporary Asia*, 48 (2018), pp. 485–507.

principle in policy circles, where harking back to this postulate and its potential to unleash hunger and death endows policy-makers with the authority to shape and direct agricultural policy in developing countries.[2] These recent contributions in the field of international development serve as a timely reminder of the continued sway of Malthus in formulating public policy: beginning with Malthus's own ideas, these ideas spread through a subsequent construction of Malthusianism and later neo-Malthusianism that became vital in thinking about development policy.[3] In the case of India, Malthusian notions have generated a pall that has hung over the identification of the cause of meagre economic conditions in the country for the last two centuries. The long-standing view that Indian agriculture epitomizes Malthusian tendencies, where the economic condition of a country is attributable to the inability of food supply to keep up with the rate of population growth, could be overturned by recent fresh thinking in international development that distinguishes between Malthus's own ideas and the political economy motivation of subsequent Malthusianism in later centuries.[4]

Recent compilations on Malthus hold rich intellectual promise in improving our understanding of Malthus, and a particularly valuable formulation is provided by Wrigley's depiction of Malthus as a man 'between two worlds' that permits an examination of the production and reception of Malthus's own ideas both at home and in other geographies.[5] By drawing our attention to how Malthus's ideas were received in different countries, it also opens up for us the distinction between a 'national' and 'global' Malthus, the former referring to the reception of Malthus's ideas in England and the latter to how Malthus himself viewed other countries and his ideas were regarded in these other geographies. A second promising line of scholarship on Malthus that makes the case for distinguishing between Malthus's own ideas in his own

[2] Benjamin R. Siegel, *Hungry nation: food, famine and the making of modern India* (Cambridge, 2018).

[3] The terms Malthusian and neo-Malthusian are being used in this article, where Malthusian denotes the arguments on food and population that emerged during the nineteenth century as a direct outcome of the circulation of Malthus's own work during his own lifetime and in the subsequent decades, while neo-Malthusian is used to denote the use of arguments in the twentieth century that resurrect the original ideas of Malthus to promote their own concerns regarding the destructive power of population to overrun food supplies and destroy natural resources.

[4] There is a more discerning gaze that regards human beings as being the primary agents for change rather than as a primary tendency of the natural world. This would position thinking away from the inevitability of the gloom of hunger and death within a nation to an examination of Malthus's writings as a harbinger of new ideas on population and resources in the Anthropocene, where the Malthusian principle is examined as an intellectual device to understand the impact of humans on natural resources rather than an inevitable harbinger of doom.

[5] Alison Bashford and Joyce E. Chaplin use Wrigley's original characterization of Malthus as 'standing between two worlds' to create a new and exciting turn that provides an avenue to examine Malthus's writings on the New World. See Alison Bashford and Joyce E. Chaplin, *The New Worlds of Thomas Robert Malthus: rereading the Principle of population* (Princeton, NJ, 2016), p. 105.

time and the Malthusian peaks in subsequent centuries is found in contributions by Mayhew, of delineating 'two scales'; the smaller scale of Malthus's own ideas located in his time and the larger scale etched against the Malthusian peaks in later centuries.[6] Mayhew's differentiation of aspects of Malthus's own writings and ideas using the distinction of the smaller and the larger scale is a device similar to that created by Bashford and Chaplin in their examination of Malthus in the Old and New Worlds in that they both open up the possibility of exploring the global imaginaries that draw their origin from ideas that emerge from Malthus's writings and thinking. The imagery of 'two worlds' facilitates an examination of how Malthus looked at, and was looked at, across different geographies, while the conjuring up of 'two scales' makes it admissible to examine Malthus's ideas and their reception within the national and the global.

There is a third opportunity to further our ability to understand Malthus's ideas in his own time and of later Malthusian thinking, through an examination of the methods used to study the relationship between food, land, and population. We know that Malthus's own emphasis on the difference between preventively checked and positively checked societies was crucial to distinguish modern societies from more primitive ones. Unpicking the mechanisms of analysis adopted by Malthus, it is evident that while designing and establishing a theoretical model between food and population was the central feature in the first edition of the *Principle of population*, there is a shift towards a search for empirical data to examine the validity of his ideas over the next three decades.[7] This shift in Malthus's own thinking also underscores a growing recognition among intellectuals of the need for empirical data to understand phenomena in the empire giving rise to 'empirical globalism', the practices of collection of evidence in the early nineteenth century.[8] The difference between theory-driven and empirically motivated intellectual examination of society is that the former is a closed system that focuses on a well-defined, even binary relationship between population and food, while the latter is an open system that examines a less clear-cut and consequently more complex relationship between population and

[6] Robert Mayhew, ed., *New perspectives on Malthus: 250th anniversary essays* (Cambridge, 2016), provides a review of new lines of thinking that provide surprising evidence of the reasons for the extreme reaction to Malthus in his own time, as well as new arguments that point to evidence of the remarkable continued impact of Malthusian ideas in the three centuries since the publication of the *Principle of population*. In Mayhew's own introduction titled 'Alps on Alps', pp. 1–21, he identifies two scales with which to examine Malthus: the smaller scale where the publication and the reception of his work was first evident in England, and the larger scale of the national and international landscape where the bigger peaks of Malthusian scholarship can be identified (p. 2).

[7] Robert Mayhew, 'Malthus's globalisms: Enlightenment geographical imaginaries in the Essay on the principle of population', in Diarmid A. Finnegan and Jonathan Jeffrey Wright, eds., *Spaces and global knowledge: exhibition, encounter and exchange in the age of empire* (London, 2015), where the importance of empiricism in the later editions of Malthus is highlighted.

[8] Ibid., p. 14.

natural resource systems.[9] The rising tide of statistics and its relation to 'national' and 'global' in Malthus's own life and the global imaginaries in later periods could help us to unpick why there has been a long-term tendency to regard population and agriculture in India since the eighteenth century as destined for human starvation and physical ruin.

This article co-locates Malthus, statistics, and the characterization of Indian agriculture by identifying the oppositional tendencies in whether to adopt a closed or open approach to the relationship between population and food supply and its importance for the particular constructions of 'national' and 'global' Malthus, by public figures engaged in policy-making in India over the past three centuries.[10] In this article, Malthusian is used to describe ideas that emerged during the nineteenth century as a direct outcome of the circulation of Malthus's own ideas; and the term neo-Malthusian for denoting arguments propounded in later centuries that resurrect the original ideas of Malthus to promote their own concerns regarding the destructive power of population to overrun food supplies and destroy natural resources. India figures prominently among the Malthusianism peaks of the nineteenth century, with the 'famines of Indostan' espoused by British officials in India who saw the rising population growth in British India through the nineteenth century as a consequence of the culture – for example, India's tendency towards early marriage and high birth rates – rather than the outcome of British policies in India.[11] By the early twentieth century, neo-Malthusian thinking abounded in India, as both international organizations as well as Indian elites regarded rapidly increasing population alongside growing food shortages with increasing concern.[12]

Bringing together themes of closed and open approaches to the relationship between food and population, alongside the importance of geographies of 'national' and 'global' Malthus, makes it possible to investigate how public figures variously understood the role of land, food, and people in the making and remaking of Indian agricultural policy. These opposing tendencies provide the important Malthusian moments around which this article is written, and it builds on the ideas developed in Bashford's wide-reaching and

[9] The Mayhewian distinction from the smaller scale of Malthus's own stage of engagement to the larger scale of Malthusian ideas regards this as part of the larger shift from theory to empirical investigation at the beginning of the nineteenth century.

[10] Julian Simon, *Population matters: people, resources, environment and immigration* (New Brunswick, NJ, 1990), identifies the decided preference for closed systems of population. Malthus's diminishing returns fits into such a system with the implications that resources are finite. Closed systems also focus on the manipulation of statistics to correspond to an established theory. In contrast, an open system is based on the presumption that the resource base will grow over time and therefore limits are expandable. It, consequently, focuses on identifying patterns in an expanding resource frame (pp. 465–8).

[11] Samantha Iyer, 'Colonial population and the idea of development', *Comparative Studies in Society and History*, 55 (2013), pp. 65–91.

[12] Pulin Nayak, 'Planning and social transformation: remembering D. P. Dhar as a social planner', *Indian Economic Review*, 50 (2015), pp. 317–34.

richly detailed *Global population*, that shows that the intentions of neo-Malthusian enthusiasts had more to do with concerns of their own times than with Malthus's original understanding of the relationship between food and population.[13] The first oppositional tendency investigated is between Malthus's own pursuit of empirical data through the new statistical societies and its contention with a closed approach, both of which advanced the case for data collection through surveys to assist in making statistically informed public policy.[14] The second oppositional stance examined lies in an emerging divergence regarding the logic of Malthusian thinking that is prevalent among English public officials; between those who regarded the relationship between population as a closed approach and determination to use the model to maximize revenues from land; contrasted with those imbued with a radical approach, eager to learn more about India and to investigate statistical data collection on population. The third oppositional tendency is located in the early twentieth century, evident among political figures in India and professional opinions about India, with neo-Malthusian models emerging with regard to how agriculture could find the wherewithal to feed a large Indian population embarking on a rapid industrialization strategy and the American models that regarded the need for aid to support India to produce more food to overcome the spectre of hunger. These opposing tendencies, located across three centuries, continue to have an impact on policy-making in the first decades of Indian planning.

II

In Malthus's own time, his principle on the relationship between population growth and food supply drew both brickbats and bouquets, as his contemporaries regarded the implications of his 'checks' for the future of society in England and then further afield.[15] Malthus did not only stand between two worlds but also on the threshold separating two approaches: a closed method necessary to uphold the validity of his principle by accessing new sources of material that detailed the population growth rates in different countries of the

[13] Alison Bashford, *Global population: history, geopolitics and life on Earth* (New York, NY, 2014).

[14] These notions of 'global' and 'national' can be either closed or open systems, and the distinction would be on whether the approach was to regard resources as fixed or expanding. The presence of both the 'closed' and 'open' systems are evident in the 'national' Malthus; the larger professional milieu within which Malthus worked and lived in with the scientific community in England, with one group increasingly drawn to the notions of Political Arithmetic to establish a greater influence on the public sphere and control society with its theoretical formulations while another group was concerned with obtaining statistical theories to understand the workings of society.

[15] [Thomas Robert Malthus], *An essay on the principle of population* (London, 1798), p. 113; Thomas Jarrold, *Dissertations on man, philosophical, physiological and political: in answer to Mr. Malthus's 'Essay on the principle of population'* (London, 1804), p. 179.

world;[16] and an open system that would allow statistical data to become the basis for new thinking and theories on population and resources in other societies.

It was clear that Malthus's publication of the *Principle of population* was not immediately welcomed widely; indeed, it resulted in sharp rebuttals, published in scholarly journals and magazines, of his proposed relationships between land, labour, life, and death. His interlocuters were besieged by worries that were raised by his predictions about population trends in the first edition in 1798, particularly the fear of high food prices, and these grew to an onslaught of criticisms after the publication of the second edition in 1803, focusing on the implications of his theory for the existing social practices, especially the poor law regarded at the time as a public mechanism to control the population of early nineteenth-century Britain. The volume and acerbity of the responses resulted in Malthus's subsequent reluctance to engage in the public sphere: he refrained from responding to the published criticisms till the last decade of his life.[17] Malthus did not, however, stop working on methods for improving the statistical basis of his treatise on population growth. He appeared to avail of professional and personal networks, during the last few years of his life, to seek out new data, largely because he sought further corroboration of his proposition that population expanded as a geometric progression, while food production increased in the form of an arithmetic progression. The professional route was through the learned societies of his time that were keen to increase their influence by using large datasets to influence public policy, while the personal correspondence took place through private letters to his erstwhile students from Haileybury College, then serving in India as officers of the East India Company.[18] Untangling how the global' and 'national' Malthus relate to the 'two approaches' of open and closed systems of thinking in Malthus's own work opens up avenues to understanding the role of statistics and data collection in challenging the intellectual currents of his times. Exploring the importance that Malthus increasingly accorded to the collection of data, and how it was received by his contemporaries and students, is undertaken through examining the appetite for a statistical approach in the public debate on policy-making in England and also how these ideas were construed by those officers in the

[16] Bashford and Chaplin, *The New Worlds of Thomas Robert Malthus*.

[17] The *Edinburgh Review* appears to have taken up a position that was oppositional to Malthus's treatise, with the second edition triggering an onslaught of critical responses, that continued till the very last years of his life. See Sergio Cremanschi, *Utilitarianism and Malthus's virtue ethics: respectable, virtuous and happy* (London and New York, NY, 2014); and James Huzel, *The popularisation of Malthus in early nineteenth-century England: Martineau, Cobbett and the pauper press* (Aldershot, 2006). A review of the value of considering these reactions to Malthus is collated and edited by Robert Mayhew, *Malthus: the life and legacies of an untimely prophet* (Cambridge, MA, 2015), pp. 128–55.

[18] Haileybury College, in Hertfordshire, was the official training college for recruits to the East India Company between 1805 and 1858. Malthus was appointed the professor of history and political economy in 1805 and resided there till his death in 1834.

East India Company who considered statistics increasingly important for the colonial administrative apparatus further afield in India.[19]

The academic world inhabited by Malthus was one which exhibited an increasing commitment to finding data to confirm scientific hypotheses, and among its key advocates were doctors, commissioners, and investigators who collected societal information with a view to convincing parliament of the need for public reforms to avert social unrest.[20] These leading professionals agreed that their common purpose would be best served by setting up statistical associations in England, so that they could propose policies for ensuring social order emerging from the analysis of statistical information that they could generate and present as full members of these associations.[21] The British Association for the Advancement of Science, the first of these associations, had been established in 1831, and Malthus attended the third meeting of the Association held in Cambridge in summer of 1833, where Charles Babbage chaired a fourteen member committee that proposed and was successful in establishing a new Section F for Statistics within the Association.[22] It was Babbage's intention to create a Section and direct its activities to provide a channel by which to collect and use statistical facts for influencing government policy-making. Led by a Cambridge group of Malthus, William Whewell, and Richard Jones, the committee passed the founding resolution that explicitly states the Section's purpose as 'the collection and classification of all facts illustrative of the present condition and prospects of society'.[23] Babbage had engineered the presence of leading public figures at the meeting, having invited and ensured that Adolphe Quetelet, the leading statistician in Europe, was present in his capacity as the official Belgian delegate, to provide international support for the new Section.[24] Babbage also invited prominent officials in the government and the East India Company to be part of the original committee: and John Elliot Drinkwater, a civil servant, and Colonel Henry William Sykes, a former statistical reporter for the East India Company, agreed to be members and

[19] Bernard Cohn identifies the importance of Political Arithmetic in the design of Instrumentalities of Rule in the early nineteenth century. See Cohn, *Colonialism and forms of knowledge*, pp. 1–13, reprinted in *The Bernard Cohn omnibus* (Oxford and New Delhi, 2004).

[20] Jon Agar, *The government machine* (Cambridge, MA, 2003), pp. 77–8.

[21] Ibid., in the sub-section on non-official and official statistics, 1832–1914, Agar indicated that the Manchester Statistical Society was the first association and was established in 1833, with the Statistical Society of London following quick on its heels, set up in 1834. The latter was renamed the Royal Statistical Society in 1886–7.

[22] Patricia James, *Population Malthus: his life and times* (London, 1979), pp. 444–5.

[23] Ibid., p. 449.

[24] Victor L. Hilts, 'Aliis extrendum, or, the origins of the Statistical Society of London', *Isis*, 69 (1978), pp. 21–43, refers to Malthus making a formal motion at a meeting with Babbage, Jones, and Drinkwater in Cambridge in February 1834, at Babbage's instigation, and for the purpose of scheduling the first official meeting of the new society. It was clear from the motion that Malthus was proposing 'the collection and classification of all facts illustrative of the present condition and prospects of society' (p. 35), and the motion was seconded by Jones.

were willing to vouch for the value of statistical facts in public life.[25] Quetelet, who was best acquainted with Malthus among the fourteen members of the committee, recounts a conversation between them during this 1833 visit to Cambridge: Malthus handed Quetelet a survey that he had designed for collecting population data, and pressed him to administer the survey in Brussels and return the completed questionnaire to him.[26]

The members of this new Section commenced their first meeting with a set of papers on statistical data collection, including a paper on Indian statistics by Colonel Sykes on the Population Returns of the Four Collectorates of the Deccan.[27] At this meeting, Malthus is likely also to have had an exchange with Sykes,[28] who had returned to England after his retirement in 1833. He would have seen the data on land and labour collected by Sykes, when he was statistical reporter from 1824 to 1829,[29] and subsequently published in various volumes of the *Journals of the Statistical Society* and of the Asiatic Society of Bengal.[30] Malthus's pursuit of leading professionals and officials for population data from other lands, both in Europe and in the colonies, underscores the emergence of a 'global' Malthus. While Malthus was increasing his search for data to understand people and food availability in other geographies, other

[25] Agar, *The government machine*, p. 78. The presence of the eminent Belgian statistician Lambert Adolphe Jacques Quetelet gave Charles Babbage an excuse to break the rules. Without seeking any sanction, Babbage announced the existence of an extra section of the British Association – a section devoted to statistics. A small gathering was held, with Thomas Malthus in the chair, and Quetelet as the star guest. Babbage packed it with allies, including Richard Jones (a professor of political economy at King's College, London), John Elliot Drinkwater (a Home Office civil servant), and William Henry Sykes (a former statistical reporter to the government at Bombay). All these men were liberal in politics, and both Jones and Sykes had special interest (and, in Sykes's case, experience) of statistics collected through the Indian civil service. Babbage's intention, with his own failed attempt at election as a member of parliament fresh in his mind, was that scientists should exert influence on government through production of statistical facts.

[26] Hilts, 'Aliis extrendum', cites Quetelet's correspondence where Quetelet mentions the conversation with Malthus during the course of which Malthus provided him a copy of the survey document (p. 32).

[27] James, *Population Malthus*, p. 445.

[28] Guha emphasizes the importance of records in the early nineteenth century, and identifies W. H. Sykes as one of the earliest statistical reporters of the village community. He collected documents in Bombay presidency and wrote the earliest English accounts of them. Sumit Guha, *Beyond caste: identity and power in South Asia* (Ranikhet, 2016), p. 92.

[29] Colonel William Skyes Talbot, 'His contributions to statistical accounting', *Accounting History*, 15 (2013), pp. 253–76. Guha, *Beyond caste* (p. 130), notes that Skyes travelled across dozens of villages and undertook minute enquiries regarding land, crops, and services with farmers in each village.

[30] The enumeration of households and members of rural communities that was undertaken by officials of the East India Company in the early nineteenth century was influenced by the tradition of Political Arithmetic that was prominent in eighteenth-century England, and that later transformed into an apparatus for collecting colonial statistics (Guha, *Beyond caste*, p. 198). The transplanting of this tradition, which resulted in the first census in England and Wales being conducted in 1801, was also the logic behind the rolling out of the first colonial census in India that was conducted in 1881.

members of the new Society had begun to develop an opposing view: that the statistical data being collected by Section members was to support established theories of society rather than form new, global ones. Sykes was one such prominent member, and continued collating and publishing statistical data, eventually setting up a small Department of Statistics at India House in 1847, and publishing the first statistical series on British India in 1853.[31] The compilation, collation, and discussion of Indian population statistics, primarily those relating to the size and condition of British troops, and other series pertaining to land measurement provided by Sykes and other officials employed in the colonies, followed the objectives of the new Society to create an empirical tradition for the study of key economic trends.[32] And yet this was an oppositional tendency, as this predominant members' view did not reflect Malthus's own open approach to statistical data. Instead, the rising tide of 'empirical globalism'[33] saw the classification of colonial data as a method to control Indian natives and manage Company operations. In contrast, 'global' Malthus appears to be alive and well in the letters of Malthus's erstwhile students, who went out as officials of the East India Company to serve in India after completing their training at Haileybury; they show a keen interest in the collection of statistics on people, land, and food through the technique of survey questionnaires.

The first of these students was Brian Houghton Hodgson, who had resided at Haileybury while preparing for his admission to the college, as his mother was a friend of William Smyth, a contemporary of Malthus at Cambridge and later the regius professor of history. Houghton was a student at the East India Company training college between February 1816 and December 1817, and Malthus was a definitive influence on his intellectual development. Hodgson was dux in his

[31] T. J. Rao, 'Official statistics in India: past and present', *Journal of Official Statistics*, 26 (2010), pp. 216–17.

[32] His prolific publications made Sykes a prominent figure in statistical and political circles and also made him influential among professionals who were keen to influence government policy-making. Sykes was elected as the member of parliament from Aberdeen in 1857, and went on to be president of the Royal Asiatic Society in 1858. His compendiums were much sought after, and in a letter to a William Brown written on 24 August 1861, he writes: 'As I have been so repeated a contributor to the elucidation of Indian Statistics for the last 30 years I do not know which of my papers you wish to see – If it be a compendious view your desire, you will find it in the 2nd or 3 volume of the Transactions of the British Association; or more recent figures you will find in a Parliamentary paper (with maps and diagram) which though printed by order of the House of Commons before I became a Member is familiarly known as "Sykes's Statistics of India" & can be purchased at the office for the sale of Parliamentary Papers at the House of Commons, or at Spottiswood the Parliamentary printers – But if it be papers treating a separate subject you wish such as Education Vital Statistics, Public Works, Administration of Justice in India … you will find the papers printed in various volumes of the Journal of the Statistical Society of London.'

[33] Mayhew identifies the rise of 'empirical globalism', an ideology that regarded objects within Britain to have greater pedagogic and intellectual value than objects from other geographies, yet there was a keenness to 'evidence' what was taking place in these other geographies by cataloguing objects and peoples: in Finnegan and Wright, eds., *Spaces and global knowledge*, p. 14.

year, awarded prizes for economics, classics, and Bengali, and after his training was posted in Calcutta. He continued his run of academic excellence there by successfully learning Persian at Fort William College in short order. He was then posted in Kathmandu, to the office of the British Resident, where he successfully learnt the languages of Parbatiya and Newari while travelling in the region.[34] Malthus corresponded with Hodgson while the latter was posted in Nepal, about his keenness to pursue collection of data from countries further afield, whereupon Hodgson points out that it is extremely difficult to obtain empirical data on population and food prices and that the Gorkha administration guards such statistics very carefully.

I have not been unmindful of your wish to have some authentic particulars of the population, wages and prices of Nepal, nor have I neglected the attempt to procure such particulars for you. But you need least of all men to be told that accuracy relating to such points is indispensable and what with the jealousy of the gorkha gov and the extreme caution prescribed to me by my situation I have not yet been able to meddle effectively with these alarming topics. I do not despair however-will continue to exert myself-and shall have singular pleasure in thereafter presenting you the results of my labours should they prove at all successful.[35]

Hodgson's official duties revolved around data collection, classification, and evaluation, and he was responsible for the revenue settlement from 1819. He was required to acquire land revenue data so that the Company could ascertain tenancy rates and agree associated tax payments. This was a pivotal position in Nepal and he would have been the most appropriate officer to access the figures on population and food that Malthus was so keen to acquire. However, he faced difficulties in this pursuit due the ill feeling between the Company and the Gorkha administration on account of the Company's imposition on the Gorkha administration, including accepting a British Resident in Kathmandu in 1818. In such a hostile environment, the Gorkha government did not permit Hodgson and his team to leave Kathmandu,[36] but Hodgson continued to find methods to pursue his interests as a collector within the Kathmandu valley. His statistical prowess is evident in the cataloguing of his Buddhist manuscripts and information-gathering from local intellectuals for his (never completed) 'History of Nepal', which was drafted on the lines of a statistical survey.[37]

The second of these students was Benjamin Guy Babington, who studied at the East India College between 1810 and 1811, obtained a position in the

[34] The catalogue of the Hodgson Collection in the British Library.

[35] Letter written by Brian Houghton Hodgson, Nepal residency 15 Feb. 1830, John Pullen and Trevor Parry, eds., *T. R. Malthus, unpublished papers in the collection of Kanto Gukeun University*, 1 (Cambridge, 1997), pp. 138–9.

[36] William Wilson Hunter, *Life of Brian Houghton Hodgson: British Resident at the court of Nepal* (Delhi, 1991).

[37] Peter Pels and Oscar Salmink, *Colonial subjects: essays on the practical history of anthropology* (Ann Arbor, MI, 1999), p. 92n (see British Library (BL), Oriental and India Office Collection, MSSEur D497).

Indian civil service, and was posted to Madras presidency. He continued to correspond with Malthus after leaving Haileybury, returning to Britain from Madras due to ill health in 1919 and began to read medicine at Cambridge in 1820. Babington had come to be widely regarded as an exceptionally gifted linguist having mastered the Tamil language while at Haileybury, later translating Beschius's Tamil grammar, the leading publication for the teaching of Tamil since the late eighteenth century while he was in India.[38] He had the opportunity to provide Malthus a copy of his various translations after his return to Cambridge, and Malthus was enthusiastic about making use of Babington's publications to improve the provision of Indian languages in Haileybury, proposing that the college add some of these materials to the syllabus.[39] In the college record of 7 May 1822, Malthus noted that Babington had provided a new composition for the teaching of Tamil and that this 'composition in Tamil for Madras students-approved on the 14th, is accompanied by a testimonial from Dr Wilkins'. Malthus added that

> 'The Adventures of the Gooroo Paramartan, a tale in the Tamil language accompanied by a glossary and translation' will become an indispensable companion to Mr Andersons' should it be the pleasure of the Hon'ble court to direct that this useful Tongue be in future taught at the College to the students intended for the Madras Service.[40]

After completing his study, Babington went on to be an acclaimed medical professional, and was elected the first president of the Royal Epidemiological Society. In his inaugural lecture to the Society in 1850, Babington began by setting out the importance of using scientific principles to develop a better understanding of communicable disease. He emphasized the value of statistical methods, stating that 'Statistics too have supplied us with a new and powerful means of testing medical truth.'[41]

The expert collections and the survey method employed by Hodgson, as well as the close attention played to lauded grammatical compilations in the translations by Babington, are indication that they had imbued the principles of statistical enquiry that were also of keen interest to their old teacher, Professor Malthus, who was continuing to explore a survey-based approach to data collection and analysis. They in turn appear to uphold this approach, and their subsequent prominence in public life is linked to their ability to use statistical

[38] Thomas George Wilson, Benjamin Guy Babington FRCP, FRS (1794–1866), *Journal of Laryngol & Otology*, 67 (1953), pp. 90–7. The use of the survey method by Hodgson, similar to that used by Malthus and which the latter pressed his students and contemporaries to follow is an important research tool that gains importance in statistical circles over the course of the nineteenth century.

[39] Malthus supported the teaching of Indian languages, and the minutes of college meetings indicate his advocacy of the use of tutors to teach Indian languages at Haileybury.

[40] James Archives, Old Library, Jesus College, Cambridge, IV.2, box 6, p. 4435.

[41] David E. Lilienfield and Paul D. Stolley, *Foundations of epidemiology* (Oxford, 1994), p. 28.

methods to create new subjects of study, that of natural history in the case of Hodgson and epidemiology in the case of Babington.

The third student from Haileybury is Samuel Sneade Brown, who was at the college from 1826 to 1827, and subsequently went out to Fort William in Calcutta. He served most of that time as a magistrate in and around Delhi, assigned to managing revenue collection on behalf of the Company. A regular and long-standing correspondence with his mother in England while Brown was posted India from 1827 to 1841[42] indicated his keen interest in this very different geography and the value of compiling information of the culture of the inhabitants.

> I have an insatiable curiosity as far as regards the country, its inhabitants and their religion and manners; and I see so many instances of persons who have lived many years in the country being utterly ignorant of everything unconnected with their own limited sphere of action, that I am anxious to save myself from the reproach, which they so richly deserve, of sluggish apathy.[43]

Brown's emphasis on the value of collecting information to obtain a more detailed understanding of the country and its people is very much in keeping with Malthus's open approach to statistics, evident in his drive to collect survey data. Brown was deeply disappointed when officials worked for quick commercial gains rather than the larger interests of Britain and India. He regarded this as a failing of many of the well-regarded British colonial officials, and writes on 3 February 1838 about his views on Thomas Babington Macaulay's time in India.

> Mr. Macaulay, about whom you wrote to me some years ago, has returned to England unregretted by a single individual. He stayed altogether three years in this country, and, with the exception of his official duties, he has done nothing for India or the people. Expectation was on tiptoe on his arrival from the reputation which he carried with him of the splendid talents and active seal, but he has grievously disappointed everyone, and from the little interest he appears to have taken in the country, he could only have come out with the intention of saving as much of his pay as possible, and returning to England with some thousand pounds in his pocket. So much for your men of profession![44]

On Brown's return to England after a long period of service, he became a public official in the sanitation department, and in his *Notes of sanitary reforms*, Brown underlines the importance of the need for epidemiological data to examine deterioration in health in British cities. Once again, the continued keenness of another of Malthus's students to push for public oversight of official practice, with Brown's views on the need to collect statistics to improve public services,

[42] Samuel Sneade Brown, *Home letters written from India: between the years 1828 and 1841* (Cambridge, 2011).
[43] Ibid., p. 42.
[44] Ibid., p. 180.

bears a striking resemblance to earlier views on the need for an enlightened administration to govern an Indian population.

> Local administrative bodies, constituted as they are, seldom anticipate or look beyond the actual emergency. It was with no little surprise that the visitors to Birmingham at the late Social Science gathering learnt that the great and important town possessed no medical officer of health, to collect and bring into one focus its sanitary statistics, and that with great advantages, it had been living on the reputation of a death-rate, which, when applied to the several component parts of its large population, did not bear the test of examination. A necessity, therefore, presents itself for some more steady, close, continuous and authoritative direction and supervision of the national health than the existing systems admits of.[45]

While there is no evidence of correspondence between Brown and Malthus on the collection of data on population trends, the views expressed in *Notes*, particularly with regard to the ability to influence the behaviour of the lower classes, fits with the open approach that Malthus was advocating in the last decade of his life.[46] The views of this handful of returning East India Company officials on the value of an open approach to improve public policy in reducing epidemics and improving sanitation services contrasts with the dominant position of leading members of the Royal Statistical Society. The large sets of data on the impact of squalor and disease on human life collected by their members at best influenced public policy through favouring a closed approach, a return to a 'national' Malthus that recommended control of the populace in relation to accepted theories of societal trends. It was also in sharp contrast to the position of the majority of East India Company officials: that public policy is needed to control the native population through the gathering of statistics by language, religions, and caste classification, as well as the mapping of its land, climate, and resources. This is the set of modalities that Cohn identified as aiding the governing of the colony.[47] This oppositional tendency on the the role of statistics in fashioning government was particularly significant as

[45] Samuel Sneade Brown, *Notes on sanitary reform* (London, 1870), pp. 11–12.

[46] Fredrick Cooper and Ann Laura Stoler, *Tensions of empire: colonial cultures in a bourgeois world* (Los Angeles, CA, 1997), p. 141.

[47] Bernard Cohn provides a powerful examination of the investigative modalities that were designed by the British state to collect, collate, and classify information about its Indian colony and shows how the information was converted into 'facts' about the colony and its people that was subsequently used to subordinate the forms of knowledge and the modes of engagement of the native population and to police and justify the actions and policies of the colonizer. The historiography, observational/travel, survey and enumerative, mueseological and surveillance modalities that serve as a Foucauldian mode of control result in disempowering the local populace of authenticity and deny them agency. The ability to convert information into colonial forms of knowledge based on collection of empirical data results in a native population that is shorn of its own set of understandings regarding the legitimacy of their activities and pushes them into accepting a subject mentality regarding their own life, work, and culture. See Cohn, *Colonialism and forms of knowledge*, pp. 1–13, reprinted in *The Bernard Cohn omnibus*.

the state of falling tax revenues of the East India Company in the 1840s was increasingly to become the matter of parliamentary debates.[48]

III

This section sets out the the second oppositional tendency identifiable in the sharp contrast between the official proposition – that there was a pervasive Malthusian condition on account of social and cultural mores of Indians and the need to ensure the collection of land tax revenues in a difficult environment – and the minority position – the need to adopt an open system of using statistics to design an agricultural policy more conducive to improving the condition of Indian agriculture that was advanced by radical public figures in England.

The question of colonial public policy was built around an established model of Indian mores and proclivities to have a maximal number of children, and that it is most appropriate to regard the conditions of land and population in India to be the outcome of this pervasive Malthusian tendency.[49] The East India Company regarded this growing population to be the only reason for the onset of famine in India, as they deemed the land to be capable of plentiful produce, based on the data collected on conditions in monsoon abundant, high-yield rice-growing areas in Bengal. This was the first region of India where the Company had administrative control and, consequently, the ability to collect data, then used to propose a taxation system for all lands owned by the East India Company.[50] The land tax revenues collected by the Company subsequently became the first statistical basis for evaluating public policy, and the indication of rising costs and falling land revenues led to the voicing of official concerns. As Stokes shows in his magisterial account of peasant society in India, the falling revenues in Bengal at the end of the eighteenth century motivated an official policy of shoring up business, with Lord Cornwallis's code of 1793.[51] This resulted in the first land revenue settlement, termed the Zamindari Act and established a permanent ownership of land with the

[48] Hansard, House of Commons Debates, 10 July 1833, vol. 19, cc. 479–550.

[49] J. C. Caldwell, 'Malthus and the less developed world: the pivotal role of India', *Population and Development Review*, 24 (1998), pp. 675–96, see pp. 683–6 for a discussion on the official narrative on Indian population conditions being very closely aligned to those set out in Malthus's population principle.

[50] Sugata Bose, *Peasant labour and colonial capital: rural Bengal since 1770* (Cambridge, 1993).

[51] See Judith Whitehead, 'John Locke, accumulation by dispossession and the governance of colonial India', *Journal of Contemporary Asia*, 42 (2012), pp. 1–21, for a discussion of how the land revenue systems established in colonial India were based on an assumption that land would yield returns if managed using a private property regime and that the reason for productivity to fall was the despotic nature of Indian institutions; Eric Stokes, 'Bureaucracy and ideology: Britian and India in the nineteenth century', *Transactions of the Royal Historical Society*, 30 (1980), pp. 131–56.

purpose of increasing the returns on land revenue.[52] Following the implementation of the act, there were growing claims that corruption was rife in the activities of the East India Company officers, the highpoint of which was the public notoriety that emerged during the attempted impeachment of Warren Hastings by Edmund Burke in 1788. The concern was that the East India Company did not have the administrative capacity necessary for ensuring that revenue accrued to British parliament through a strict adherence to legal rules, and this was the basis for removing all trading functions of the East India Company in 1834.[53] Thomas Babington Macaulay, elected as a member of parliament in 1830, openly criticized the administration of British territories in India due to the faulty remit of East India Company. He regarded it as both a bureaucratic anomaly and susceptible to an early form of 'crony capitalism' run by a coterie of closely linked families employed by the East India Company, based at Fort William in Calcutta and also operating as a powerful lobby in parliament.[54] A growing preoccupation with improving official policy by undertaking administrative reform motivated Macaulay to become a regular attendee of the parliamentary debates on the renewal on the charter of the East India Company that took place between 1831 and 1833. He was well versed in the testimonies that were collected by the committee to write the new bill, and he delivered a speech in the House of Commons on 10 July 1833, at the second reading of the bill to push for a change in the balance of administrative duties between the British government and the East India Company.

> I think it desirable that the Company should continue to have a share in the government of India; and it would evidently have been impossible, pending a litigation between commerce and territory, to leave any political power to the Company. It would clearly have been the duty of those who were charged with the superintendence of India, to be the patrons of India throughout that momentous litigation, to scrutinise with the utmost severity every claim which might be made on the Indian revenues, and to oppose, with energy and perseverance, every such claim, unless its justice were manifest.[55]

Macaulay also indicated this preference for public policy closely adhered to legal rules, as a member of a committee, along with Lord Ashburton, Benjamin Jowett, Shaw Lefevre, and Henry Melvill, that was appointed in 1854 to 'take into consideration the subject of the examination of Candidates for the Civil Service of the East-India Company' and their recommendation

[52] Stokes, 'Bureaucracy and ideology', pp. 146–7.

[53] Ibid., pp. 146–8.

[54] Karuna Mantena, 'The crisis of liberal imperialism', *Histoire@Politique*, 11 (2010), pp. 1–25.

[55] Macaulay, Thomas Babington Macaulay, Baron (1800–1859), *Miscellaneous writings and speeches*, IV, www.gutenberg.org/etext/2170.

resulted in the shutting down of the college in 1855.[56] Macaulay's own decision was that he 'defended the system of education in the college' at the debate in parliament, and that he only supported the closing down of Haileybury due to the preference for 'competition in opposition to patronage'.[57]

The challenge posed by the corruption evident in Haileybury and the inability of its graduating students to perform land tax revenue collection duties effectively in colonial India provides one link between Macaulay and Malthus, via the workings of the East India Company. There is also an academic link between these two public figures, as Macaulay evinces an interest in the responses to Malthus's own publications, engaging with Sadler's refutation that the second edition of *Principles* (1803) implied an unwillingness to accept the benevolence of God.[58] Macaulay's response in the January 1831 edition of the *Edinburgh Review* drew on existing empirical data to critique Sadler's own proposition that a fall in population would adversely affect economy and society.

> We say, that these English tables no more prove that fecundity increases with the population than that it diminishes with the population. The thirty-four counties which we have taken make up, at least, four-fifths of the kingdom: and we see that, through those thirty-four counties, the phenomena are directly opposed to Mr. Sadler's principle. That in the capital, and in great manufacturing towns, marriages are less prolific than in the open country, we admit, and Mr. Malthus admits. But that any condensation of the population, short of that which injures all physical energies, will diminish the prolific powers of man, is, from these very tables of Mr. Sadler, completely disproved.[59]

Macaulay's decided preference for statistical data to test propositions about the impact of rising and falling population is far closer to the open approach to policy-making, and reflected growing public opinion in mid-nineteenth-century Britain, for favouring competition and improvement. Such ideas of improvement in Britain are markedly different to the oppositional tendency evident in official colonial policy that regarded India as 'backward' (as it was unimproved), and part of a larger Oriental despotism.[60] Official policy characterized the Indian population as indolent and apathetic; thus, any increase in the

[56] M. J. D. Roberts, *Making English morals: voluntary association and moral reform in England* (Cambridge, 2004), p. 193.

[57] Hansard, House of Commons Debates, 19 July 1833, vol. 19, cc. 479–550.

[58] Biancamaria Fontana, *Rethinking the politics of commercial society: the Edinburgh Review, 1802–1832* (Cambridge, 1985).

[59] Macaulay, *Edinburgh Review or Critical Journal*, 52 (Jan. 1831).

[60] Cohn points out that the primary interest of the East India Company was to ensure that they maximized revenues through the procedure of enforcing land settlement systems, and their intention was to collect 100 per cent of the assessed revenues. See Cohn, *Colonialism and forms of knowledge*, p. 59.

Indian population was to be regarded as a calamity rather than a blessing.[61] The lassitude of the populace was attributed to the lack of formal systems of property ownership, which resulted in perverse incentives to increase production or enhance labour productivity.[62] The emphasis was, consequently, on finding a closed system in a land that was in the clutches of a Malthusian spectre and hurtling towards certain doom. The bureaucrats at the India Office, who replaced the administration of the East India Company in the mid-nineteenth century, were intent on developing rule-based development policy. They devised a closed model of agricultural property rights with the purpose of improving land revenues and overcoming the ill-effects of the Malthusian spectre brought about by high levels of fecundity. This model was subjected to criticism in the 1870s, when Lord Mayo, appointed the viceroy of India in 1869, established a new Department of Agriculture, Revenue, and Commerce in 1871, to reduce the propensity for famines. The department was less inclined to regard the Indian population as indolent and pushed for greater attention to Indian welfare.[63] Agricultural policy reform came in the aftermath of a series of famines in the mid-nineteenth century, and the creation of the Famine Commission of 1866 which concluded that the huge loss of lives was due to the imminent expiry of land settlement and the indifference of the British bureaucracy. This questioning of the official Malthusian stance that regarded people, food, and land in India as variables within a fixed model, and that failing revenues were due to erroneous actions on part of the Indian subjects, is followed through by the recommendations of the Famine Commission pushing for a revised agricultural policy. This, in turn, led to the appointment of Allan Octavian Hume as secretary to the department, to drive the proposed reconstruction of the agricultural department.[64] Hume proposed a remedy to the closed model where revenues were regarded as the automatic outcome of

[61] Simon Commander, 'Malthus and the theory of "unequal powers": population and food production in India, 1800–1947', *Modern Asian Studies*, 20 (1986), pp. 661–701, makes the point that while Malthusianism seems writ large on the face of Indian agriculture, there is no evidence on any definition of the Malthusian model ever being stated in this regard. Mantena, 'The crisis of liberal imperialism', makes the point that the wresting of power from East India Company was cast in terms of the need to move from illegitimate form of governance to one based on rules that would ensure 'good governance'. This imposed a rule-bound approach to governing India and disallowed an empirical approach to understanding Indian society.

[62] Whitehead, 'John Locke, accumulation by dispossession and the governance of colonial India', makes a formal link between the lack of formal property rights and the Lockean notion of waste.

[63] William Wedderburn, *Allan Octavian Hume, father of Indian National Congress, 1829–1912* (London, 1913).

[64] Hume was also responsible for the founding of the Indian National Congress established in 1885, along with other leading Indians including Surendranath Banerjea, W. C. Bonnerjee, Manomohun Ghose, Lalmohan Ghose, Pherozeshah Mehta, Dadabhai Naoroji, Badruddin Tyabji, Dinshaw Wacha, and William Wedderburn.

agricultural legislation and adherence to rules, set out in his pamphlet *Agricultural Reform in India* (1879):

> The Director-General was to have immediately under him a small staff of experts, and was to keep up only just such an office as was absolutely unavoidable. There was to be as little writing and as much actual work as possible. Directors of Agriculture were to be appointed in each Province, also to be aided by experts. They were to work partly through the direct agency of farms and agricultural schools, and partly through the revenue officials of all grades down to the village accountants.[65]

These tracts spell out the need for an 'improvement' in agricultural production, through bringing in expert knowledge, a feature that was previously being acknowledged by the Statistical Section of the Association for the Advancement of Science in England, advocating a statistical approach to the making of public policy in earlier decades. Hume highlighted the importance of understanding local practices, and acknowledged that external laws might not work in a local context where village communities were governed by social norms.[66]

A growing consternation about the miseries inflicted by famines and the need to understand local conditions was also evident in the writings of Florence Nightingale, a key commentator on the Indian Land Question and its implications for public policy in India in the mid-nineteenth century. Nightingale, already a leading public figure, was recommended for election as a member of the Royal Statistical Society in 1858 by William Farr, the leading medical statistician in Victorian Britain, in recognition of her excellent use of statistical methods to bringing about sanitary reforms in the army.[67] What has been overlooked is that Nightingale also had a long-standing interest in changing the land revenue system in India, and she penned a manuscript on this subject titled *The zemindar, the sun and the watering pot as affecting life and death and India*.[68] This manuscript was a detailed study of Indian agriculture, addressing Nightingale's preoccupation with the disastrous impact of the land revenue settlement, particularly perturbed by the system that allowed Indian zamindars and European planters to domineer over the Indian peasant, in a manner that

[65] Wedderburn, *Allan Octavian Hume*, pp. 27–8.

[66] Ibid., pp. 30–1.

[67] Florence's father, William, would have encountered Malthus at the early meetings of the Statistical Society, and her mother Frances Nightingale was acquainted with the Malthuses as she was the daughter of William Smith, MP, who was a close friend of Malthus. It is therefore likely that the Nightingale family library would have contained publications of Malthus's writings, even though Florence Nightingale's own writings do not indicate any direct engagement with the writings of Malthus. See Hitoshi Hashimoto and John Pullen, 'Two unpublished letters of Malthus, with notes of connections between Malthus and William Smith, MP', *History of Political Economy*, 37 (2005), pp. 371–9.

[68] George Valée, ed., *Florence Nightingale on social change in India*, vol. x of *The collected works of Florence Nightingale* (Waterloo, 2007).

reflected 'something between an Irish middleman and an American slaveholder'.[69] Nightingale meticulously gleaned empirical data on rents collected across the Bengal and Madras presidencies, and her methods of gathering statistical materials to influence public policy falls squarely into the tradition of the Society, one that was pioneered by Malthus and the other co-founders.[70] Nightingale sent copies of her draft manuscript to a number of close friends, among whom were Sir Arthur Cotton, Bartle Frere, and Benjamin Jowett, then master of Balliol College and a close friend since 1862.[71] The comments she received were scathing in their criticism. In particular, Jowett cautioned against the publication of the manuscript, regarding Nightingale's suggestions for reforming the Land Act as 'too jerky and impulsive', and advising a complete overhaul.[72] Nightingale's radical view that land tax, rather than a Malthusian condition, lay at the root of Indian peasants' difficulties, was not readily accepted among official and professional circles.

While Nightingale did not pursue the publication of her manuscript, she also did not reduce her labours regarding the life of the Indian peasant, redoubling her efforts to obtain reliable information by engaging in correspondence with Indians. Writing in April 1878 to Prasanna Sen, an attorney at the Calcutta high court, Nightingale sought data on the Indian peasant's ability to pay rent, the threat of famine and death if unable to do so. She indicated that she did not regard Malthusian high fertility as the reason for famine. 'And I would suggest that it would be most useful if you were to obtain facts – trustworthy and individual *facts* – about their prosperity and its *causes*. That would not only be most interesting but would lead to great and practical good.'[73] It was Nightingale's intention to collate a rich compilation of Indian statistics, and her chosen method was to use survey methods, an approach that Malthus had adopted in his own queries. She wrote to Lord Salisbury in October 1875, setting out in detail the types of data needed to understand the state of Indian agriculture: 'the length of these notes meant to show the direction enquiry should take, if it is desired to have real results & returns'. She made it clear that the existing data on the condition of the Indian peasant lacked rigour, with different sources contradicting each other. She was deeply frustrated by this shortcoming: 'I am not simply writing as a parrot, if parrots write; - for I have laboured thro', & tried to tabulate, immense piles of

[69] Ibid., p. 397.

[70] As Nightingale's maternal grandfather, William Smith, was well known to the Malthus family, it is possible that she had access to the statistical treatises presented and discussed by the members of the society that might have made their way to various libraries of the Nightingale family. See Hashimoto and Pullen, 'Two unpublished letters', pp. 371–9.

[71] BL Add. MSS 45831.

[72] Valée, ed., *Florence Nightingale*, pp. 401–3.

[73] Priyaranjan Sen, *Florence Nightingale's Indian letters: a glimpse into the agitation for tenancy reform, Bengal, 1878–1882* (Charleston, NC, 2011), p. 3.

(so called) Indian Statistics myself.'[74] Nightingale pursued leading colonial officers to get a resolution on the contradictory data, and her notes of an interview conducted on 21 January 1875 with Sir Bartle Frere at University College, London, contains his revelation on the limitations of data collection – 'for an English official, does not go out and talk and ask among the natives, he will be hoodwinked about the conditions in the country'![75] Nightingale continued to be deeply troubled by the ever-present threat of famine, causing Sir Bartle Frere to offer the services of a Col. Fife, who 'could get any information on the subject of irrigation in Bombay or Sind which you might indicate to him'.[76]

Nightingale was also in correspondence with Dadabhai Naoroji, the first Indian professor of mathematics and philosophy at Elphinstone College, who also set up a cotton trading company, Dadabhai Naoroji and Co., in 1851. He went on to be the president of the Indian National Congress in 1886, a member of the House of Commons, 1892–5, and the author of *Poverty and un-British rule in India*.[77] Naoroji and Nightingale became regular correspondents on the subject of the condition of the Indian peasant. When Naoroji decided to stand for election, he requested her to write him a letter of support, and Nightingale wrote in June 1886,

> My heartiest good wishes are yours in the approaching election for Holborn, and this is not only for your sake, but yet more for that of India and England, so important is it the millions of Indians should in the British Parliament here be represented by one who, like yourself, has devoted your life to them.

Naoroji was not successful in the election and Nightingale writes to him, on his second attempt, in a letter on 24 June 1892,

> With all my heart and soul I wish you success. Now subjects seriously affecting the welfare of great India – subjects too so near my heart – will receive increased attention, being urged by a man like yourself, and we eagerly need such members in the House of Commons.[78]

Nightingale was determined that the conditions of Indian subjects should become public knowledge in England and create momentum for reform of the land rent system: the most effective method would be through having representation in parliament. This could remedy the propensity to conceptualize India as plagued by a Malthusian spectre and was a theme that was also echoed in *Poverty and un-British rule in India*, where Naoroji raised questions regarding the validity of the presumed relationship between a growing population and the level of poverty in India, countering the official Malthusian

[74] Valée, ed., *Florence Nightingale*, p. 756.
[75] Ibid., p. 469.
[76] Ibid., p. 137.
[77] Dadabhai Naoroji, *Poverty and un-British rule in India* (London, 1901).
[78] Lynn MacDonald, *Florence Nightingale on society and politics, philosophy, science, literature and education*, vol. v of *The collected works of Florence Nightingale* (Waterloo, ON, 2003), p. 364.

position that population growth would herald doom. Citing Macaulay's commentary that population increases are a harbinger for economic growth, Naoroji presented statistics that the average numbers of inhabitants across British India was lower than that in European countries. And while the province of Bengal was far more densely populated than these countries, it had a much lower rate of growth.[79] In pointing out the lack of a single correlation between population growth and resources in India, Naoroji had clearly used the logic that we see in Macaulay's response in 1831 to Sadler in the *Edinburgh Review*, which upholds Malthus's own thinking on the importance of empirical data for understanding the relationship between land, food, and people. This emphasis on the need for re-examining the statistical data in Naoroji's own work is to make explicit the need for public policy to treat its Indian subjects fairly, in a manner befitting a country within the empire. Naoroji made it clear in his speeches in London and further afield in England that India needed to be given her freedom if she was to continue to contribute to the economic wealth of the empire.

> With such necessity for England's own safety, whether she had India or not, any burden to be placed on India can only be done on the principle of the right of might over our helplessness, and by treating India as a helotdom, and not in justice and fairness. Yes; let India have complete share in the whole imperial system, including the Government of this country, and then talk of asking her to contribute to imperial expenses. Then will be the time to consider any such question as it is being considered in relations with Ireland, which enjoys, short of Home Rule, which is vital to it, free and full share in the whole imperial gain and glory – in the navy, army, and civil services of the Empire.[80]

This liberal view that was espoused by public figures such as Hume, Nightingale, and Naoroji clustered around raising the matter of the 'unequal' treatment meted out to Indians and rebuking the view that it was the Indian peasantry who were responsible for their own poverty. Their ideas also feed into the earliest nationalist proposal, calling for a less unfair treatment of Indians. This concerted push to shift public opinion in favour of reducing the particularly difficult circumstances that plagued the peasantry, and to identify that the poverty of the peasantry was due to the harsh system of land taxation rather than cultural modes, was, however, unable to replace the more generalized pessimism about the ability of Indian agriculture to support economic growth that permeated the official sphere in both England and India.

IV

The third oppositional tendency became evident in the early twentieth century, at a time when there was a geopolitical shift away from a British and towards an

[79] Naoroji, *Poverty and un-British rule in India*, pp. 12–13.
[80] Naoroji's speech at the National Liberal Club, on 15 Feb. 1896.

American construction of neo-Malthusianism. This is evident both in the 'nationalist' community development experiments of Rabindranath Tagore's Sriniketan and in the increasing international presence in India, the Rockefeller Foundation for example, both shaping future agricultural policy in India. National and international neo-Malthusianism emerges as the outcome of attempts to make sense of the state of people, food, and land to ensure the success of the national struggle and the subsequent need to design and implement a development policy. The 'nationalist' reorganization of agriculture was first embarked upon by Tagore who advocated new agricultural training in the United States. He dispatched his son Rathindranath, along with two other young men, Nagendranath Gangulee and Santosh Mukherjee, to study agriculture at the University of Illinois, in 1907.[81] Rathindranath and Santosh returned to teach at Shantiniketan, in charge of Tagore's newly established Institute of Rural Reconstruction from 1922. Locating the future of India in such newly created village communities, a theme that was close to the hearts of Nightingale and Hume, are clearly evident in Tagore's ideas of rural development.

> If we could free even one village from the shackles of helplessness and ignorance, an ideal for the whole of India would be established … Let a few villages be rebuilt in this way, and I shall say they are my India. That is the way to discover the true India.[82]

While Tagore wanted to promote these ideas in India, Gangulee travelled between India and Britain, to lecture on the central importance of agriculture for India's future: 'it affects a very large part of our population. To my mind it is of the greatest national interest.'[83] He was particularly keen on 'an economic survey of our rural areas, that rests with the administrative officers of the agricultural college and the state Departments, and when this is done, the students will realize the pubic and social aspects of our agricultural problem'.[84] While the value of a statistical survey was being advanced by Gangulee, the importance of scientific agriculture was at the heart of Tagore's conceptualization of Sriniketan, which was to become a community where villagers could gain self-

[81] Tagore thought well of young Nagendranath, and arranged a marriage between the young man and his daughter, Mira, in 1907. Unfortunately, Nagendranath turned out to be a severe disappointment; he was a spendthrift and had no interest in working in India's villages. His marriage with Mira ended in the late 1920s, and he spent most of his time travelling between India and England attempting to gain an office that would accrue greater personal wealth. See www.scots-tagore.org/mira-devi, accessed on 20 Sept. 2017.

[82] Kathleen O'Connell, 'Rabindranath Tagore's rural reconstruction: achievements and failures, from a speech that Tagore delivered at the seventh anniversary of Sri Niketan in 1928', downloaded www.dorfentwicklung-indien.de/fileadmin/Infomaterial/Berichte/GASS-25_2012__O_Connell__Kathleen_Tagore_s_Rural_Reconstruction.pdf, accessed on 20 July 2017.

[83] Nagendranath Gangulee, *Problems of rural India: being a collection of addresses delivered on various occasions in India and England* (Calcutta, 1928), is a collection of his speeches and papers addressing the subject.

[84] Ibid., p. 11.

reliance and self-respect based on their own cultural traditions of peasant proprietorship.[85] Tagore was also insistent that the Indian National Congress should adopt a new agricultural model to address seriously the need to feed India's millions and to eradicate poverty, illiteracy, and disease. His desire to overcome these neo-Malthusian obstacles drove him to engineer an agreement between political rivals Subhas Chandra Bose and Nehru: the new planning committee established in 1938 would be chaired by Nehru, in the interests of devising an assured agricultural strategy for a hungry India.[86] There is further evidence of neo-Malthusianism within in the national movement, with Radhakamal Mukherjee, head of the planning committee's group on population, pushing for a population policy rather than a food policy in keeping with a closed Malthusian approach: the fecundity of the populace rather than a shortage of food was regarded as the key problem.[87] The most extreme view was that of M. K. Gandhi who appears to posit the need for a greater neo-Malthusian pressure in India in 1947! He regarded an increasing price of food to be motivation to make everyone work harder.[88]

In contrast, there was a different view emerging among professional economists in the first decade of national planning. They perceived a pressing need to devise a post-Malthusian formulation by addressing directly the ways to improve the contribution of agriculture to the national economy. V. K. R. V. Rao and D. R. Gadgil, later to become founders of a number of leading economic institutions in India, were predominantly concerned that Indian planning should conjointly examine the role of agriculture and industry to ensure the well-being of its people.[89] A variant on the role of agriculture is evident among the Bombay school of economists, led by P. R. Brahmananda, B. R. Shenoy, and C. N. Vakil, who regarded the price of food, known in classical economics as the wage good constraint, to be as the primary obstacle to growth and prioritized agricultural goods as the primary source of exports rather than industrialization.[90] The range of responses to the neo-Malthusian construction that was circulating in the Indian National Congress indicate that there was no consensus on the best strategy to move from a positively to a preventively

[85] In the *Visva-Bharati Bulletin*, 10 (1928), Tagore pointed out that the objective of the Institute was to educate the Indian peasant about their own culture and institutions.

[86] Girish Mishra, 'Nehru and planning in India', *Mainstream Weekly*, 52 (2014).

[87] See Sunil Amrith, 'On the planning committee's obsession with eugenics in political culture of health in India: a historical perspective', *Economic and Political Weekly*, 13 (2007), pp. 114–21; and Benjamin Zachariah, 'Uses of scientific argument: the case of development in India, c. 1930–1950', *Economic and Political Weekly*, 36 (2001), pp. 3689–702.

[88] Colin Clark, a leading statistician, who taught V. K. R. V. Rao at Cambridge, was invited by the Planning Commission to write a report on Indian prospects for economic development and recorded these comments that were part of an interview that Gandhi gave him; Gerald Meiers and Hans Singer, eds., *Pioneers in development* (Oxford, 1984) p. 63.

[89] V. K. R. V. Rao, *The partial memories of VKRV Rao* (New Delhi, 2002), p. 48.

[90] Medha Kudaisya, '"The promise of partnership": Indian business, the state and the Bombay Plan', *Business History Review*, 88 (2015), pp. 97–131.

checked society, but there was a clear sense that both politicians and professionals were searching to find a way to devise an agricultural strategy that would increase the rate of economic growth.

The second driver of the geopolitical shift towards the United States was spearheaded by the Rockefeller Foundation and its declaration that India was an underdeveloped country in the 1940s. An inter-office memo circulated in the Foundation at the eve of India's Independence described the country as 'too vast and complex'. There was a need for 'a thorough-going survey' before making any decision on the types of policy that it might fund.[91] This suggestion was at odds with the thinking put forth by Joseph Willits, the director of the Social Sciences Division who proposed a development model 'where the ratio of developed resources to population was a problem in all "unindustrialised" countries'.[92] He consulted Sir Richard Stone, later Nobel Laureate in Economics, on his approach, who responded that any model required statistics, and that techniques used to calculate national income in industrialized economies were not likely to produce good results in underdeveloped countries.[93] Stone's emphasis on the need for empirical data was closely aligned to Malthus's late thought on the value of an open approach, and was debated among officials of the Rockefeller Foundation. Alan Gregg, the vice president of the Foundation, noted in 'Precarious welfare' written in 1951 that there was a need to move away from the neo-Malthusian view that positive checks were inevitable towards the proposition that improved public policy could support the economic needs of a growing population in India.

> It seems to me that the whole problem for us in India is to teach the Indians how to produce locally and by themselves the knowledge and skills now and till now furnished by the West. Medical science, stability of government and agricultural technology have made possible the growth in population, and on these their enormous number now depend.[94]

While the Foundation accepted that there was a definitive neo-Malthusian situation in India, and that it was necessary to improve agricultural production, it was the US political leadership that most explicitly put forth the notion that it was co-operation between the US and India that would be the key to increasing food supply. At the inauguration of the World Agricultural Fair in 1959, Dwight

[91] Rockefeller Archive Center, Rockefeller Foundation records, projects, RG 1.2, series 460, box 1, folder 1, memo, 22 May 1947, accessed on 10 Apr. 2016.

[92] Joseph Willits, response to Warren Weaver's memo, https://rockfound.rockarch.org/digital-library-listing/-/asset_publisher/yYxpQfeI4W8N/content/response-to-warren-weaver-s-memo-regarding-allahabad, accessed on 10 Apr. 2016.

[93] Joseph Willits, memo on Monday, 25 June 1951, on conversation with Richard Stone in Cambridge, http://dimes.rockarch.org/1dcb2d32-9a00-402b-9af2-c3cab635f476, accessed on 25 Mar. 2017.

[94] Alan Gregg, 'Precarious welfare' memo, https://rockfound.rockarch.org/digital-library-listing/-/asset_publisher/yYxpQfeI4W8N/content/precarious-welfare, accessed on 10 Apr. 2016.

Eisenhower emphasized the benefits of new links to ensure that India could better manage the lives its vast rural millions.[95]

> Today, we have the scientific capacity to abolish from the world at least this one evil, we can eliminate the hunger that emaciates the bodies of children; that scars the souls of their parents; that stirs the passions of those who toil endlessly and earn only scraps. Men, right now, possess the knowledge and the resources for a successful worldwide war against hunger – the sort of war that dignifies and exalts human beings. The different exhibits in this whole Fair are clear proof of that statement.[96]

The emphasis on the superior ability of the US to overcome hunger and turn population growth from a curse to a source of economic advancement was evident in the American exhibit at the Fair – 'Food–Family–Friendship–Freedom' – a shorthand for the grand purpose of achieving world peace through the uniting of Indian and American interests under the same banner.

> Here are four words that are mightier than arms and bombs; mightier than machines and money; mightier than any empire that ruled the past or threatens the future. Here are four words that can lift the souls of men to a high plane of mutual effort, sustained effort, the most rewarding effort that can be proposed to mankind.[97]

Oppositional tendencies are identifiable in the 1940s. On the one hand, the role of internationalism, to create a better-fed India so that it could walk confidently into its new-found freedom and the nationalist ideals of Tagore's Sriniketan;[98] that freedom from hunger and ensuring economic development should be based on a domestically created community approach to development. On the other hand, the Foundation was pushing for US aid policy to assist India as part of the new strategy of development for peace, as it was concerned that India's surging population might become a cause for global war.[99] Such divergences between the closed and open approach to statistics is also evident in other international quarters: with the advice of Professor Austin Robinson, a close observer and commentator on the Indian economy, to his professional colleagues in India of the need to acquire new empirical evidence on the trends in population and food supply in India:

> In a country in which national statistics are so difficult to compute, and in which the price differences between the village and the large town are so considerable, this

[95] Eisenhower was in India from 9 to 14 Dec. 1959, at the invitation of India's president, Rajendra Prasad, and the visit was orchestrated by the agriculture minister, Punjabrao Deshmukh.

[96] Dwight Eisenhower, 'Remarks at the opening of the World Agriculture Fair in New Delhi', 11 Dec. 1959. Online by Gerhard Peters and John T. Woolley, *The American presidency project*, www.presidency.ucsb.edu/ws/?pid=11618, accessed 5 Apr. 2016.

[97] Ibid.

[98] The emergence of a nationalist interest in creating village republics is far better known in the case of the politics and policies propounded Gandhi and his establishment of Sevagram.

[99] Nick Cullather, *The hungry world* (Cambridge, MA, 2013).

method of measurement of the sufficiency of the national dividend is probably more illuminating than any other. Even if lower estimates of the basic metabolism of Indians permits the assumption that the average food requirement of an adult male is some 400 calories per diem below that of a western European, there is a food deficiency for India as a whole of the order of 12 per cent. The bogey of Malthus, that has been so thoroughly exorcised from Europe that population growth has now become an end of policy, still retains its pristine diabolism in India.[100]

Robinson's response highlighted the need for Indian politicians, officials, and professionals to take seriously the importance of an open approach to collecting statistics, and indicated that policies should only be made using an inductive method of reasoning. The preference of the Indian nationalists was to address the role of agriculture to improve the state of India's food supply for economic growth, while the American formulations were built on the need to overturn the imminent threat of a neo-Malthusian tragedy of the commons and avert global war by accepting the donor policies of the United States.

V

The need to overcome neo-Malthusian thinking in explaining the relationship between population and food supply remained a concern among the architects of the new national planning system. The radical decision to invest primarily in the creation of an industrial sector was at least in part an attempt to move beyond regarding the economy solely as the relationship between people and food. With the appointment of P. C. Mahalanobis, D. R. Gadgil, and V. K. R. V. Rao as members of the new national planning committee in 1949, there was also a push to an open approach to statistics to address the crucial need for primary data collection in India to gain a clearer contour of the economic contribution to national income, particularly of the ability to feed its population.[101] The committee of international economists and statisticians, led by Prof. Simon Kuznets, previously associate director of the Bureau of Planning and Statistics, War Production Board, Prof. J. R. N. Stone, newly appointed director of the Department of Applied Economics, University of Cambridge, and Dr J. B. D. Derksen of the International Statistical Association, concluded that the conceptual categories and empirical data collection method for the estimation of national accounts could not be based on categories previously developed for use in industrialized countries.[102] The primary need for low-income countries, which were predominantly based on

[100] Austin Robinson, review of Radhakamal Mukherjee, 'Food planning for four hundred million', *Economic Journal*, 8 (1938), p. 740.

[101] Jagdish Bhagwati and Sukhamoy Chakravarty, 'Contributions to Indian economics: a survey', *American Economic Review*, 59 (1969), pp. 1–73.

[102] Wilfred Malenbaum, 'India and China: contrasts in development experience', Centre of International Studies, MIT, Project No. 764 (1959).

agricultural production, was new statistical tools[103] to provide sources of data for agricultural policy-making.[104] These gaps in the statistical base – essential for Indian planning – became key parameters for the design of early Indian planning documents and continued to impact the development trajectory of the country for future decades.[105]

Neo-Malthusian thinking was a lively ideology in Independent India, and its historical roots, going back to Malthus's own ideas and times, become evident by distinguishing 'two approaches' to statistical data collection. Important Malthusian moments can be identified. The first lay in the opposition of 'national' and 'global' Malthus, showing how the validity of Malthus's own propositions on population gave way to an ideologically constructed image of Indian agriculture. The second was to explore how a closed approach resulted in a pervasive Malthusianism, devised by official elites in British India to control and coerce the Indian populace to ensure continued tax revenue collection. This was in contention with an alternative open approach to data collection that used survey methods, constructed by radical public figures in Britain and India who supported a more positive view of agricultural policy in India. The third was to untangle the various responses to neo-Malthusian thinking that emerged in the early twentieth century, with a shift to a community agricultural model devised by Tagore. This constrasted with American attempts to provide aid to avert global war by increasing food production. In each case, there was tension between a closed model of policy-making with scant use of empirical data for deductive thinking, and a search for new statistics on population, food, and land to embark on an inductive approach to agricultural policy. By bringing to the forefront the role played by the collection and interpretation of statistical data in identifying the relationship between food, land, and people, alongside a co-locating of Malthus, statistics, and Indian agricultural policy, it becomes possible to examine explicitly the phenomenon of the rising tide of 'empirical globalism'. It also shows that agricultural policy-making in independent India continued to be plagued by a Malthusian tendency to relapse into simplistic and closed thinking: that population pressure would inevitably cause prolonged periods of hunger and become a serious obstacle to industrial development. This dismal condition of agriculture, the result of the continued presence of a Malthusian spectre, with an inability to emerge from the opposing tendencies located in each of the preceding three centuries, has shut off the possibility of using statistics to devise new visions where agricultural communities have the ability to contribute productively to development policy-making.

[103] Mahalanobis, the founding chair of the Indian Statistical Institute, spearheaded the creation of sampling surveys to estimate consumption needs.

[104] Rebecca Williams, 'Rockefeller Foundation support to the Khanna Study: population policy and the construction of demographic knowledge, 1945–1953' (2011), Rockefeller Archives Center Research Reports, http://rockarch.org/publications/resrep/williams2.pdf, accessed on 1 July 2017.

[105] Mahalanobis, as the head of the Indian Planning Commission, used the surveys for the design of the second Plan.